

TASMANIAN FOOD ACCESS RESEARCH COALITION (TFARC)

Research Report



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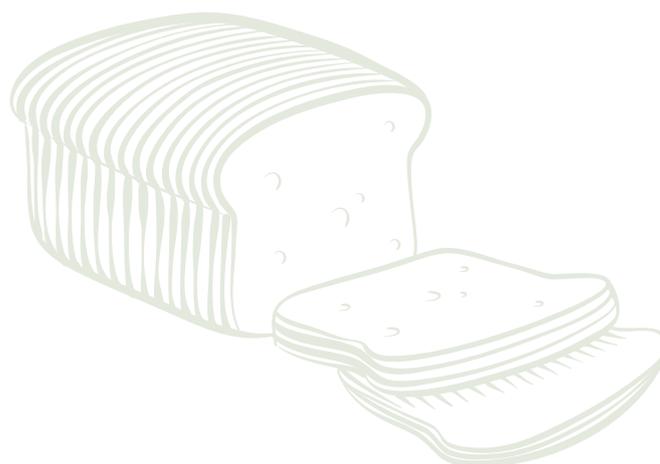
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List of abbreviations and acronyms

ABS:	Australian Bureau of Statistics
AGTHE:	Australian Guide to Healthy Eating
ASGC-RA:	Australian Standard Geographical Classification – Remoteness Accessibility Index
CCNSW:	Cancer Council of New South Wales
DHHS:	Department of Health and Human Services
EFR:	Emergency Food Relief
GIS:	Geographical Information System
HFB:	Healthy Food Basket
IHFB:	Illawarra Healthy Food Basket
IRSD:	Index of Relative Socio-economic Disadvantage
LGA:	Local Government Area
NAICS:	North American Industry Classification System
NHMRC:	National Health and Medical Research Council
NRVs:	Nutrient Reference Values
NTMB:	Northern Territory Market Basket
QLD HFAB:	Queensland Healthy Food Access Basket
RDI:	Recommended Dietary Intakes
SEIFA:	Socio-Economic Indexes for Areas
TFSF:	Tasmanian Food Security Fund
TFARC:	Tasmanian Food Access Research Coalition
THFSS:	Tasmanian Household Food Security Survey
THFB:	Tasmanian Healthy Food Basket
TFOAT:	Tasmanian Food Outlet Audit Tool
UTAS:	University of Tasmania
VHFB:	Victorian Healthy Food Basket
WA FACS:	Western Australian Food Access and Costs Survey

Glossary

Address point layer: A dataset that uniquely defines and locates residential, business and public postal addresses in a geographical area. Address point includes the geographic coordinates of each postal address. This enables users to map individual addresses.

Emergency food relief: Strategies directed at those who are most food insecure, usually providing short-term relief for the immediate problem of lack of food; does not usually deal with underlying problems that cause food insecurity such as low income.

Financial access: The ability to buy fresh and nutritious foods with one's regular income.

Food access: The socio-economic determinants that influence people's ability to acquire fresh and nutritious food. These include physical access, financial access, and other access issues.

Food desert: A term used to describe a situation in high income countries in which healthy nutritious food is rare or even absent in a region or community.

Food insecurity: The inability, or limited ability, to obtain nutritionally adequate or safe food in socially acceptable ways.

Food security: The ability of individuals, households and communities to acquire food that is healthy, sustainable, affordable, appropriate and accessible.

Healthy Food Basket: A list of food items chosen to represent commonly available and popular food choices which meet at least 85% of the nutrient requirements and at least 95% of the energy requirements for individuals.

Participatory approach: A collaborative research process that embraces self-determination, encourages ongoing consultation and negotiation, and provides opportunities for capacity-building and empowerment in the communities or individuals involved in the research.

Transport layer: Data that maps the road networks of a geographical area from major highways to smaller streets and pedestrian lanes.

Executive Summary

The Tasmanian Food Access Research Coalition developed and tested tools to measure the experience of food security in different Tasmanian settings. The success of these tools provides the beginning of a state-wide food security monitoring and evaluation system.

The research coalition developed the following:

- A method for categorising food outlets (the Tasmanian Food Outlet Audit Tool);
- A standard selection of acceptable food choices specific to Tasmania which would supply 85% of the nutrients and 95% of the energy requirements for four household types for two weeks (the Tasmanian Healthy Food Basket);
- A tool for evaluating the cost, variety and quality of food available at food outlets (the Tasmanian Healthy Food Basket Tool); and
- A tool for evaluating food security issues (specifically access, affordability, availability and awareness) at a household level (the Tasmanian Household Food Security Survey).

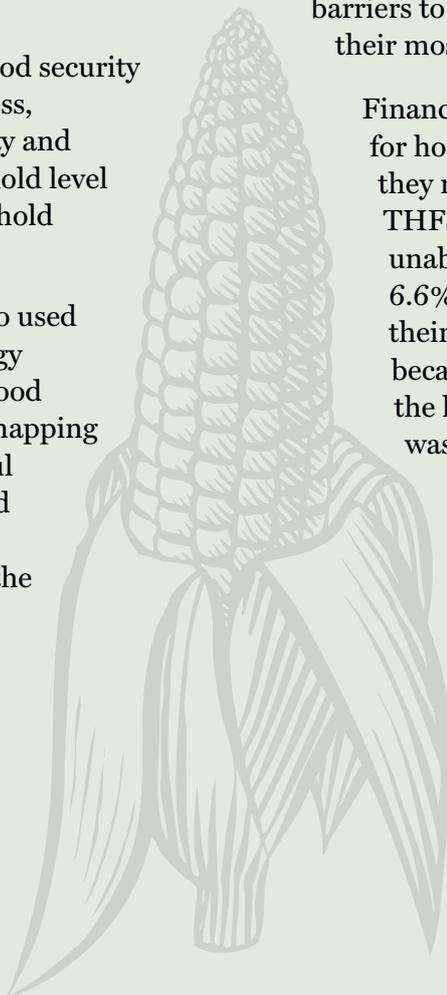
The research coalition also used spatial mapping technology to explore issues around food accessibility. The spatial mapping techniques provided useful insights into issues around the spatial distribution of food outlets, particularly the relationship between food outlet location and the spatial distribution of socio-economic disadvantage.

Community forums and focus groups, led by teams of community food researchers and professional researchers, proved an effective model for identifying and prioritising issues and local strategies for addressing food access issues for local communities. The research demonstrated that this combination of data collection and community engagement worked in both rural and urban settings. The data produced through this process provided important insights into the experiences of people living in two very different Tasmanian municipalities.

The impact of household income on food security emerged as a significant issue in the research. There was an association between family income and food access. There was a significant difference among respondents in relation to barriers to travel to food shops based on family income. Families with lower weekly income were found to have greater barriers to travel between their homes and their most visited food shops.

Financial problems were a barrier for households in getting the food they need. Fifteen per cent of the THFS respondents reported being unable to buy nutritious foods and 6.6% indicated that the members of their house had gone without food because of the shortage of money in the last 12 months. Family income was a significant fact determining experiences of food shortages.

The cost of food relative to household income was exposed as a serious problem for many households. The research looked at what it would cost a household to purchase a basket of healthy





food that would meet 85% of the nutrients and 95% of the energy requirements of the family members. It found that low-income households are spending up to 46% of their income on a basket of healthy food in comparison to households on a waged income, which are spending up to 22%, and that as a result the cost of food relative to income continues to be a burden. Clearly low-income households cannot afford to spend this much of their budget on food, and coping strategies reported by research participants included some, such as cutting down on nutritious foods, that are associated with poor health outcomes.

Physical access to food outlets was also revealed to be an important determinant of food security in the two municipalities under study. A quarter (25.2%) of the THFS respondents reported living more than 5km from their most frequently visited food shop and 19.3% more than 20km away. Regarding means of transport, the large majority (89.3%) of the participants reported using cars as the main way of travelling to their most frequently visited shop. For some (9.6%) there were difficulties in getting to food outlets. The access barriers were identified to be expensive petrol, lack of private transport, lack of public transport and physical limitations.

Online shopping was not a popular choice. A majority (91.8%) of the THFS respondents reported never shopping online.

Both municipalities have many populated areas where there are no food outlets within walking distance of domestic residences,

sometimes known as ‘food deserts’. This was especially the case in Dorset. Access to food outlets by foot is more limited for people living in the outer areas of Dorset. The mapping of food outlets in the two municipalities demonstrated that access to healthy food outlets decreased as people move from central city/township areas to the urban fringe or into rural areas. A number of areas were identified as having no food outlets. These are areas which could be denoted as food deserts.

Findings of the research included that 87.2% of the survey respondents reported eating fruit and vegetables on a daily basis. There was an awareness of nutrition among the majority of the survey respondents with 78% of survey respondents reporting their use of the food label information printed on the food packet.

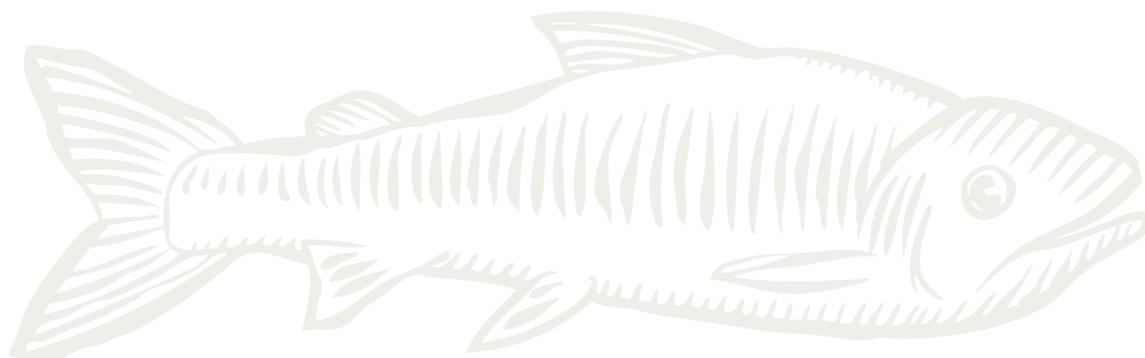
The community engagement which accompanied this research revealed that food security concerns are of real concern at local level. Communities are already tackling these issues in a range of traditional and innovative ways. Support for local initiatives, appropriate planning and regulatory systems and support for local food systems were all identified by community members as important strategies for supporting food security in Tasmanian communities.

The research also demonstrated that for a number of people in both municipalities food security issues were of real concern which could be addressed through improved income adequacy and the development of infrastructure, physical environments and policy environments that support food security.

1 Introduction

Food production and sale is a major contributor to the Tasmanian economy. However, in recent years there have been marked changes in the way food is produced, marketed and consumed. Community service organisations engaged with local communities and prominent in delivering emergency food relief report that cost of living pressures and low fixed incomes are combining to exclude an increasing number of people from access to regular and nutritious food (see for example Flanagan & Flanagan 2011). Whilst there have been efforts made to address the causes of food insecurity in Tasmania through measures such as the implementation of the Tasmanian Food and Nutrition Policy in 2004 and the establishment of the Tasmanian Food Security Council in 2010, there is limited data on the levels of food security in Tasmania. The Social Inclusion Strategy developed by Tasmania's Social Inclusion Commissioner, Professor David Adams, found that many Tasmanians are excluded from access to regular and nutritious food but noted a need for more data on the status of food in Tasmania. The strategy stated that food security stands out as an opportunity for action and highlighted the need for a whole of government approach to addressing the issue of food security, as food insecurity has an impact on social inclusion, health and wellbeing, and the economic prosperity of Tasmania (Adams 2009).

In its *Preliminary Response to the Social Inclusion Strategy*, the Government accepted the recommendation to establish a Tasmanian Food Security Council (TFSC) whose role would include the development of a Food Security Strategy for Tasmania and oversight of a fund to support food security activities.



1.1 Project funding

In 2010 a total of \$728,730 in grants was allocated through stage one of the Tasmanian Food Security Fund (TFSF). The fund's goal was to encourage innovative responses across the state to improve Tasmanians' access to a supply of food that is sufficient, reliable, nutritious, safe, affordable and sustainable. Submissions were invited from coalitions of organisations that addressed one or both of the priority areas:

- Innovative responses that have a strategic focus and build on existing capability to address the determinants of food security; and
- Develop monitoring and surveillance capability to improve the measurement of food security in Tasmania.

The funding was administered through the TFSC. The Council acknowledged that current responses to food security were characterised by good activities but lacked scale, scope, sustainability and connectivity. To address this, a key requirement for the allocation of funding was evidence of a collaborative approach. The TFSC believed that a coalition model could more effectively deliver on the funding objectives.

In response to this call for submissions six interested Tasmanian organisations formed a coalition called the Tasmanian Food Access Research Coalition (TFARC) to address the food security issues of access, availability, awareness, knowledge and affordability in two local government areas, Dorset, a rural and remote classified area, and Clarence City, which contains urban, peri-urban and rural areas (Clarence City Council 2011). Coalition members were Anglicare Tasmania, the lead agency, University of Tasmania Department of Rural Health and School of Human Life Sciences, Clarence City Council, Dorset Council and Primary Health Care North Esk (DHHS).

1.2 Project governance

The project was governed by a Memorandum of Understanding (MoU) drafted and agreed upon by the coalition members. The MoU defined the relationship between members, roles and responsibilities, general working principles and guiding principles for decision-making. The MoU provided a framework for how the coalition would operate and defined the governance procedures for the coalition including the nomination of a chairperson and a lead agency. Whilst the coalition operated under a consensus model it was

necessary to identify a lead agency that would represent the coalition in matters contractual and administrative. In keeping with the requirements for the Request for Proposal the MoU defined Anglicare Tasmania Inc. as the lead organisation for the coalition, and Anglicare sought a funding agreement on behalf of the group. The MoU required that Anglicare engage with the coalition members to undertake agreed-upon responsibilities for the project once successful. Allocation of funds to coalition member organisation was based on specific activities with individual member organisations taking responsibility for the coordination and completion of agreed tasks

A communication strategy was developed to ensure consistency, quality and coordinated processes were maintained in managing the flow of information from both within the coalition and to external stakeholder groups. Information was divided into three categories – information generated and despatched by the Tasmanian Food Access Research Coalition committee, information generated by a member in response to a particular component of the project and information released through coalition member organisation media offices. A separate communication strategy has been drafted to focus on the dissemination of the project findings and recommendations to stakeholder groups.

1.3 Food security

Food is one of the most basic human needs and is not only essential for health and wellbeing but for economic growth and development. However, within Australia, including Tasmania, there is evidence of food insecurity among sections of the population (Booth & Smith 2001; Rychetnik et al. 2003).

A critical entry point for the Tasmanian Food Access Research Coalition project was adopting an accepted definition of food security. Whilst the literature provides various definitions of food security, for the purposes of this study the coalition adopted the definition that 'Food security refers to the ability of individuals, households and communities to acquire food that is healthy, sustainable, affordable, appropriate and accessible' (Rychetnik et al. 2003, p. iv).

Conversely food insecurity is the inability, or limited ability, to obtain nutritionally adequate or safe food in socially acceptable ways. Food insecurity can be related to locational factors, such as living where shops are not accessible

or transport is not available. It also takes into consideration structural determinants such as education, income and employment (Sustain 2010).

This research also undertook to explore the concept of 'food deserts' and its possible application to a Tasmanian setting. There is no common definition of 'food desert' but it is a term that has emerged to describe a situation in high income countries in which healthy nutritious food is rare or even absent in a

region or community (Larsen & Gilliland 2008; Pearson et al. 2005; Raja et al.2008).

Central to the research was gaining an understanding of what food security meant to residents of the two study areas and capturing their views on food availability and supply, access and utilisation. The project used an asset-building approach, seeking ways to tap into and build on existing community skills and resources.



2 Research aims

2.1 Aim

The aim of this project was to identify and improve understanding of food access in two Tasmanian municipalities, Dorset and the City of Clarence, through the cooperation of various project parties in a community development framework.

2.2 Research question

The principal research question was: what are the enablers and barriers to food security in Clarence City and Dorset municipalities?

2.3 Objectives

The project was guided by the following objectives:

- 1 To map food accessibility using spatial mapping technology;
- 2 To identify and prioritise models and local strategies to address food access issues involving local communities and food outlets;
- 3 To produce a standardised methodology to collect robust data on food access to inform the development of the Tasmanian Food Security Strategy by:
 - a developing a standard selection of acceptable food choices which contribute to a healthy diet for people in Tasmania;
 - b developing a method for categorising food outlets;
 - c using GIS techniques to construct maps and produce measurable indicators of local food access;
 - d developing a household food security questionnaire focused on access, affordability, availability and awareness;
 - e conducting community forums, focus groups and in-depth interviews to identify community issues with access and supply;
- 4 To test the feasibility of the model as a monitoring survey to contribute to a state-wide food security monitoring and evaluation system; and
- 5 To provide recommendations for improvement of food security in Tasmania.

3 Background



Food security has become a topical issue at both international and local levels. Its pervasiveness as a major concern may be attributed to global vulnerability to climate change and variability, the scarcity of non-renewable resources (Davis 2010), the fragility of the global food system (PMSEIC 2010), and unequal access to the available dietary diversity (Dixon et al. 2007). The global economic downturn with its consequent rise in some food prices has further highlighted the issue of food security (Bodor et al. 2008). Whereas food security has long been a concept associated with the prevention of famine in the countries of the global south it has more recently become an issue in high-income nations. For example, according to Nord, Andrews and Carlson (2007), in the United States in 2005, 35 million people (12.1% of the population) lived in food-insecure households. In Canada, about 10% of the population were classified as food insecure (Vozoris, Davis & Tarasuk 2002) and the rate was reported to be approximately 14% among the adult population in New Zealand (Russell et al. 1999).

According to the Australian Bureau of Statistics (ABS) and the then Commonwealth Department of Health and Family Services (1997), 5% of the general Australian population were regularly at risk of food insecurity in 1995. Although there is not a more recent national assessment of food security, the level of food deprivation in Australia is expected to increase over time, especially among vulnerable and disadvantaged groups. As food security encompasses almost all aspects of the food system, impacting on health, development opportunities and capacities of individuals, households and communities (Hussein 2002), it has become a powerful lens through which to examine such issues as nutritional adequacy, food equity, health status and national wellbeing as a whole. The Prime Minister's Science, Engineering and Innovation Council has identified significant challenges to Australia's food security, despite the country's current ability to produce enough food to feed three times its current population (PMSEIC 2010). As a result, strategic policies and initiatives to ensure food security are presently given a high priority on the national agenda.

3.1 The conceptual framework of food security

Food security has been officially recognised as a global issue since the 1996 World Food Summit, where it was defined as a situation that 'exists when all people, at all times, have physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life' (FAO 1996). Although variations in defining food security exist across institutions and countries, this definition by the Food and Agricultural Organization of the United Nations has been cited by policy-makers, scholars and researchers worldwide. Emphasising similar elements of food supply and access, a widely cited definition in the Australian context is that 'food security refers to the ability of individuals, households and communities to acquire food that is sufficient, reliable, nutritious, safe, acceptable and sustainable' (Rychetnik et al. 2003). The Victorian Health Promotion Foundation defines food security as 'the state in which all persons obtain nutritionally adequate, culturally acceptable, safe food regularly through local non-emergency sources' (VicHealth 2005).

Definitions of food security in general acknowledge its inherent requirement that everyone in the society has adequate means, physically and financially, to obtain healthy good-quality food on a sustainable basis. While the idea of sustainability includes concerns such as the sustainability of food production and distribution systems, it also relates to the reliability of access for an individual or household. 'Food equity' is a concept that is expanding beyond its origins in international development to encompass developed countries, with a society being considered truly food secure only when all members of that society, including vulnerable and low-income groups, are food secure. There are social and cultural dimensions encapsulated in the definitions of food security, which dictate that culturally acceptable foods are acquired without compromising people's dignity, self-respect or human rights (PMSEIC 2010). Accordingly, food security cannot be achieved when individuals have to seek emergency food relief or must obtain food using methods usually considered socially unacceptable such as scavenging (Davis 2010).

Food insecurity is often defined as the other extreme of food security. According to Campbell (1991), food insecurity is identified when the availability of nutritionally adequate, safe foods is limited or the ability to acquire personally acceptable foods in socially acceptable ways is uncertain. In a more detailed explanation, Burns, Jones and Frongillo (2010) itemised food insecurity into three circumstances: uncertainty about future food availability and access; insufficiency in the amount and kind of food required for a healthy lifestyle; and the need to use socially unacceptable ways to acquire food.

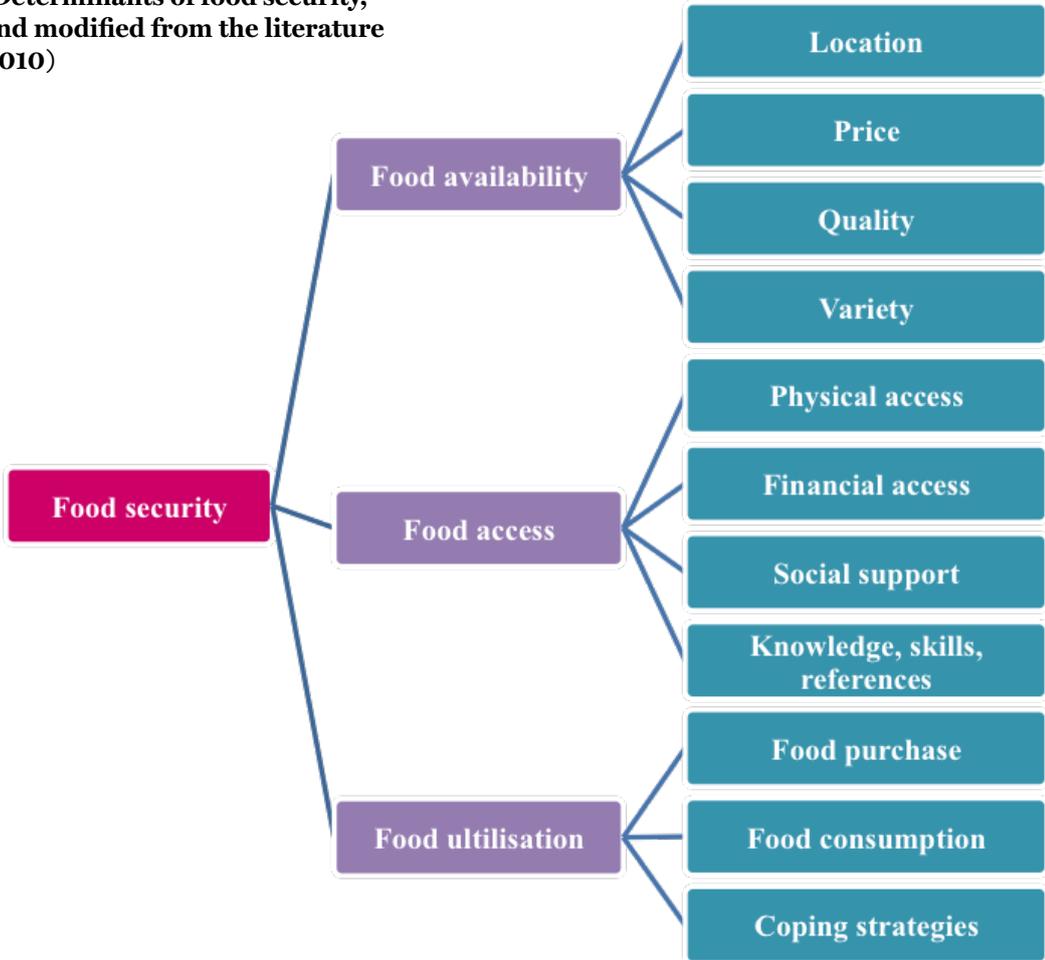
While the identification of determinants for food security varies, it is most commonly conceptualised as dependent on three core interrelated pillars. These are food availability, food access and food utilisation (Barrett 2010). A summary of these determinants is set out in Figure 1.

Food availability refers to the range of nutritious foods such as fresh fruits and vegetables which are sold or served at local food outlets (Azuma et al. 2010). Figure 1 indicates

that food availability, as a supply determinant of food security, is seen in the locations of retail food outlets as well as the price, quality and variety of foods available there. Food availability is often measured using spatial mapping of local food outlets, and by food-basket surveys. Availability is essential to a healthy food environment, which has been proven to be a strong indicator of healthy eating (Bodor et al. 2008; Carlson & Gerrior 2006). Limited availability, with its consequent higher prices, is suggested to negatively affect people’s intake of healthy foods (Bodor et al. 2008). Adequate food availability is a precondition for healthy eating, but availability alone is not enough to ensure food security because a healthy food environment does not automatically lead to universal access.

Food access refers to the extent to which individuals are physically and economically able to obtain nutritious foods (Apparicio et al. 2007b). Representing the consumer determinant of food security, access is determined by physical resources (including transport, time and mobility, or food-related

Figure 1: Determinants of food security, adapted and modified from the literature (Barrett 2010)



facilities), financial resources, social support and the skills and knowledge to make appropriate choices. The two concepts of *food affordability* (the ability to pay for healthy nutritious food) and *food awareness* (the knowledge and skills needed for food preparation and cooking) are also encapsulated in food access. According to Barrett (2010), food access underscores problems in responding to adverse socio-economic circumstances such as unemployment or price spikes, indicating a close relationship between food security and poverty or other socio-economic issues. This multi-factored concept of food access is more difficult to measure than food availability.

Food availability and food access then interact to influence *food utilisation*, which is defined as the appropriate use of food based on knowledge of basic nutrition and care (Burns et al. 2004). Food utilisation includes food purchase, food consumption and coping strategies in times of food shortages. Food utilisation can be measured through methods such as a household food intake survey.

As a whole, the socially-constructed determinants and sub-determinants of food security reflect its intrinsic complexity and multi-dimensionality. A conceptual understanding of all these determinants is important in planning the most effective interventions to improve food security for individuals, groups and communities.

This conceptual structure of food security is used in this study as the theoretical background for the data analysis and data interpretation.

3.2 The role of food security

Food security is closely interconnected with other important socio-economic issues. For example, there is a strong link between food security, health risk factors and neighbourhood socio-economic characteristics, such as educational attainment, unemployment rates and income (Bertrand et al. 2008; Friel & Baker 2009; Misselhorn 2009b). Food security has an impact on physical and mental health, family relationships and people's psychological wellbeing.

Food security has always been a key concern for public health nutrition in relation to the capacity of individuals, families and communities to secure a diet consistent with dietary guidelines and recommendations (Queensland Health 2000). Consuming a wide variety of healthy foods on a regular basis is

essential to meet the nutritional requirements for an active life (NHMRC 2003). A nutritious diet is also a significant preventative measure against chronic illnesses such as cardiovascular disease, cancer, diabetes, osteoporosis and dental disease (Strategic Inter-Governmental Nutrition Alliance (SIGNAL), 2000) and inadequate consumption of the appropriate amount and variety of healthy food places individuals at risk of poor physical and mental health (VicHealth 2007). According to Burns, Jones and Frongillo (2010), food insecurity is related to poor physical and mental health, social development and academic performance, including higher prevalence of inadequate intake of key nutrients, depressive symptoms and suicide risk in adolescents, and poor learning and behaviour problems in children. Other health problems related to food insecurity include overweight and obesity (Burns et al. 2004) and micronutrient deficiencies and malnutrition (Gorton et al. 2009). Recently low fruit and vegetable intake has been assessed by the World Health Organization as being among the top ten risk factors related to mortality (WHO Commission on Social Determinants of Health 2007). In Australia, 9% of the burden of disease is attributed to poor diet and the estimated annual cost of diet-related diseases is \$60 billion (Begg et al. 2007).

Food security or insecurity within households has been found to have significant effects on the family. In the face of persistent inadequate food, familial issues emerge, including the modification of eating patterns and related ritual (e.g. incomplete or unbalanced meals), disrupted household dynamics (e.g. tense parent-child relationships) and distorted means of food acquisition and management (e.g. relying on others or credit to eat, selling personal belongings or even stealing) (Hamelin et al. 1999). As Hamelin, Habicht and Beaudry (1999) stated, these familial diet-related consequences can be expected to create long-term detrimental effects.

A prolonged lack of access to adequate food is associated with the feelings of restricted choice or deprivation, and anxiety about the amount and types of food accessible to the household (Campbell 1991). Another psychological manifestation related to food insecurity is individual stress (Hamelin et al. 1999). This stress is frequently manifested in loss of interest in food and nourishment. All of these psychological problems have the potential to exacerbate social exclusion, already an issue especially among those who are socially and economically deprived.

3.3 Contextual issues of food security

Australia as a whole can be considered a highly food-secure nation (Rychetnik et al. 2003). Unfortunately, this does not hold true for every individual, household and community. This is the paradox of people going hungry in a society with enormous quantities of food.

There has been convincing evidence over the last decade that many Australians struggle to feed themselves adequately (McCluskey 2009; VicHealth 2007), facing physical and financial constraints for daily access to nutritious foods. According to findings from the Victorian Population Health Survey, for example, in 2006, 3.6% of two-parent families and 20.6% of one-parent families had in the previous year run out of food and had no money to buy more (DHS 2007). As observed by Burns (2004), some groups such as unemployed people, single-parent households, low-income earners, rental households and young people are more vulnerable to food insecurity than others. Low-income households and those in remote areas, for instance, are less likely to consume the recommended intake of fruit and vegetables per day (AIHW 2010, p.243; Second Bite 2011). Geographic factors also play a part. A project by Ball, Timperio and Crawford (2009) across 45 neighbourhoods of varying socio-economic disadvantage in Melbourne showed that geographical accessibility of healthy food stores was mostly better and availability of healthy foods within stores was slightly better in the more advantaged neighbourhoods.

It seems that differential access to healthy foods between socio-economically advantaged and disadvantaged groups has led to inequality in diet or healthy food intake. These inequalities can partially explain the paradoxical presence of food insecurity in an otherwise food-secure nation.

In Tasmania, due to a higher level of socio-economic disadvantage compared to other states, food insecurity is likely to be experienced by a proportionately higher number of people. For example, the cost of food has been found to be a perpetual major concern for some families in Tasmania (Flanagan 2010), causing financial crisis, for instance, for about 27% of the respondents in a survey of clients of emergency relief and financial counselling services (Madden 2004).

Especially in the more remote suburbs, a range of exclusionary factors including low income, poor access to transport, the high

cost of essentials and high levels of illness and disability have undermined people's ability to get affordable, nutritious food. Declining and rapidly aging populations coupled with economic decline have made food access a formidable challenge for these geographically disadvantaged residents.

The consequent health outcomes are manifested in the significant burden of diet-related chronic diseases in Australia. According to the Tasmanian Government (2004), Tasmania has rates of heart disease, obesity, diabetes, hypertension and some cancers as high as, and in some instances higher than, other Australian states. Food security has been cited as one of the cornerstones of the Social Inclusion Strategy for Tasmania (Adams 2009).

Within this context, assessing and monitoring both food availability and access need to be high priorities in any workable solutions towards improved food security, locally and nationally.

3.3.1 Evidence of socio-economic disparity in food security

Research efforts at different levels have been made to examine food security in Australia. Some are university-based projects whose findings can contribute to the understanding of local food supply and access, and can be used to inform local decision-making. More substantial projects, usually in the form of community food assessments, have tended to be funded by state or national governments. Some are carried out periodically as an ongoing effort to uncover trends and changes over time.

Healthy Food Basket (HFB) surveys have provided useful data on changes in food availability and affordability. HFB surveys monitor a list of food items chosen to represent commonly available and popular food choices which meet required levels of nutrients and energy for individuals and families.

The Queensland Healthy Food Access Basket survey (HFAB) has been routinely administered every two years to monitor the costs and availability of basic and healthy food items throughout Queensland. The most noticeable and consistent finding over the years is that the overall cost of the HFAB is regularly about 30% higher in remote and rural areas than in major cities (Queensland Health 2000, 2006). In addition, about 10% of the HFAB food items may not be available for purchase in remote and very remote areas (Queensland Health 2000). All of these findings underscore the disparity in food availability and access, which potentially

leads to inequity in health status between metropolitan areas and areas of varying remoteness across Queensland (Queensland Health 2000).

Similar results have also been reported in Victoria. The Outer East Community Food Access Research Project in Victoria used four different tools to assess food security, including physical mapping of local food outlets, the Victorian Healthy Food Basket (VHFB) survey, community surveys and community consultation and focus groups. The findings showed that areas of lower social economic status were more vulnerable to high levels of food insecurity (OEHCSA 2009). In another project investigating food security in the City of Moreland between 2007 and 2008, McCluskey (2009) reported that spatial analysis of retail outlet data revealed that few residents were within 400m of a fresh fruit and vegetable outlet. The VHFB showed price variances across Moreland, with some areas 25% above the average cost, and the Household Food Security Survey indicated food scarcity among almost 50% of the respondents.

In New South Wales, the Illawarra Healthy Food Basket (IHFB) survey has been developed and implemented since 2000 to monitor the affordability of healthy food against average weekly wages and income support payments. In the ten-year period from 2000 to 2009, the basket costs increased by 38.4%, but affordability remained relatively constant at around 30% of average household incomes (Williams 2010). The 1999 NSW Older People's Health Survey indicated a proportion of older people (e.g. 3.5% in Central Sydney and 3% in Western Sydney) experiencing food insecurity due to financial barriers. However, the total level of food insecurity was likely to be much higher because older people could encounter many other barriers to accessing healthy foods (NSW Health 2000). Among the younger population, the 2001 NSW Child Health Survey revealed that 6.2% of the parent respondents had run out of food in the previous 12 months and could not afford to buy more, leaving children with unbalanced meals in almost half of those households. Another notable finding was that parents from low-income areas were three times more likely to experience such food scarcity than parents from other areas (NSW Health 2002).

Discrepancies in healthy food availability and access have also been confirmed in South Australia, Western Australia and the Northern Territory. The 2000 Food Supply in Rural South Australia study showed evidence of

higher prices and fewer varieties of foods for people living outside Adelaide and other large regional centres (Meedeniya et al. 2000). In Western Australia, the Food Access and Costs Survey (FACS), developed by the Department of Health, the ABS and Curtin University, indicated that food prices, food access and food quality were closely related to geographic location, in favour of socio-economically advantaged areas. Importantly, healthier foods were found to exhibit the greatest difference, with fruit, vegetables and dairy standing at 32%, 26% and 40% respectively higher in remote areas (DOH (WA) 2010). In the Northern Territory, the Market Basket survey has been conducted annually throughout the territory. In 2008, the cost of the food basket in remote stores was found to be 23% more expensive than in Darwin supermarkets, and 19% more expensive than Darwin corner stores. In terms of food availability, about 7% of the items in the food basket were not available in the remote stores surveyed (Northern Territory Government 2008).

In Tasmania, research evidence consistently reflects the national trends. In the 1998 Tasmanian Healthy Communities Survey, for example, 10% of adult respondents were reported to worry frequently about whether the food that they could afford to buy for their households would be enough (Tasmanian Government 2004). In a Community Survey undertaken by Anglicare (Madden & Law 2005), 3800 Tasmanian adults were randomly selected from the Tasmanian Electoral Roll. The key findings indicated food scarcity among 5% of all Tasmanians, who reported to mostly or always worry about whether the amount of food they could afford would be enough for their households; 19% reported to occasionally worry about their ability to afford adequate food and 4% reported going without meals at some time in the past year due to a shortage of money.

Other research projects that involve particular groups of the Tasmanian population have also been conducted. A report by Madden (2003) on the casualisation of work in Tasmania revealed patterns of food shortage among people who were underemployed. In another study of clients of emergency relief and financial counselling services around Tasmania in 2003, Madden (2004) found that 59% of the respondents had gone without meals in the past year due to financial hardship and that 70% of respondents always or almost always worried about whether the amount of food they could buy for their household would be enough. The most vulnerable groups were found to be people living with disability, single parents and

unemployed people. This finding was supported in the results of a project involving people living with a mental illness by Cameron and Flanagan (2004), who found that the majority of participants reported regularly going without food, running out of food and relying heavily on emergency relief outlets for food. Similarly, Hinton (2006) found some manifestations of food insecurity, particularly in disability-related expenses with food, widespread food rationing, and a strong dependence on emergency relief among working-age people with disability in Tasmania. Other highly vulnerable groups such as single-parent families and refugees were also reported to experience food insecurity associated with anxiety about food costs or difficulties in finding culturally appropriate food (Flanagan, J 2007; Flanagan, K 2010).

3.3.2 Current attempts to improve food security

Over the years, Australian policies have seen many additions and alterations reflecting government determination to improve food security nationwide.

The development of the 1992 National Food and Nutrition Policy can be considered a starting point, with its primary goal being 'to establish an ongoing program of food and nutrition monitoring and surveillance in Australia' (Lester 1994, p. vii). The policy has promoted practical actions through the entire food and nutrition system including food production, processing and distribution, nutrition, knowledge and education. A number of projects under this policy have also been conducted, such as the Point-of-Purchase Nutrition Promotion Project, the National Nutrition Education in Schools Project, the Dietary Guidelines Resource Kit and the Nutrition for Older People Project (DHHS 1998). In 2001, the national public health nutrition strategy *Eat Well Australia 2000–2010* and the National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan 2000–2010 were endorsed by Australian Health Ministers (SIGNAL 2001). *Eat Well Australia* adopts a holistic approach to improving nutrition, especially through the establishment of partnerships across the entire food system. Promoting healthy weight, increasing vegetable and fruit consumption, improving maternal and child health and addressing the nutritional needs of vulnerable groups are the pivotal health initiatives identified by *Eat Well Australia* (SIGNAL 2001). On a sub-national scale, FoodNorth run by the North Australian Nutrition Group, Food Alliance by VicHealth and the Sydney Food Fairness Alliance are

some of the regional organisations aimed at addressing food security through improved availability and access to healthy foods.

One practical intervention program which has brought about changes to the healthy food intake of many people is SecondBite. This is a not-for-profit food rescue organisation, whose mission is to identify sources of nutritious surplus fresh food that may otherwise go to waste and distribute this to people in need through community food programs (Second Bite 2011). In 2010 SecondBite gathered and redistributed 880 tonnes of fresh nutritious food nationally, including more than 6 million serves of fruits and vegetables. There are other organisations and groups that have undertaken food rescue and redistribution activities throughout Australia in recent years.

In Tasmania, efforts to enhance food security are evident through policies and coordinated action at a number of levels. The adoption and monitoring of the Tasmanian Food and Nutrition Policy (TFNP) since 1994 (Tasmanian Government 2009) has shown the determination of the State Government to address local food and nutrition initiatives. With a view to ensuring food security for all Tasmanians, the Tasmanian Food and Nutrition Policy 2004 identified four strategic courses of action: to increase awareness of the factors that influence food security; to reduce social, cultural and economic barriers to food security; to reduce geographical and physical barriers to food security; and to ensure that the nutritional needs of Tasmanians with special nutritional requirements are met (Tasmanian Government 2004). In 2012 the Tasmanian Food Security Council issued *Food for all Tasmanians: a food security strategy* (TFSC 2012b), which emphasises the need to ensure food security for Tasmanians most at risk (especially people on low incomes, children, older people and people in isolated places) through community approaches. The four priorities to address food insecurity covered in the Strategy are increasing food access and affordability; building community food solutions; regional development and supporting food-focused social enterprises; and planning for local food systems.

Since the implementation of the Tasmanian Food and Nutrition Policy, there has been a growth in community programs and partnerships focusing on local food production, nutrition education and socialisation. Initiatives such as school breakfast programs, community gardens and community kitchens have been funded by the Tasmanian Food Security Council,

the Tasmanian Association of Community Houses and DHHS through Population Health (Tasmanian Government 2009). Some other successful programs are Eat Well Tasmania, Healthy Options Tasmania (an award accreditation program for food businesses), Taste Buds (a training program to improve the food offered to children in childcare), Cool Cap (an accreditation program to improve the foods sold in school canteens), Eating with Friends (a program aiming to bring isolated individuals together for a healthy meal) and Family Food Patch (a peer education program to improve family nutrition). Ongoing support programs include the provision of emergency relief by organisations such as the Salvation Army, St Vincent de Paul, the City Missions, Anglicare and other church groups.

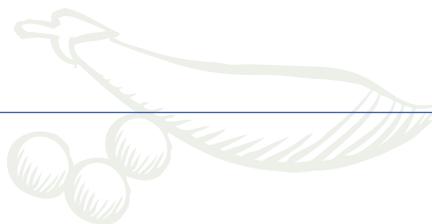
3.3.3 More action needed

While substantial efforts have been made to address the issue of food security nationwide, more attention, time and energy are required to bring about marked improvement. Tasmania, with around one-third of its population

depending on a government benefit as their main source of income, is facing formidable challenges in ensuring food security for all of its residents (Tasmanian Government 2009), especially with cost of living pressures such as rising unemployment and food prices. Difficulty in establishing the extent of the problem or monitoring trends over time has been identified as a major obstacle to effective investment and improved food security (Seal 2010). Without proper understanding of the scope and nature, as well as the depth and breadth, of this issue, practical solutions to food insecurity for certain groups of the population will remain elusive.

Against this background, the TFARC project was conducted with a view to building a more evidence-based understanding of the issue of food security in Tasmania, which could also be of value to other communities with similar contexts. Findings and outcomes of this project are expected to fill in the current knowledge gap in the field and present a solid scientific grounding for decision-making, immediately in areas of food and health and ultimately in the wider context of national development.

4 Methodology



4.1 Research design

The primary nature of this research project was exploratory and descriptive. In order to obtain a comprehensive description of current food security in the two municipalities of Dorset and Clarence, the use of combined data collection methods was considered to be the most appropriate. As suggested by the mixed methods methodologist Driscoll (2007), gathering quantitative and qualitative data would capture not only the breadth but also the depth of the issue under study. Therefore, a mixed methods approach was employed in this research project, including both quantitative and qualitative data collection methods.

4.1.1 Quantitative approach

Three different survey tools were developed for the quantitative data collection phase of this project – the Tasmanian Household Food

Security (THFS) survey, the Tasmanian Healthy Food Basket (THFB) survey, and a community food resource database called the Tasmanian Food Outlet Audit Tool (TFOAT). More details of the development and design of these survey tools are provided in Section 4.4 (Research Tools).

All quantitative data from these tools were coded and entered into Statistical Packages for Social Science (SPSS) and Stata software and checked for data integrity. Both descriptive and inferential statistics were performed to analyse the data in terms of distribution and statistical relationship. The findings were interpreted in terms of the three key aspects of food security – food availability, food access and food utilisation.

4.1.2 Spatial modelling approach

The project assessed the physical access to food outlets using spatial mapping techniques. The

data collection process included the collection of information on food outlet locations. The data were collected by research team members and community food researchers employed for the project.

Food outlet locations were integrated within a geographic information system (GIS) by geocoding addresses (this project used ArcGIS 9.3). The data were used to assess the physical accessibility of food outlets to identify areas with better physical access to food and those where food is more difficult to obtain.

There are a number of different measures of accessibility in this mapping model. The following measures were used in this study.

4.1.2.1 ANALYSIS OF NEIGHBOURHOOD SOCIO-ECONOMIC STATUS

There is a strong link between health risk factors, food security and neighbourhood socio-economic characteristics (Bertrand et al. 2008; Friel & Baker 2009; Misselhorn 2009a). To test the hypothesis regarding neighbourhood socio-economic status and food outlet accessibility, we used Socio-Economic Indexes for Areas (SEIFA) (ABS 2006c) to highlight neighbourhoods with multiple indicators of socio-economic characteristics such as high unemployment rates and the incidence of low income (the proportion of households that fall below the low-income cut-off according to ABS data). SEIFA was developed by the ABS especially for use in the assessment of the welfare of Australian communities. It comprises four indexes to allow ranking of regions/areas, providing a method of determining the level of social and economic wellbeing in each region. Each of the four indexes summarises different aspects of the socio-economic conditions of people living in an area; each is based upon a different set of social and economic information from the 2006 Census. The indexes provide more general measures of socio-economic status than is given by measuring, for example, income or unemployment alone. The four indices are the Index of Relative Socio-economic Disadvantage (IRSD), the Index of Relative Socio-economic Advantage and Disadvantage (IRSAD), the Index of Education and Occupation (IEO), and the Index of Economic Resources (IER). These measure relative disadvantage at an area level to assess people's access to material and social resources, as well as their access to social participation (ABS 2006c). This project used the IRSD to identify areas which have high incidence of disadvantage. The IRSD values are grouped into five quintiles, with quintile 1

(deciles 1 and 2) being the most disadvantaged and quintile 5 (deciles 9 and 10) being the least disadvantaged (ABS 2006c).

4.1.2.2 MEASURING FOOD OUTLET ACCESSIBILITY

Whether food outlets were accessible to people was measured in terms of walkability and travel distance. In the research literature, food outlet accessibility is measured in relation to low-cost modes of transport: walking and public transport. According to Clifton (2004), people living in poor neighbourhoods in the United States often drive to get groceries, whereas in some Canadian cities many people, particularly those who were living in lower-income neighbourhoods, must walk or use public transport to obtain groceries (Lucian 2005). This project used GIS-based techniques to determine the accessibility of food outlets which people in the area can reach on foot. Although public transport is typically an option for disadvantaged populations to reach destinations beyond walking distance, this is not the case for some areas in Clarence and virtually all areas of Dorset, which are not well serviced by public transport. Therefore the food outlet accessibility in this study was measured in terms of walkability only.

Accessibility by foot was assessed by a defined distance from origin (e.g. home). In food security research in the UK, a walking distance of 500 metres has been commonly used to assess accessibility (Donkin et al. 2000; Furey et al. 2001; Wrigley 2002). A Canadian study used a distance of 1000 metres (Apparicio et al. 2007a) and more recently, in a study conducted in Melbourne, a distance of 400 metres was chosen to reflect a convenient walking distance to shops and food outlets (McCluskey 2009). The TFARC project used 400 metres as its definition of accessibility by foot. This distance was chosen because of Tasmania's ageing population, high level of disability, hilly terrain and the presumption that pedestrians will be carrying loads of groceries.

A radius of 400 metres and of 1000 metres around each food outlet (or group of outlets/shops) was created using layers of transport data over the Dorset and Clarence areas. Four hundred metres provides an approximate estimation of convenient walking distance. Areas outside 400 metres are considered to be beyond easy walking distance, and areas beyond 1000 metres can be characterised as 'food deserts' (Larson & Gilliland 2008). The Analysis Proximity Tool (available in ArcGIS 9.3) was used to create these areas on maps of the municipalities.

4.1.2.3 THE NUMBER OF FOOD OUTLETS WITHIN A WALKABLE DISTANCE

This project mapped the food outlets to determine how many food outlets residents had access to by foot. The number of food outlets within a walkable distance of 400 metres was used to evaluate the diversity of food outlets within ready access of residential areas. Neighbourhood Point Statistics (available in ArcGIS 9.3) were used to create these maps.

4.1.2.4 DISTANCE TO CLOSEST FOOD OUTLET

The distance to the closest food outlet was computed, using the street network file and the Network Analyst extension within ArcGIS 9.3, to determine the minimum distance residents must walk to the closest food outlet (proximity). This data was then aggregated to each suburb for further analysis and to allow comparison with socio-economic characteristics of neighbourhoods.

4.1.2.5 TRAVEL DISTANCE TO HEALTHY FOOD OUTLETS

As one of the main aims of the project was to measure access to nutritious and healthy foods, the Network Analyst Tool (available in ArcGIS 9.3) was used to calculate the travel distance by road to food outlets that were offering 90% or more of the items included in the Tasmanian Healthy Food Basket (see section 4.4.2). In the analysis, all possible routes were allowed as well as u-turns as pedestrians can use walkways, private roads, etc. while travel by car is only possible on public roads.

These measures of accessibility enabled us to map which residential areas had ready physical access to food outlets, and the minimum distance they must walk to their nearest healthy food outlet.

4.1.3 Qualitative and participatory approach

A qualitative methodology was used in this research project to complement the quantitative analysis and gain an understanding of what food security means to the people living in the communities being studied. It also provided the means to adopt a participatory process. This shed light on the issues and problems relating to food access, availability, affordability and awareness in the two municipalities. It provided an opportunity to highlight from the community

perspective the complexity associated with the social determinants of food security and encourage an environment in which individuals and communities are active partners in their health and wellbeing and contribute to local solutions.

A community development approach was used in this research to form a participatory process of interaction between the community and research investigators. This participatory process is one in which community members play an active role, bringing to the table community issues which can be addressed through locally driven solutions. This engagement process is essential to improve the communities' abilities to collectively make decisions about the use of their resources, contributing to enhance the social, economic and environmental situation within their community (Cavaye 2007).

The membership of the Tasmanian Food Access Research Coalition facilitated the implementation of a participatory approach as member organisations had well established community networks within both study areas. These networks provided opportunities for the implementation of a community development approach and ensured good participation in the data collection process.

Where possible, community members residing in the study areas were provided with training in data collection techniques such as running focus groups and interview processes. Where this was not possible members of the coalition undertook the data collection or recruited and trained personnel to collect data.

Another strand of the research design comprised the Tasmanian Centre for Global Learning working with students at a school in Clarence developing food-related activities and research within their school and local community. A full report of this aspect of the Tasmanian Food Access Research Coalition project is included in *Appendix 12*.

4.2 Study locations

Two local government areas were selected for the Tasmanian Food Access Research project, one described as urban, peri urban (or urban fringe) and rural, and one classified as rural and remote, in order to test the proposed model across two conditions common to Tasmania. Clarence in the South and Dorset in the North-East were selected as the two municipalities. *Appendix 11* provides

information about the socio-economic status and the assessed remoteness of areas within the two municipalities.

4.2.1 Clarence City

Geographically, Clarence is one of the largest cities in Australia, covering 386 square km. According to the 2006 Census it had a population of 50,808 people, which is 10.4% of Tasmania's population. It is the second most populated city in Tasmania after Launceston. Clarence is experiencing modest population growth (5% in the period 1997-2006) (DHHS 2009a) with much of the expansion concentrated on new developments, particularly in the Clarence Plains area. Some communities on the outskirts of Clarence have relatively low access to appropriate supporting infrastructure.

The median age of the population is 40.1 years, higher than the measure of 39.9 years for Tasmania as a whole.

The Clarence local government area comprises 33 suburbs or townships with significant disparities in terms of income per household, educational background, age and health status. Cambridge, Acton, Sandford, Clifton Beach, Tranmere, Otago and Rose Bay are all relatively advantaged communities with SEIFA scores which place them among the most advantaged communities in Tasmania and Australia. In comparison, Clarendon Vale, Rokeby, Risdon Vale and Warrane have IRSD scores in the lowest decile nationally, indicating that they are among the most disadvantaged communities in Australia. These latter suburbs have greater concentrations of public housing, have low average incomes, poor access to transport, and high levels of illness and disability (ABS 2006c). These exclusionary factors all impact on the ability of people to obtain affordable nutritious food.

While there are obvious challenges in Clarence to ensure that all residents are food secure, there are also strong community networks. There are four Neighbourhood Centres in the municipality which provide a range of positive programs and activities for the benefit of the community. These and other organisations, including government departments and informal networks, provide a range of food-related initiatives including community gardens, food cooperatives, breakfast clubs and school focused activities such as gardens and cooking.

4.2.2 Dorset

Dorset was chosen as the rural/remote region in which to develop and trial the model. Rural and remote regions within Tasmania face a range of health concerns different from their urban counterparts. Declining and rapidly ageing populations coupled with economic decline and remoteness can make accessing health information and health promotion services a challenge. Dorset has a population of 7,253 people spread over 40 townships and population centres and covers 3,196 square km with a population density of 2.3 people per square kilometre. Dorset experienced a population decline of 1.6% in the period 2002-2007 (DHHS 2009b) and is characterised by a rapidly ageing population. Dorset is experiencing social and economic challenges associated with the loss of industries and infrastructure such as Simplot and forestry activities and in recent years farmers have also been affected by drought followed by flooding in agricultural areas.

Accessing services can be difficult: 96% of Dorset's population is classified as living in Outer Regional Australia and 4% is classified as living in Remote Australia. The Tasmanian

Figure 2: Location of Clarence City and Dorset LGAs

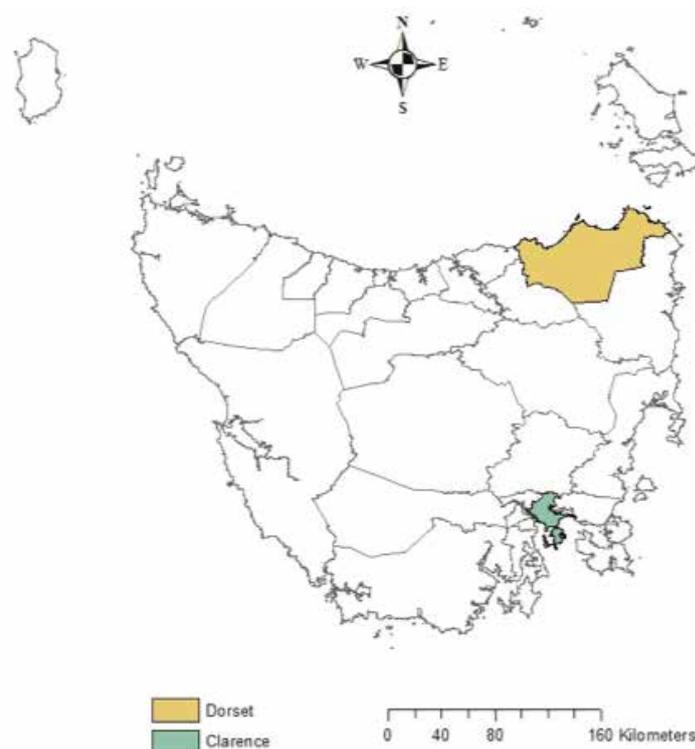


Figure 3: Map of the City of Clarence

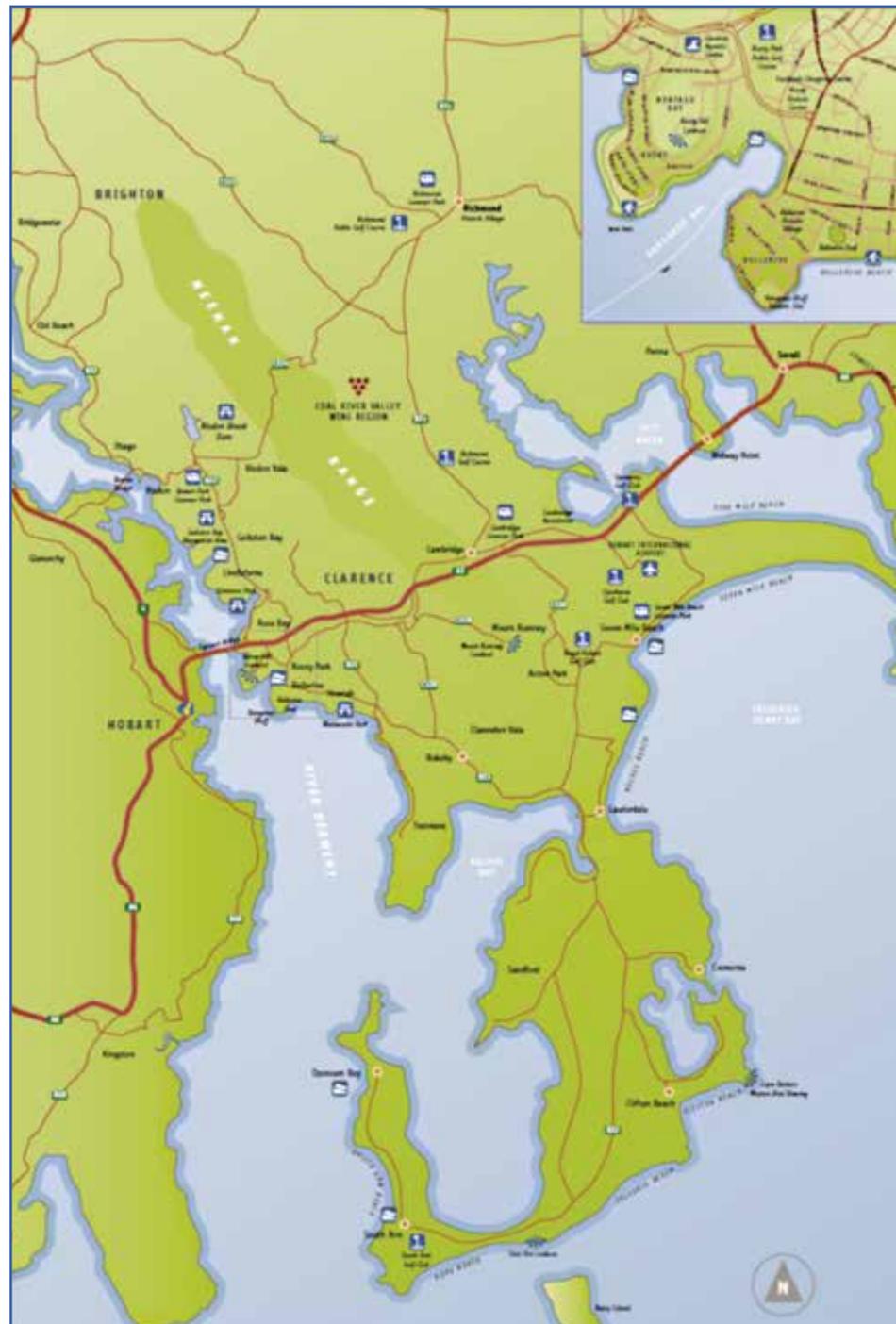
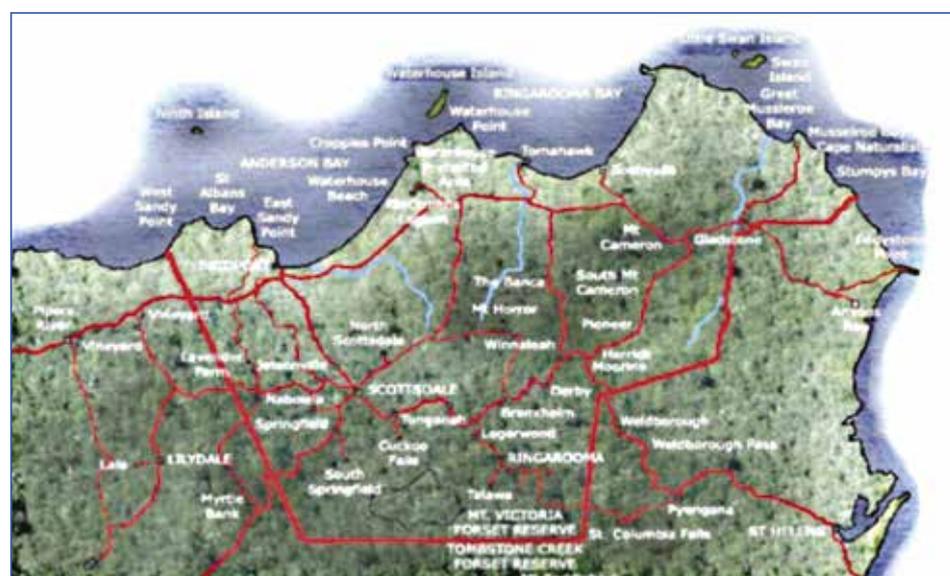


Figure 4: Map of Dorset municipality



Department of Health and Human Services (DHHS) community profile notes that 'the ABS remoteness categories do not capture the distance that some of the population needs to travel to access services' (cited in DHHS 2009b). Dorset has a high level of relative socio-economic disadvantage compared to other regional areas and state levels, particularly in the areas of education and occupation, two of the most powerful determinants of health.

4.3 Participants/Sample

4.3.1 Survey participants

4.3.1.1 CLARENCE

In Clarence, the Household Food Security Survey was conducted using two approaches.

A telephone survey of 300 randomly selected households throughout Clarence was conducted by a social research consultancy. The survey was undertaken in early December 2011.

The written version of the survey was distributed through a range of methods, in hard copy and in electronic form (see section 4.5.1.2) over the period September to December 2011. A further 169 surveys from Clarence were returned in written or electronic form. The final survey response for Clarence was 469 surveys.

4.3.2.2 DORSET

In Dorset a proportional sampling of dwellings throughout the municipality received the Tasmanian Household Food Security Survey. Surveys (571) were randomly distributed using stratified sampling with an expected survey response of 400. This distribution was repeated twice to obtain the required response. The final survey response for Dorset was 376 (response rate 66%).

4.3.2 Interview/focus group/ community forum participants

Community focus groups were chosen to explore issues around food security. Consistent with the intentions of qualitative research, the number of participants in the community forums along with the data gathered are not regarded as representative of the total population but as an in-depth account of the study sample.

4.3.2.1 CLARENCE

Focus groups or interviews were conducted in eight locations in Clarence. Council community development staff advised that localised and targeted forums rather than broad scale public meetings would be a good way to ensure community involvement and participation. The chosen strategy aimed to build on existing community networks in order to meet with a range of people from different areas, age groups and interests. Further, to facilitate local engagement community food researchers were recruited to undertake the research in Clarence. An emphasis was placed on recruiting people who lived in the communities under study. Position descriptions and recruitment techniques were developed in partnership with Neighbourhood House staff and volunteers. Four community food researchers were appointed. The recruitment process prioritised those people who lived in the local communities and who had some experience in community food initiatives, food justice groups, food service or provision, or in working in community health settings.

The community food researchers, supported by Anglicare research staff, conducted the focus groups in Clarence. Meetings were held with groups and individuals from a broad cross section of the Clarence community, including in Clarendon Vale, Howrah, Lauderdale, Richmond, Risdon Vale, Rokeby, South Arm Peninsula and Warrane. Contact was made through Neighbourhood Houses, Residents' Associations, schools, church groups and other community organisations. Meeting times were usually set to coincide with already organised activities when community members would already be together. The sessions were held from October to December 2011.

One Clarence community group delegated a representative to speak on their behalf about issues of food access affecting their area. A one-on-one interview with this key informant was held. The data from this interview has been included in the general findings from all focus groups held in Clarence.

Forty-two people were consulted ranging in age from late teens to over 80. A wide spectrum of socio-economic backgrounds was represented in terms of income, housing status, family status and level of social participation. However, the majority of participants (86%) in the discussions were women.

Discussions were informal, drawing on the list of questions developed (see *Appendix 8*).

4.3.3.2 DORSET

Community forums and focus groups have been used within the Dorset municipality over the last several years and have proven to be a successful method for engaging with the community.

The community forums were open to all residents of Dorset. Advertising of the community forums occurred through all forms of media with participants registering their interest in attending. Registration was sought to ensure that size of venue was appropriate and to assist with catering requirements.

The participants were a mix of age, gender and social background with work experience in agriculture and the business sector.

Focus groups were scheduled to be held in the Dorset municipality in Bridport, Scottsdale, Ringarooma, Winnaleah and Gladstone in September and October 2011. These towns are spread throughout the municipality and draw the populations from the smaller regional areas enabling widespread participation throughout the municipality. The focus groups were advertised using local media, service clubs and school newsletters. The advertisements included the location, date and time with contact names and phone numbers for enquiries and RSVP. There was no response from Gladstone and therefore this session was cancelled. Each session was held in the evening at the local hotel with supper provided.

The total number of participants was 45, 16 male and 29 female, ranging in age from 21 to 98, with the average age being 57.

4.4 Research tools

4.4.1 Tasmanian Household Food Security Survey (THFSS)

4.4.1.1 DEVELOPMENT OF THE TASMANIAN HOUSEHOLD FOOD SECURITY SURVEY (THFSS)

In Australia there is no national survey to monitor individual household food security. Out of necessity most Australian states and territories have developed separate surveys using a variety of data sources including ABS and state and territory specific surveys. In order to develop a Tasmanian survey tool, four separate search strategies were employed.

- 1 A review of published literature which included the ABS National Health Survey (ABS 1995a), ABS National Nutrition Survey (ABS 1995b), the Tasmanian Child Health and Well-Being Survey (DHHS 2009d) and the Tasmanian Community Survey (Madden & Law 2005). The Flinders South Australia (SA) Home Food Inventory Survey (Flinders University 2010), Merri Community Health Services (McCluskey 2009), Outer East Community Food Assess Research Project (OEHCSA 2009), Queensland University of Technology (QUT) Food Shopping and Your Family (Turrell et al. 2003), DHHS Food Security Tasmania (DHHS 2009c) and United States (U.S.) AID Household Food Insecurity Access Scale (HFIAS) for Measurement of Food Access (Coates et al. 2007) were also reviewed;
- 2 A search of reference lists contained within the literature reviewed on the topic;
- 3 Conversations with key stakeholders; and
- 4 Consultation with an expert reference panel consisting of Tasmanian and interstate experts in the field of public health and nutrition.

The search parameters were specific for food access, availability, affordability and awareness, suitable to Australian peri-urban and rural settings and where possible to comply with ABS demographics, enabling comparisons to be drawn to measure the extent of the problem.

These studies were similar in methodology with most using mixed methods of data collection and analysis. Saturation was quickly reached with the majority of articles and questions focusing on affordability and accessibility. The most significant difference was the content of the questions, with some seeking general information on food intake and availability (ABS 1995b). Others were very detailed about dietary behaviours, for example asking 'what is the fat content of the milk you consume?' (ABS 1995a). Other surveys were designed to distinguish people who were food secure from those who were food insecure (Coates et al. 2007).

A self-administered questionnaire was developed and piloted with 100 people. The responses identified the need to make minor changes, with the final survey consisting of 44 closed and open-ended questions in which food availability, affordability, awareness (knowledge) and accessibility were covered. A copy of the Tasmanian Household Food Security Survey is in *Appendix 7*.

4.4.1.2 TASMANIAN HOUSEHOLD FOOD SECURITY SURVEY DESIGN

The survey was designed to enhance community response and capture relevant information. It comprised five groups of questions: demographic data, food access, availability, affordability and awareness. Several of the demographic data questions aligned with ABS questions. This was considered important to enable meaningful comparison with future surveys. Existing literature on food security in Tasmania is of limited use because of differences in questions and methodology used. An expert external reference group was formed to provide advice on the development of the research tools, specifically the content of the questionnaire and healthy food basket (see Acknowledgements).

4.4.2 Tasmanian Healthy Food Basket (THFB)

4.4.2.1 DEVELOPMENT OF THE TASMANIAN HEALTHY FOOD BASKET

In Australia there is no regular national survey to monitor and compare food costs, availability and quality in both metropolitan and regional areas. Most Australian states and territories have developed separate surveys conducted from time to time (DOH (WA) 2010). In the case of Tasmania, there have been no surveys undertaken on the costs, availability and quality of healthy foods across Tasmania. The aims, objectives and locations of the existing surveys were reviewed (see *Appendix 1 – Summary of the main healthy food basket surveys in Australia*) and advice from an external expert panel was sought during the development of the Tasmanian Healthy Food Basket Survey.

4.4.2.1.1 Food affordability

This review identified four healthy food basket (HFB) surveys (often referred to as market basket surveys) that have been collected regularly over the past fourteen years. These are the Northern Territory Market Basket (NTMB), the Queensland Healthy Food Access Basket (QLD HFAB), the Illawarra Healthy Food Basket (IHFB) and the Victorian Health Food Basket (VHFB). More recently the Western Australian Food Access and Costs Survey (WA FACS) has been developed. It is the first survey to monitor and compare food cost, availability and quality in Australia and includes foods that appear in the NTMB, QLD HFAB and the IHFB and additional food items. At the time of development of the Tasmanian Healthy Food Basket the WA FACS was in-press. See

Appendix 1 for summary of the objectives, location and timing of the main healthy food baskets in Australia.

The cost component of the THFB has been modelled on the VHFB (Palermo & Wilson 2007). The 44 core food items, from five core food groups of cereals, vegetables and legumes, fruit, meat and meat alternatives, and dairy plus two non-core food items listed in the VHFB represent commonly available and popular food choices purchased in Tasmania, selected to meet at least 85% of all individuals' nutrient requirements and at least 95% of all energy requirements for four household types for a fortnight. The 44 food items selected allow for potential comparison between state jurisdictions. The food items have also been modified to suit Tasmanian purchasing trends.

The advantage for Tasmania of the VHFB over other survey tools is that it uses Nutrient Reference Values (NRVs) (NHMRC, 2005), which were released in 2006 to replace the 1991 Recommended Dietary Intakes (RDIs) to assess nutritional adequacy. The VHFB aims to meet greater than 80% of an individual's nutrient requirements and at least 95% of the energy requirements for all reference families. The VHFB also uses four distinct types of reference family, developed from the ABS 2003 Family Characteristics Survey (ABS 2003) and the 2006 Census of Population and Housing (ABS 2006a). The reference family types are a 'Two parent family' (called a 'Typical family' in much of the research literature, comprising a 44-year-old male and female, 18-year-old female, 8-year-old male); 'Single parent family' (44-year-old female, 18-year-old female, 8-year-old male); 'Older person' (71-year-old female); and 'Single adult' (adult male older than 31). The THFB items and the quantities per household are set out in 2.

The VHFB provides a useful way of comparing food costs and affordability across different family types. Field trials throughout Victoria have confirmed the usefulness of the VHFB and a summary of its application across various local government areas was published in 2010 (Pattieson & Palermo 2010). Its versatility can be demonstrated by its recent use as the preferred healthy food basket tool by (Wong et al. 2011) from Flinders University to investigate the cost, availability and affordability of a healthy food basket across metropolitan Adelaide.

The VHFB is based on the 1998 'Australian Guide to Healthy Eating' (AGTHE) (NHMRC 1998). At the time of data analysis of this project the 1998 version of the AGTHE was in the process of being revised to translate the National Health and Medical Research Council's NRVs for Australia

and New Zealand into food consumption patterns that would differ from the 1998 AGTHE. The consequence of this is that the Tasmanian Healthy Food Basket will require revised dietary modelling to reflect the new Australian Dietary Guidelines and Australian Guide to Healthy Eating launched in February 2013 (NHMRC 2013).

4.4.2.1.2 Food quality

This review identified Australian studies which have measured food quality (see *Appendix 5: Selection of studies assessing quality of fresh fruits and vegetables*) using a variety of methods to rate the quality of fresh produce available in shops including fruit, vegetables and meat. One objective of this approach is to determine whether the quality or variety of fruit and vegetables declines with increasing distance from city centres. The Cancer Council of New South Wales (CCNSW) (2007) has measured the quality of 10 fruits and vegetables, stating in a personal communication that there was limited additional information that could be gained from including a quality assessment of meat products. The Council used a five-point visual assessment method and found some difference in quality according to socio-economic status and remoteness, although this was not statistically significant. Most recently the West Australian Food Access and Costs Survey (DOH (WA) 2010) measured the quality of fresh fruit, vegetables and meat and found that the quality of fresh fruits and vegetables was lower in remote areas. The Tasmanian Healthy Food Basket modelled its quality assessment approach on the CCNSW basket (CCNSW 2007).

4.4.2.1.3 Food variety

This review identified a limited number of Australian studies which have developed tools to measure the variety of fresh fruits and vegetables. The Cancer Council of New South Wales (CCNSW 2007) has measured the availability and the number of varieties of 30 different fresh fruits and vegetables, which included items used in the Queensland Healthy Food Access Basket (Queensland Health 2004; 2006), based on those most commonly consumed. The Tasmanian Healthy Food Basket modelled the assessment of variety on these tools but also sought feedback from Tasmanian stakeholders to identify the most commonly consumed Tasmanian fruit and vegetables. This led to a list of 33 items.

4.4.2.2 DESIGN OF THE TASMANIAN HEALTHY FOOD BASKET

The Tasmanian Healthy Food Basket (THFB) is a tool that assesses the availability, affordability, variety and quality of a selection of food items which meet the nutritional needs of four different household types for a fortnight. The households are the same reference families applicable to the Victorian Healthy Food Basket (see section 4.4.2.1.1.), that is, a two-parent family with two children (referred to in earlier studies as a 'typical family'), single-parent family with two children, a single adult male, and a single older female (ABS 2006a; Booth & Smith 2001)

The Tasmanian Healthy Food Basket Survey Tool has three sections – cost, variety and quality of food. A full copy is to be found in *Appendix 6*.

The 44 core and non-core food items listed in the THFB represent commonly available and popular food choices selected to meet at least 85% of all nutrient requirements and at least 95% of all energy requirements for the members of the four household types for a fortnight.

4.4.2.2.1 Cost

The cost component of the Tasmanian Healthy Food Basket is modelled on the VHFB (Palermo & Wilson 2007).

The THFB survey tool requires that the data gatherers price the cheapest non-generic brand of each item and record the brand name. Where the specific size set out in the THFB is not available the next smallest pack size is priced and the weight recorded. The recorded price is adjusted for package size when the data is compiled. The availability of each product is also recorded. For fresh fruit and vegetables the price per kilogram is recorded. If the product is one that is priced per unit (e.g. lettuce) the item is weighed and the price and weight recorded.

Assessment is then made about the affordability of the basket for each household type by calculating the cost of the basket against incomes.

4.4.2.2.2 Variety

The variety of fresh fruits and vegetables offered is assessed through the Tasmanian Healthy Food Basket Survey. The data collectors record if the 33 fruit and vegetables listed are available as well as the number of different varieties available of that particular fruit or vegetable. This section of the THFB applies the method used in the NSW

Healthy Food Basket Survey (CCNSW 2007) and includes food items selected on the basis that they are commonly consumed fruit and vegetables in Tasmania.

4.4.2.2.3 Quality

The quality of food available in food outlets in Dorset and Clarence was assessed using a five-point visual assessment method similar to that used for the NSW Health Food Basket Survey (CCNSW 2007). Community food researchers subjectively rated the quality of 10 varieties of fresh fruits and vegetables using a five-point scale based on whether all, most, half, some or few of that item on display were good against the combined criteria of whether the produce was not aged, bruised or mouldy. For each store, a maximum score of 50 (all good for all varieties) or a minimum of zero (few good for all varieties) was attainable.

4.4.3 Tasmanian Food Outlet Audit Tool (TFOAT)

4.4.3.1 TASMANIAN FOOD OUTLET AUDIT TOOL CATEGORY DEVELOPMENT

In Australia there are no national standardised categories for classifying food outlets, unlike the United States of America where the North American Industry Classification System (NAICS) is used by federal statistical agencies in classifying business establishments for the purpose of collecting, analysing and publishing statistical data related to the U.S. business economy (USCB 2012).

In some Australian states researchers have used local government food safety licensing definitions (DHHS 2003) but these definitions vary from state to state. *Appendix 3: A sample of studies reviewed to define food outlet categories* provides a summary of a number of national and international food outlet categorisation systems. The differences observed between various categorisation systems in Australia were often due to the need to 'localise' the terms and to account for the food outlet types within different parts of a state or territory. This occurs in regions with small populations where many food outlets provided a range of food items to meet local needs, for example Tasmania's rural butcher and fishmonger being combined. Similarly nut, confectionary and chocolate outlets were combined. Some food outlets provided a range of food items combined with other non-food items such as petrol and newspapers.

For the purpose of this study we have created categories based on those included in the Brisbane Food Study in Queensland (Turrell et al. 2003). The differences in the Tasmanian tool from the Queensland version reflect the need to localise the language and to include food sources such as emergency food relief (EFR) (Herzfeld 2010). A priority for development of the Tasmanian tool was that the categories would allow for comparison between similar studies in Australia.

Excluded from the study were food outlets that provided very limited or seasonal food items which could not be considered reliable or which did not provide a regular source of food for the community (such as local petrol stations which may sell a single line of potato). Roadside or residential sales of home grown produce were also excluded. Although regularly used by some local residents, the non-regulated, sporadic and seasonal nature of these operations were determined not to be a reliable source of food for the community and would be difficult to track for the purposes of this study. Food services such as school, childcare, aged care residential and hospital in-house catering, worksite canteens and food manufacturers were also excluded on the basis that these provided a specific service to particular population groups and did not provide food for sale to the general population.

A copy of the Tasmanian Food Outlet Audit Tool is available in *Appendix 4*.

4.4.3.2 DESIGN OF THE TASMANIAN FOOD OUTLET AUDIT TOOL

The final Tasmanian Community Food Resource Tool is a methodology for assessing and categorising food outlets. It comprises four main sections – instructions for use; a glossary defining food types; a glossary defining food outlet categories; and the food outlet audit.

The instructions provide details on how to use the tool and types of information to be collected. The glossary defining the food types is to help categorise the food outlet. The glossary defining food outlets contains twenty-four categories and has been modelled on the work of Turrell et al (2003), which was used in Queensland for the Brisbane Food Study. The differences between the Tasmanian categories and those used in Queensland reflect the need to localise the language and include additional food sources such as emergency food relief. The Tasmanian Food Outlet Audit Tool also provides for recording details of each food outlet, including the food outlet category and the food types

available for sale (or as emergency relief) in each food outlet.

4.4.4 Interviews/Community forums/focus group discussion

Prompt questions (see *Appendix 8*) for focus groups and community forums were developed after consultation with project stakeholders and experts in the field of food security and the review of relevant literature. They were designed to stimulate discussion about access to food, its affordability and availability and what participants saw as the barriers and enablers to food security in their households and communities.

4.5 Data collection

4.5.1 Quantitative data

4.5.1.1 TASMANIAN FOOD OUTLET AUDIT TOOL (TFOAT)

The two councils involved in the Tasmanian Food Access Research Coalition provided lists of all the registered food outlets in their area. Each outlet was sent a letter (see *Appendix 9*), addressed to the owner or manager, informing them of the study and of the food outlet auditing process. Some outlets responded with clarification about their products.

Using a recent street map the data gatherers reconciled the list provided with current maps adding any food outlets that were missing from the original lists, and noting others that had moved, closed or had inaccurate addresses. The categories of food offered at each outlet were recorded as well as comments about particular characteristics. A decision was made and recorded about which of the 24 categories was applicable.

Once the audit was complete for all food outlets the list was assessed to determine which food outlets would be included in collection of data for the Tasmanian Healthy Food Basket. The audit information was also used for mapping.

4.5.1.2 TASMANIAN HOUSEHOLD FOOD SECURITY SURVEY

4.5.1.2.1 Clarence

The Household Food Security Survey of Clarence was conducted using two approaches. Given the size of the population it was not feasible to undertake a mailed out survey of

the whole municipality. In addition, the research team received strong advice from our community partners, the Neighbourhood Houses, that a written survey would have a very poor response from the members of their communities. It was argued that literacy problems and a general suspicion of questionnaires meant that the better approach would be to offer opportunities for people to complete a survey in a group setting where the background could be explained and they could call on explanations and assistance if needed.

On the recommendation of these stakeholders, a telephone survey was conducted and the written survey was distributed through community networks. The telephone survey of 300 randomly selected households throughout Clarence was conducted by a social research consultancy. The phone survey was undertaken in early December 2011.

One limitation of a telephone survey is that people who depend solely on a mobile phone are excluded from such a survey as it will be conducted using landlines only. There is evidence that about 14% of the general population have only a mobile phone and no land line (CHOICE 2011) but there is emerging evidence that people from lower socio-economic backgrounds are much more likely to be among those who have only a mobile phone (Flanagan 2010). For example, recent research by Anglicare focused on low-income Tasmanians (Flanagan & Flanagan 2011) showed that in their sample 67% had only a mobile phone only with no landline. The possibility of not reaching a representative sample of those on a low income was a concern to the research team as we were particularly interested in hearing about the food security experience of low-income and disadvantaged people.

To address this limitation, the survey was distributed in written form through a range of methods, in hard copy and in electronic form in addition to the telephone survey. Distribution included community events such as the Clarence Plains Fair, through schools, the local LINC's, Neighbourhood Centres, playgroups and parishes. Opportunities to complete the written survey at community events, especially at Neighbourhood Centres, gave encouragement to people who might otherwise not feel comfortable about completing a written survey.

The Tasmanian Food Access Research Coalition project and survey was also promoted through the Clarence area newspaper *The Eastern Shore Sun* and through the Neighbourhood Centres. The survey was available in electronic form on the Clarence City Council and Anglicare websites and promoted through those organisations.

4.5.1.2.2 Dorset

In Dorset the household food security survey was distributed solely as a self-administered questionnaire. The survey was randomly distributed through local post offices within the main population centres of Bridport, Scottsdale, Ringarooma, Winnaleah and Gladstone. Distribution was weighted according to the number of occupied and unoccupied dwellings in the municipality. Prior to the survey being distributed there was promotion through various media including the local newspaper and radio, flyers and school newsletters.

A cover letter outlining the purpose of the survey was attached to the mail-outs to both areas. A return stamped addressed envelope was provided with a separate envelope for people to include their contact details if they wished to enter the \$50 lucky draw. This separate envelope was designed to ensure anonymity of the survey results.

4.5.1.3 TASMANIAN HEALTHY FOOD BASKET SURVEY

Data on the cost of the Tasmanian Healthy Food Basket was collected from 23 food outlets across two local government areas (LGAs) in Tasmania between 28 October and 29 November 2011. The data was collected on a standardised collection sheet with accompanying detailed instructions. The food outlets to be surveyed were determined using the results of the Food Outlet Audit in both Clarence and Dorset. A copy of the survey tool is in *Appendix 6*.

Five food outlet category types were used for this analysis, selected from the categories defined in the Food Outlet Audit tool.

- **Category 1** was the major supermarkets (Coles, Woolworths and large IGAs (Independent Grocers of Australia) with more than four cash registers);
- **Category 2** was the minor independent supermarkets (local IGAs and local specialty grocers with 2-4 cash registers);
- **Category 3** was the local or corner shop (IGA express etc. with one register);
- **Category 4** was the local or corner shop with fuel pump(s) (one register);
- **Category 8** was the fruit and vegetable shop (including markets and mobile fruit and vegetable vans).

Food outlets in categories 1 to 4 were excluded from the survey if they supplied less than 90% (fewer than 40 of 44) (Burns et al. 2004) of the items in the Tasmanian Healthy Food

Basket. Category 8 outlets were excluded if they supplied less than 90% (fewer than 9 of 10) of the fresh fruit and vegetable items in the basket (See *Appendix 4* for a full list of the 24 food outlet categories).

The availability of each item was recorded. Prices of the cheapest non-generic brands of the non-perishable food items in the specified package size were also recorded. If the specified size was not available, the price of the next smaller size was recorded and quantities adjusted accordingly. No discounted or special prices were recorded. For fresh fruit and vegetables, price per kilogram was recorded.

The availability of 33 different fresh fruits and vegetables was recorded. The included survey items were based on the NSW HFB (CCNSW 2007) and were selected based on the most commonly consumed fruit and vegetables in Tasmania. Community food researchers and research assistants recorded whether the fruit and vegetables were available and the number of different varieties of that particular fruit or vegetable.

The quality of 10 varieties of fresh fruit and vegetables was assessed using a five-point visual assessment method based on whether all were good, most were good, half were good, some were good or few items on display were good against the combined criteria of whether the produce was aged, bruised or mouldy (CCNSW 2007). For each food outlet, a maximum score of 50 (all good for all varieties) or a minimum of zero (few good for all varieties) were attainable. The name of the supermarket, the physical address, date, time, time taken to complete the survey and the food researcher's name were recorded.

For each municipality, remoteness was determined by using Australian Standard Geographical Classification (ASGC) Remoteness Index for Australia (DoHA n.d.).

The ABS Socio-Economic Index for Area (SEIFA) was assessed using the relative Socio-Economic Disadvantage Indices by Collection District for each area (ABS 2006c). SEIFA scores are divided into quintiles (1-5), with quintile 1 representing the area with the lowest SES and quintile 5 representing the area with the highest SES.

In both Clarence and Dorset the food outlets registered with the local councils were sent a letter giving them information about the study and its purpose, asking for their cooperation and inviting them to contact the local research team if they had questions. The letter stressed

the information would be collated with other publicly available information to provide a complete picture of food access in the municipality; it also informed the store owner that data collection, analysis and reporting would remain anonymous. Store owners were not provided with a specific date for the visit, but the letter informed them that within the next week or two a 'food researcher would visit their store'.

On entering the store, the food researchers approached the store manager, introduced themselves, reiterated the purpose of the survey and sought verbal permission to be in the store conducting the survey.

4.5.1.3.1 Clarence

Clarence Healthy Food Basket data was gathered by four paid community food researchers, recruited for the project. They were assisted by Anglicare researchers and a final year social work student on field placement.

There were 331 food outlets registered with Clarence City Council. The outlets were sorted into geographical areas and allocated to one of the community food researchers. Each outlet was assessed using the Tasmanian Food Outlet Audit Tool to decide to which of the 24 categories it was best assigned.

The outlets were then allocated to a community food researcher for detailed assessment with each Community Food Researcher being allocated a range of outlet types. Detailed assessment of the selected outlets using the HFB took from a few minutes to two hours. The time required for the assessment depended on the size of the outlet and the range of food offered.

4.5.1.3.2 Dorset

In Dorset data was collected by two research assistants from the University of Tasmania, one Dorset Council Community Officer who was a resident of the municipality and two Department of Health and Human Services staff who were also residents. Teams of two food researchers conducted the survey in each food outlet. This quality component allowed for cross checking and ensured data details were correct.

4.5.2 Qualitative data

4.5.2.1 COMMUNITY FORUMS/FOCUS GROUP DISCUSSIONS

Community forums and focus groups were chosen to explore issues around food security. Food security is a community-wide issue and thus this was an appropriate method of data collection as it supported community-wide participation. Community forums and focus groups are considered an acceptable method of data collection in qualitative research (Sarantakos 1998).

In the focus groups and forums the appropriate procedures were undertaken prior to commencement. At the beginning of each session an introduction about the project was given, including how the data would be used and how it would be stored. Participants were given sufficient information about the project to be able to make an informed decision about participation, including the right to withdraw. Permission to record was sought. Project information sheets and consent forms were distributed.

Interview schedules were developed for Dorset and Clarence based on the research question, the literature review and interviews with local stakeholders about accessibility, affordability, availability and awareness of food. Prompts were developed to encourage discussion and clarity.

The focus group method was selected as the most effective means of gathering the research data as the interactive narrative approach of facilitated focus group discussions ensures that a detailed and contextualised understanding of individual experiences is produced (De Laine 1997; Rice & Ezzy 1999).

Sessions were audio-recorded and the findings subject to thematic analysis. Key points within the responses were grouped in the three food security domains; firstly, food availability/supply which included the determinants related to the food and nutrition system or environments; secondly, food access which included socio-economic determinants that influence people's ability to acquire nutritious foods; and lastly, food utilisation which is about actual choices and consumption of nutritious foods. These broad themes guided the content analysis approach (Liamputtong & Ezzy 2005).

4.5.2.1.1 *Clarence*

Local stakeholders advised that in a large and diverse urban setting like Clarence, and particularly in the areas of relative socio-economic disadvantage, a general invitation to attend a community meeting would not receive a response. Focus groups were therefore held in conjunction with other community activities. Groups were contacted and asked to convene specifically for a focus group or to allot time to conduct a focus group within their regular meeting. The groups which responded ranged from gardening groups, church groups, Neighbourhood House community groups and groups of parents associated with schools.

The focus groups ranged in size from four to 11 people. They were facilitated by a community food researcher while a second researcher acted as a scribe. The data was also audio-recorded and transcribed.

The discussion was started with a question drawn from the interview schedule such as 'What influences the food choices you make when you go shopping?' or 'What is your idea of good food?' These questions and the follow-up prompts were successful in leading to extended and lively discussions. Follow-up questions were used to focus on particular areas.

4.5.2.1.2 *Dorset*

In Dorset the decision was made to use community forums. It was also felt that this design provided a forum for a range of views relating to food to be brought forward, capturing the diverse views, experiences and opinions within the community. In addition, community forums have been used successfully in the Dorset municipality over the last several years to obtain data relevant to health and wellbeing.

The focus group setting provided opportunities for participants to reflect on their developing ideas, adding their voice to what food security means to them. The aim of applying the focus group method of qualitative research was to illuminate people's understandings and make accessible lay knowledge. Lay knowledge provides the opportunity to challenge expert theories suggesting new ways to approach a topic demonstrating the benefits of community dialogue.

Participants in the forum sat in groups of four to eight with a facilitator and scribe. The interview guide was developed to be conversational yet simultaneously providing opportunities for exploring, elucidating and illuminating the subject area under research. The common

starting point for opening the session was '... we are very interested to hear why you were inspired to be involved this evening'.

The community forums were co-analysed, providing credibility to the validity of the findings. Responses to the community forum interviews were organised question by question as a standard interviewing format was used (Patton 2002).

4.5.2.2 SCHOOL PROJECT WITH TASMANIAN CENTRE FOR GLOBAL LEARNING

The Tasmanian Centre for Global Learning (TCGL) is a community organisation that works with educators to integrate active citizenship projects into the curriculum and to help young Tasmanians to create positive change in their communities.

As part of the Tasmanian Food Access Research Coalition project TCGL engaged Rokeby High School students in a food research project and developed education resources that would encourage schools to incorporate food security in their curriculum. An opportunity was thus provided for students to learn about wider food issues as well as to explore the experience of their own families and communities. A separate application for ethics approval for this part of the TFARC project was made to the Tasmanian Department of Education.

The Centre worked with a small catering class at Rokeby High School, primarily by supporting their teacher but also directly with the students on a number of occasions. The aim was for the students to gain an understanding of the TFARC project, social research principles and food security as a local and global issue. From this the students were encouraged to develop and carry out their own research projects on food security.

The project required some adjustment for the special challenges of working with this group of students, in particular absenteeism and the students' lack of confidence in initiating and driving a project. The work undertaken by the class included student and family food journals, a Healthy Living Expo and a Food Survey.

A copy of the full report of the work undertaken by the Tasmanian Centre for Global Learning can be found on p. 151.

4.5.3 Spatial mapping data

Several different data sources were used for the mapping tasks involved in this project. The primary sources of data were the Tasmanian Food Outlet Audit Tool and the Tasmanian Healthy Food Basket Survey (THFB). The secondary sources of data were from SEIFA Index (ABS 2008a), digital boundaries (ABS 2011) Mesh Block (ABS 2008b), income and population information (ABS 2006c), township locations (GeoScience Australia 2012), address-point layers and transport layers (DPIPWE n.d.).

Primary sources of data were used to produce maps of the two municipalities showing the location of all food outlets, location of outlets offering 90% or more of the healthy food basket items, the location of fresh fruit and vegetable outlets, the walkable distances around food outlets, food deserts, and the density of shops in areas.

The secondary sources of data were used to display the road network and location of population areas in the two selected municipalities, geocoding actual food outlets' addresses, and analysis of socio-economic status of suburbs or population centres in the two municipalities.

In Dorset, according to 2006 Census (ABS 2007), Gladstone falls wholly within the municipality of Break O'Day. However, the actual gazetted locality of Gladstone ignores the local government area boundary and crosses between the two municipalities of Dorset and Break O'Day. Gladstone in this report refers to Gladstone locality or township located within Dorset municipality. This information is correct at the time of the research was undertaken (i.e., prior to the 2011 Census).

4.6 Data analysis

4.6.1 Quantitative data analysis

All of the quantitative data from the Tasmanian Household Food Security Survey were coded and entered into the SPSS Software version 19 or STATA software version 12 and checked for data integrity. The findings are mainly presented in the report as frequencies, percentage, mean and median. Inferential statistical techniques were also employed to determine the significance of the results. For categorical data, non-parametric tests such as Chi-square tests were performed to examine the association between different socio-economic

factors and the three aspects of food security. Pricing data were compared as medians using sequential regressions. Post estimation Holms test was used to adjust for p values for multiple comparisons. Results were considered statistically significant at $p=0.05$ level.

4.6.2 Spatial analysis

Maps were produced for both municipalities to show:

- The locations of all food outlets (Maps 1 and 2);
- Food outlet location mapped against the spatial distribution of socio-economic disadvantage (Maps 3 and 4);
- Food outlets within walking distance (Maps 5 and 6);
- The number of food outlets within a walkable distance (Maps 7 and 8);
- Location of food outlets selling 90% of the fruit and vegetable component of the Tasmanian Healthy Food Basket mapped against the spatial distribution of socio-economic disadvantage (Maps 9 and 10);
- A comparison of the distribution of takeaway food outlets and food outlets offering 90% of the Tasmanian Healthy Food Basket (mapped against the spatial distribution of socio-economic disadvantage) (Maps 11 and 12);
- Travel distance to outlets stocking 90% of the Tasmanian Healthy Food Basket (Maps 13, 14 and 15); and
- Location of food outlets selling 90% of the Tasmanian Healthy Food Basket mapped against the spatial distribution of population income (Maps 16 and 17).

4.6.3 Qualitative data analysis

The qualitative data were sourced from the open-ended sections of the surveys, focus groups, community forums and report findings from the school project. The focus group discussions and community forums data were transcribed and also entered into the analysis. Answers to qualitative survey questions were de-identified for data analysis.

The collected qualitative data were collated based on the sub-headings of food security. The grouped data were subject to double-checking to ensure the integrity of the data. Additionally, thematic analysis of data was done to identify key patterns and trends in the data and to compare expressed views. In the first stage, broad categories were identified

within an overall schema, and in the second stage, a detailed series of hierarchical nodes and sub-nodes were developed. The data were coded and, where necessary, extra nodes were built into the schema. A number of quotations are included in the report to illustrate and support the accounts emerging from the textual responses. The focus group participants were

coded according to their municipality (D for Dorset, C for Clarence) and the community forum focus group they participated in (e.g. FG 1, FG 2).

5 Mapping – quantitative analysis and discussion



5.1 Mapping

Another approach to measuring food accessibility and food availability is to use spatial mapping technology. In this part of the project we were able to use information about the location of different types of food outlets, as well as road network and socio-economic data, to generate a series of maps.

The maps in this report were generated from primary sources of data (the Tasmanian Healthy Food Basket Survey and the Tasmanian Food Outlet Audit Tool) combined with secondary data sources (ABS, GeoScience Australia and The LIST). The 2006 ABS Census data and 2007 transport layer data were used (ABS 2007; DPIPW n.d.).

For all maps see *Appendix 12*.

- Maps 1 and 2 show all food outlets in the two study areas and which of the 24 food outlet categories they were assigned to. The food outlet categories are described in the Food Outlet Audit Tool (see *Appendix 4* for the FOAT).
- Submaps 1-6 show sections of the two areas in a larger scale.
- Maps 3 and 4 show the distribution of food outlets by SEIFA (Indexes of Relative Socio-Economic Disadvantage) quintiles for suburbs within the two areas.
- Maps 5 and 6 show all food outlets surrounded by a radius of 400m and of 1000m. The 400m radius is defined as an easy walking distance to the food outlets. Areas beyond 1000m are defined as beyond easy walking distance. Areas beyond 1000m of a food outlet may be considered to be in

a food desert. It should be noted however that the concept of a food desert is an urban concept not directly applicable to rural and remote areas.

- Maps 7 and 8 show the number of food outlets within a 400m ‘walkability’ radius.
- Maps 9 and 10 show distribution of food outlets stocking 90% (9-10 items) of the fresh fruit and vegetables component of the Tasmanian Healthy Food Basket. This is mapped against the SEIFA Index.
- Maps 11 and 12 show a comparison of the distribution of takeaway food outlets and food outlets offering 90% of Tasmanian Healthy Food Basket items (including fresh fruit and vegetable outlets). This is mapped against the SEIFA Index.
- Maps 13, 14 and 15 show the distribution of food accessibility in terms of travel distance to food outlets stocking at least 90% (40 to 44 items) of the Healthy Food Basket in sections of Clarence and Dorset. [Note: Only some areas of both municipalities have been mapped.]
- Maps 16 and 17 show median household weekly income and distribution of food outlets selling at least 90% of the Tasmanian Healthy Food Basket in the two selected municipalities.

Maps 3, 9 and 11 indicate that within the municipality of Clarence, Rokeby, Clarendon Vale, Warrane, Risdon Vale and Mornington are areas at risk of food insecurity due to socio-economic disadvantage (SEIFA index below 2nd quintile) and have a low number of major supermarket/mini supermarket or fruit and vegetable retailers. In contrast Cremorne, Clifton Beach, Sandford and Otago, with a

low level of socio-economic disadvantage (5th quintile), have no food outlets at all, whilst Cambridge has more take-away food outlets than fresh fruit and vegetable retailers. Map 3 indicates that food outlets are more condensed in suburbs (e.g. Howrah, Bellerive, Warrane, Rosny) that experience a high to medium level of socio-economic disadvantage (SEIFA Index below 3rd quintile). Richmond has the same level of socio-economic disadvantage (3rd quintile) but only areas immediately surrounding the Richmond population centre have access to food outlets. Map 4 indicates that substantial parts of Dorset are classified as experiencing a greater level of socio-economic disadvantage (SEIFA index below 2nd quintile) (except for the Waterhouse area).

In Dorset, Maps 2, 4, 10 and 12 show that some areas of Dorset have no access to any food outlets in their local areas (e.g. Pioneer, Ringarooma, Springfield, Nabowla, Waterhouse and Tomahawk). Despite some having access to food outlets, all population centres in Dorset are identified as areas at risk of food insecurity due to the relatively higher level of socio-economic disadvantage. It should be noted that there was no emergency food relief or similar service in Dorset despite its generally low SEIFA ranking. In Dorset the highest SEIFA rankings are Waterhouse and Springfield (SEIFA rankings below 3rd quintile); Bridport, North Scottsdale and Tomahawk have SEIFA rankings below 2nd quintile; and the SEIFA rankings of the remaining population centres in Dorset are below 20% (1st quintile). In spite of the low SEIFA rankings, most available food outlets in Dorset sell fresh food and vegetables (see Map 10). However, in Scottsdale, where the main concentration of food outlets is, the number of take-away food outlets is higher than the number of fresh fruit and vegetable retailers (Map 12).

Many residents living in Clarence had walking access to some food outlets selling a range of healthy food. This included residents of Risdon Vale, Lindisfarne, Warrane, Rosny Park, Bellerive, Rokeby, Clarendon Vale, Lauderdale, Richmond and Cambridge. In Dorset, the population centres of Scottsdale, Bridport, Jetsonville, Branhholm, Derby, Winnaleah and Gladstone had some access to food outlets by foot.

Areas beyond 1000 metres radius around all food outlets (Sandford, Roches Beach, Acton Park, Cremorne and Clifton Beach in Clarence and Waterhouse, Nabowla, Pioneer, Springfield and Musselroe Bay in Dorset) are identified as food deserts, as indicated in Maps 5 and 6. It is

evident that access to food, particularly healthy food, is challenging for most residents of Dorset because of the distance required to travel.

Maps 7 and 8 indicate the number of food outlets within 400 metres in each suburb within Dorset and Clarence. In Clarence, the map analysis shows that Lindisfarne, Bellerive, Howrah, Richmond and Risdon Vale have up to 10 food outlets each. However, two of the food outlets in Risdon Vale were community based food resources (a primary school breakfast club and a program based at the local neighbourhood house). Rosny Park is the suburb with the highest number of food outlets (more than 20 outlets) with a wide range of types (see Map 1). Bellerive also had a higher number, particularly compared to other suburbs within Clarence and Dorset. In Dorset, however, Scottsdale had the highest number of food outlets within 400 metres walking distance (up to 20 outlets), followed by Bridport which had up to 15 food outlets. Other suburbs of Dorset only had one to five food outlets within walking distance.

The distance to the closest food outlet and travel distance to healthy food basket outlets is shown in Maps 13, 14 and 15.

Maps 9 and 10 show the distribution of fresh food and healthy food outlets in two municipalities. Healthy food outlets are defined as selling 90% or more of the items identified for the Tasmanian Healthy Food Basket (that is, at least 40 of the 44 items). Most of these healthy food outlets were located in the western suburbs of Clarence and some of the main population centres of Dorset. The analysis of the maps demonstrates that everywhere in Dorset is within 60km (equivalent to one hour driving time). However, when walking (400 metres radius) the coverage is much more localised to near the healthy food outlets which cluster near the centre of towns. A similar trend was found in Clarence.

There are two observations to be made with regard to Maps 15 and 16. Firstly, healthy food outlets were often present in population centres that had a high density of low-income earners (e.g. Bellerive, Howrah, Scottsdale). Secondly, the access to healthy food outlets decreases as people move from population centres to outer neighbourhoods and the family income also increases in the same direction (e.g. Cremorne, Clifton Beach, Springfield).

5.2 Quantitative findings

5.2.1 Demographic characteristics of the participants

5.2.1.1 TASMANIAN HOUSEHOLD FOOD SECURITY SURVEY

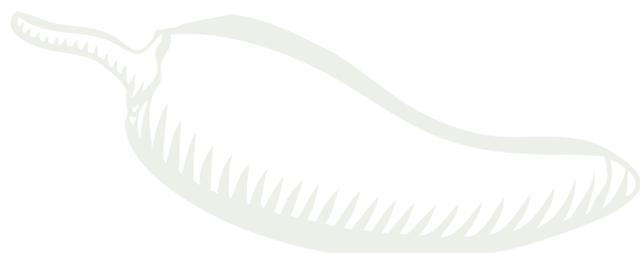
There were a total of 835 respondents to the Tasmanian Household Food Security survey. Respondents were varied in gender, age groups, level of education, family size, employment status and weekly income. A summary of their demographic characteristics is provided in Table 1.



Table 1: Characteristics of the sample

Variables	Dorset	Clarence	Total
	%(n)	%(n)	%(n)
Gender	N = 364	N = 462	N = 826
– Male	20.3 (74)	27.1 (125)	24.1 (199)
– Female	79.7 (290)	72.9 (337)	75.9 (627)
Age Groups	N = 347	N = 449	N = 796
– Under 25	2.3 (8)	3.1 (14)	2.8 (22)
– 25 to 34	7.2 (25)	14.9 (67)	11.6 (92)
– 35 to 44	13.5 (47)	14.0 (63)	13.8 (110)
– 45 to 54	23.1 (80)	17.4 (78)	19.8 (158)
– 55 to 64	28.5 (99)	19.2 (86)	23.2 (185)
– Over 65	25.4 (88)	31.4 (141)	28.8 (229)
Number of family members	N = 320	N = 421	N = 741
– 1	19.1 (61)	22.3 (94)	20.9 (155)
– 2	49.1 (157)	39.0 (164)	43.3 (321)
– 3	11.6 (37)	9.7 (41)	10.5 (78)
– 4	12.2 (39)	17.3 (73)	15.1 (112)
– 5	5.9 (19)	7.8 (33)	7.0 (52)
– 6	0.9 (3)	3.8 (16)	2.6 (19)
– 7	1.3 (4)	0	0.5 (4)
Highest year of school	N = 360	N = 458	N = 818
– Year 8 or below	4.7 (17)	5.0 (23)	4.9 (40)
– Year 9 or equivalent	8.1 (29)	8.5 (39)	8.3 (68)
– Year 10 or equivalent	38.6 (139)	28.4 (130)	32.9 (269)
– Year 11 or equivalent	8.9 (32)	8.5 (39)	8.7 (71)
– Year 12 or equivalent	39.7 (143)	49.6 (227)	45.2 (370)

Highest level of education	N = 196	N = 267	N = 463
– Certificate	11.2 (22)	8.6 (23)	9.7 (45)
– Certificate I & II	6.1 (12)	10.1 (27)	8.4 (39)
– Certificate III & IV	18.9 (37)	19.1 (51)	19.0 (88)
– Apprenticeship	7.7 (15)	7.1 (19)	7.3 (34)
– Diploma or Advanced Diploma	17.9 (35)	13.9 (37)	15.6 (72)
– Bachelor Degree	22.4 (44)	25.1 (67)	24.0 (111)
– Graduate Diploma or Graduate Certificate	7.1 (14)	4.5 (12)	5.6 (26)
– Post graduate degree	8.7 (17)	11.6 (31)	10.4 (48)
Current employment status	N = 355	N = 454	N = 809
– Not in the labour force	25.6 (91)	47.1 (214)	37.7 (305)
– Unemployed – looking for part-time work	1.7 (6)	3.3 (15)	2.6 (21)
– Unemployed – looking for full-time work	1.1 (4)	1.5 (7)	1.4 (11)
– Employed – Away from work	0.3 (1)	0.7 (3)	0.5 (4)
– Employed – work part-time	20.6 (73)	15.9 (72)	17.9 (145)
– Employed – work full-time	22.8 (81)	17.8 (81)	20.0 (162)
– Employed – casual	5.6 (20)	5.9 (27)	5.8 (47)
– Other	22.3 (79)	7.7 (35)	14.1 (114)
Family weekly income	N = 352	N = 461	N = 813
– Negative / Nil income	0.3 (1)	0.2 (1)	0.2 (2)
– \$1 – \$149	0.9 (3)	0.2 (1)	0.5 (4)
– \$150 – \$249	1.4 (5)	10.4 (48)	6.5 (53)
– \$250 – \$349	6.3 (22)	3.3 (15)	4.6 (37)
– \$350 – \$499	10.2 (36)	4.1 (19)	6.8 (55)
– \$500 – \$649	12.8 (45)	17.6 (81)	15.5 (126)
– \$650 – \$799	10.2 (36)	3.5 (16)	6.4 (52)
– \$800 – \$999	6.0 (21)	12.6 (58)	9.7 (79)
– \$1000 – \$1199	8.8 (31)	4.3 (20)	6.3 (51)
– \$1200 – \$1399	6.3 (22)	9.3 (43)	8.0 (65)
– \$1400 – \$1699	6.3 (22)	2.0 (9)	3.8 (31)
– \$1700 – \$1999	7.1 (25)	9.1 (42)	8.2 (67)
– \$2000 – \$2499	3.7 (13)	11.1 (51)	7.9 (64)
– \$2500 – \$2999	2.0 (7)	0.2 (1)	1.0 (8)
– \$3000 or more	2.6 (9)	0.7 (3)	1.5 (12)
– I do not wish to answer this question	15.3 (54)	11.5 (53)	13.2 (107)



More females than males responded to the survey (24.1% male and 75.9% female). Respondents ranged in age from younger than 25 to over 65; however, the age range was skewed, with only 2.8% younger than 25 and 52% aged 55 or over.

Regarding family size, the highest proportion (43.3%) of the participants reported living in a family of two members, with 20.9% living by themselves. One quarter (25.6%) came from a family of three or four members and the remaining 10.1% reported living in larger families of five to seven members.

With regards to levels of schooling, nearly half (45.2%) of the participants reported completing year 12 or equivalent and 32.9% completing year 10 or equivalent. Of those who continued their education after high school, 15.6% reported obtaining a Diploma or Advanced Diploma, 24% a Bachelor Degree, 5.6% a Graduate Diploma or Certificate and 10.4% a Post Graduate Degree.

Responding to the question about current employment status, 37.7% of the participants reported not being in the labour force. This high proportion may reflect that around half of the survey participants were aged 55 and over. While 44.2% were employed either full time, part-time or casual, a small proportion (4%) reported themselves as being unemployed. This proportion is less than the Tasmanian average unemployment rate. These diverse employment backgrounds were in line with the varied family weekly income of the participants, which ranged

from nil income to \$3000 or more per week. It is important to note that the reported income did not cluster around any of the weekly ranges, but were spread across the 15 ranges.

5.2.2 Food availability

5.2.2.1 LOCATION

Tables 2 and 3 indicate the locations, by postcode, of the participants' houses and of the shops where they reported shopping most frequently.

Table 2 indicates that some participants in Dorset travelled outside of their home areas to shop for most of their food. Specifically, although there were 23 participants (6%) living in the four postcodes of 7254 (population centres such as Blumont, Golconda, Lisle, Maurice, Nabowla, South Springfield and Talawa), 7261 (Branxholm and Warrentinna) and 7265 (Winnaleah), none of the reported most visited food shops were in those postcode areas. A large number of people (n=277, 75.3%) reported that their most visited food shop was in postcode area 7260, centred on Scottsdale. Of these, 124 did not live in postcode area 7260 and were therefore travelling some distance to do their regular food shopping.

In addition, about 6% of participants reported travelling to Launceston, well out of the Dorset municipality, for their regular food shopping.

The responses from Clarence were similar to those in Dorset. Table 3 (overleaf) shows that some participants in this municipality travelled outside

Table 2: Responses to Q9 and Q11 – home and most visited shop postcodes in Dorset

Postcodes in Dorset	Home N = 368; Missing = 7		Most visited food shop N = 368; Missing = 19	
	n	%	n	%
7254	2	0.6	N/A	
7260	153	42.4	277	75.3
7261	5	1.4	N/A	
7262	114	31.6	42	11.4
7263	22	6.1	3	0.8
7264	50	13.6	3	0.8
7265	15	4.1	N/A	
Postcodes outside of Dorset				
7216			1	0.3
7250			22	6.0
7315			1	0.3

Table 3: Responses to Q9 and Q11 — home and most visited shop postcodes in Clarence

Postcodes in Clarence	Home N = 467; Missing = 6		Most visited food shop N = 467; Missing = 29	
	n	%	n	%
7015	75	16.3	51	10.9
7016	40	8.7	5	1.1
7017	5	1.1	N/A	
7018	183	39.7	324	69.4
7019	61	13.2	18	3.9
7020	19	4.1	N/A	
7021	25	5.4	6	1.3
7022	7	1.5	N/A	
7023	3	0.7	N/A	
7024	2	0.4	N/A	
7025	13	2.8	2	0.4
7170	28	6.1	N/A	
Postcodes outside Clarence				
7000			5	1.1
7005			2	0.4
7008			1	0.2
7009			2	0.4
7010			9	1.9
7172			10	2.1

of their home areas to get to their most visited food shops. There were 65 participants living in the postcodes of 7017 (Grasstree Hill and Otago), 7020 (Clifton Beach and Sandford), 7022 (South Arm), 7023 (Opossum Bay), 7024 (Cremorne) and 7170 (Acton, Cambridge, Mount Rumney and Seven Mile Beach); however, none of the reported most visited food shops were located in those postcode areas. The most frequently visited food shops were in postcode areas 7018 (centred on Rosny Park and Bellerive) and 7015 (Lindisfarne). The data also shows that some Clarence residents were travelling some distance outside Clarence to do their regular food shopping – particularly to the postcode areas of 7000 (centred on Hobart CBD), 7010 (centred on Glenorchy) and 7172 (centred on Sorell).

Table 4: THFB Household types and income as at November 2011

Household type	Household composition	Income source	Amount per fortnight
Two parent family	44-year-old male and female, 18-year-old female, 8-year-old male	Newstart Allowance + family payments	\$1161.46
Single parent family	44-year-old female, 18-year-old female, 8-year-old male	Newstart Allowance + family payments	\$859.38
Older person	71-year-old female	Age pension	\$748.80
Single adult	adult male >31 years	Newstart Allowance	\$486.80
Employed male person living in Tasmania		Average Total Earnings	\$2422.00

5.2.2.2 PRICE

The cost of the Tasmanian Healthy Food Basket was compared with an estimate of the fortnightly income support payments received by each different household type. This income was calculated using Centrelink payment data and ABS Average Weekly Earnings information from November 2011 (ABS 2012) (Table 4).

The median cost and percentage of income required to purchase a THFB for the four household types across Dorset and Clarence is shown in Tables 5 and 6.

Table 5: Median cost (and range) of a THFB per fortnight for four household types

Local Government Area	Two parent family	Single parent family	Older person	Single adult
Clarence	\$531.73	\$363.28	\$126.66	\$163.03
	Range \$442.86-\$589.17	Range \$302.39-\$398.98	Range \$106.89-\$140.01	Range \$137.54-\$184.47
Dorset	\$503.95	\$341.43	\$120.86	\$157.13
	Range \$452.02-\$586.52	Range \$305.93-\$393.08	Range \$106.37-\$139.95	Range \$141.72-\$181.20
Both LGAs Combined	\$522.92	\$356.59	\$125.83	\$159.81
	Range \$442.86-\$589.17	Range \$302.39-\$398.98	Range \$106.08-\$140.01	Range \$137.54-\$184.47

Table 6: Percentage of income required to purchase a THFB (based on median cost)

Local Government Area	Households on income support payments				Tasmanian Households on Average Wages ¹	
	Two parent family	Single parent family	Older person	Single adult	Two parent family with one waged parent	Single parent family with wages
Clarence	46%	42%	17%	33%	22%	15%
Dorset	43%	40%	16%	32%	21%	14%
Both LGAs Combined	45%	41.5%	17%	33%	22%	15%

As shown in Table 5, the overall median cost of a THFB for a two-parent family was \$522.92.

Overall, in order to purchase a basket of healthy food that would meet 85% of the nutrients and 95% of the energy requirements of the family members, a two-parent family whose income source is income support payments would need to spend a median 46% of their income in Clarence and 43% in Dorset. A two-parent family of four on average wages would need to spend with 22% of their income to purchase the same food items.

¹ These calculations do not include Family Tax Benefit.

A single-parent family whose income source is income support payments would need to spend between 40% and 42% of their income, based on median prices, to purchase a THFB for their family. While a single person living on an age pension would require 16-17% of their income to purchase a THFB, an unemployed adult in receipt of Newstart Allowance would require 32-33% of their income.

Table 7: LGA index of relative socio-economic disadvantage (SEIFA) by collection district quintiles, median THFB cost and number of food outlets

LGA and suburbs	Index of Relative Socio-Economic Disadvantage SEIFA QUINTILE	Two parent family	Single parent family	Older person	Single adult	Number of food outlets offering a THFB
Dorset	2	\$503.95	\$341.43	\$120.86	\$157.13	7
Clarence	1	\$521.75	\$358.59	\$125.83	\$159.44	3
	2	-	-	-	-	-
	3	\$501.22	\$342.91	\$120.14	\$159.10	3
	4	\$533.29	\$359.20	\$127.33	\$163.03	6
	5	\$577.48	\$395.04	\$137.59	\$177.27	2

Table 7 describes the cost of a THFB for each household type according to the Socio-Economic Index for Areas (SEIFA) for each municipality and its suburbs. No significant difference was found for the cost of baskets between different SEIFA locations. In other words, the cost of a Tasmanian Healthy Food Basket was not significantly different no matter what the socio economic status of the local area. See *Appendix 7* for more information about the areas within each municipality.

Table 8: Median cost of a THFB per fortnight for four household types by food outlet category across Dorset and Clarence

Food outlet categories	Clarence				Dorset			
	Two parent family	Single parent family	Older person	Single adult	Two parent family	Single parent family	Older person	Single adult
1. Major supermarket	\$479.38	\$325.55	\$115.00	\$150.44	\$493.29	\$334.68	\$116.65	\$153.45
2. Minor supermarket	\$540.54	\$367.96	\$127.48	\$168.09	\$545.24	\$367.26	\$130.41	\$169.17
3. Local or corner store	\$565.79	\$389.46	\$135.27	\$171.85	\$514.95	\$337.53	\$121.66	\$163.10
4. Local or corner store with fuel pump	\$543.65	\$370.64	\$130.31	\$166.24				

When adjusting for multiple comparisons there was no statistically significant difference between the costs of a THFB purchased at different food outlet categories within or between Clarence and Dorset. This may have been partly due to the small number of food outlets available for data collection in each area. Whilst the difference was not statistically significant, it may be large enough to prove of practical significance in the amount of money a household may actually spend between food outlet categories (Table 9). There was no Category 4 food outlet that met the criteria for providing a Tasmanian Healthy Food Basket in Dorset.

Table 9: Median cost (and range) of the food group components of the THFB per fortnight for four household types

Local Government Area	Two parent family	Single parent family	Older person	Single adult
Fresh fruit and vegetable component (does not include canned and frozen)				
	\$133.61	\$92.89	\$33.55	\$42.41
Clarence	(\$89.02-\$159.35)	(\$61.63-\$110.31)	(\$22.11-\$40.05)	(\$27.71-\$50.18)
	\$125.98	\$86.79	\$31.64	\$38.15
Dorset	(\$101.20-\$140.72)	(\$68.67-\$97.83)	(\$24.84-\$36.22)	(\$32.77-\$43.10)
Bread and cereal				
	\$62.33	\$36.95	\$13.64	\$22.88
Clarence	(\$50.12-\$80.70)	(\$27.36-\$45.71)	(\$10.89-\$17.84)	(\$18.22-\$29.02)
	\$67.43	\$36.98	\$14.83	\$25.26
Dorset	(\$57.08-\$89.65)	(\$33.37-\$45.68)	(\$12.59-\$18.91)	(\$20.83-\$31.61)
Meat and meat alternatives				
	\$118.40	\$80.19	\$29.66	\$37.64
Clarence	(\$100.78-\$161.77)	(\$66.45-\$103.67)	(\$25.16-\$40.99)	(\$33.16-\$56.24)
	\$124.58	\$81.83	\$30.73	\$41.18
Dorset	(\$103.49-\$147.08)	(\$69.22-\$94.84)	(\$25.73-\$36.55)	(\$32.89-\$50.73)
Dairy				
	\$133.14	\$99.14	\$30.43	\$33.36
Clarence	(\$120.19-\$165.61)	(\$89.99-\$126.28)	(\$27.39-\$38.23)	(\$30.21-\$39.33)
	\$134.75	\$101.21	\$30.81	\$33.43
Dorset	(\$100.05-\$154.43)	(\$74.59-\$116.61)	(\$23.13-\$35.22)	(\$25.33-\$37.67)
Non-core food items (not including chocolate bar and cola)				
	\$6.88	\$4.52	\$1.75	\$2.40
Clarence	(\$5.76-\$9.39)	(\$3.82-\$6.19)	(\$1.48-\$2.40)	(\$1.99-\$3.28)
	\$6.74	\$4.36	\$1.69	\$2.35
Dorset	(\$5.30-\$12.91)	(\$3.50-\$8.95)	(\$1.36-\$3.49)	(\$1.84-\$4.46)

When adjusting for multiple comparisons, there was no statistically significant difference in the cost of the fresh fruit and vegetables between each food outlet category within each municipality. This may have been partly due to the small number of food outlets meeting the criteria for data collection.

Table 10: Percentage of total cost per fortnight of THFB (based on median cost) required for each food group component for four household types

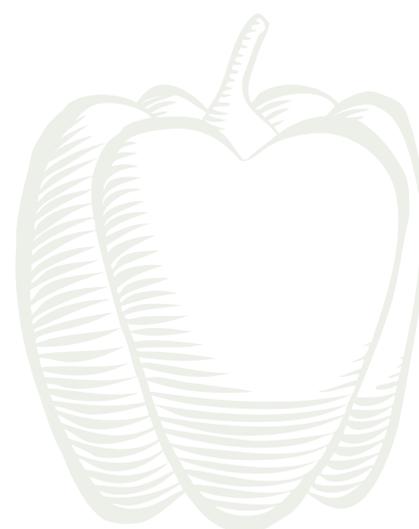
Local Government Area	Two parent family	Single parent family	Older person	Single adult
Fresh fruit and vegetable component (not including tinned or frozen items)				
Clarence	25%	25.6%	26.5%	26%
Dorset	25%	25.4%	26.2%	24.3%
Bread and cereal				
Clarence	11.8%	10.2%	10.8%	14%
Dorset	13.4%	10.8%	12.3%	16.1%
Meat and meat alternatives				
Clarence	22.3%	22.1%	23.4%	23.1%
Dorset	24.7%	24%	25.4%	26.2%
Dairy				
Clarence	25%	27.3%	24%	20.5%
Dorset	26.7%	29.6%	25.5%	21.3%
Non-core food items (not including chocolate bar and cola)				
Clarence	1.3%	1.2%	1.4%	1.5%
Dorset	1.3%	1.3%	1.4%	1.5%

As shown in Table 10, across all household types the three components of fresh fruit and vegetables, meat and meat alternatives, and dairy each comprised about 25% of the total price of the THFB, with breads and cereals comprising 12 – 16% (Table 10).

5.2.2.3 QUALITY

The mean quality score for fresh fruit and vegetables in the two areas was 46, of a possible score of 50. The lowest score was 28; the highest was 50, received by four food outlets. The inner regional areas scored two points higher than the outer regional areas (47 to 45, which is not statistically significant).

There was a lower score for quality in SEIFA quintile 1 areas compared to higher SEIFA quintile areas. The quality of fruit and vegetables was on average 5-6 points higher in higher SEIFA quintile areas than fruit and vegetable quality in SEIFA 1. As SEIFA increased the quality of fruit and vegetables increased although not statistically significantly (Figure 5: Mean quality score of fresh fruit and vegetable varieties according to remoteness and SEIFA).



5.2.2.4 VARIETY

The mean number of fresh fruit and vegetable varieties in the combined areas was 49, with a range from 18 to 107. Outer regional areas had five more fruit and vegetable varieties to select from (54) compared to inner regional areas (49) (Figure 6: Mean number of fresh fruit and vegetable varieties according to remoteness and SEIFA).

5.2.2.5 RANGE OF FOOD OUTLETS

The range of food outlets is one element of the quality of the food environment in any community.

Twenty categories of food outlet were found in Clarence. These range from major supermarkets to smaller more specialised food outlets and include delivered meal services. Dorset had 14 different kinds of food outlets available across the municipality. These also include a variety of food outlets, from major supermarkets to local or corner stores. Maps 1 and 2 show the distribution of food outlets across the municipalities.

Maps 7 and 8 show the areas where there were concentrations of different food outlets. In Dorset there were only two population centres where there were more than five food outlets (Bridport and Scottsdale). In Clarence there were only six such centres (Risdon Vale, Richmond, Lindisfarne, Rosny Park, Bellerive and Howrah). In all other areas where food outlets were located, there were fewer than five and this number may include takeaway food outlets, alcohol outlets or local or a service station (corner store with a fuel pump) (see maps 3 and 4).

However, the diversity of food outlets does not predict people's capacity to purchase the range of foods required for a household's nutritional and energy requirements (that is, a healthy food basket). Those food outlets which were determined to be healthy food outlets stocking 90% of the requirements of a healthy food basket fell into only four food outlet audit categories: fruit and vegetable shops, local or corner stores, major supermarkets and minor supermarkets. In both municipalities some of these food outlets were available in areas beyond the centres of food outlet density.

In question 14 of the Household Food Security Survey, participants were asked to list three shop types that they visited most frequently for their food. The results indicated that the supermarket was the first choice for the majority, around 85% of participants. The

Figure 5: Mean quality score of fresh fruit and vegetable varieties according to remoteness and SEIFA

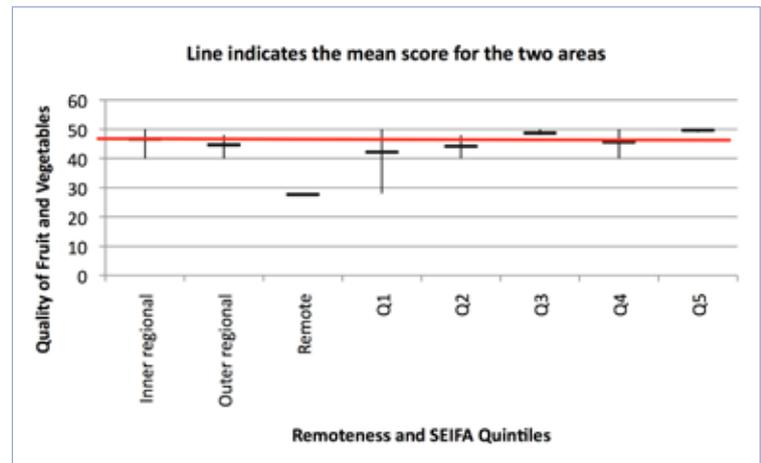
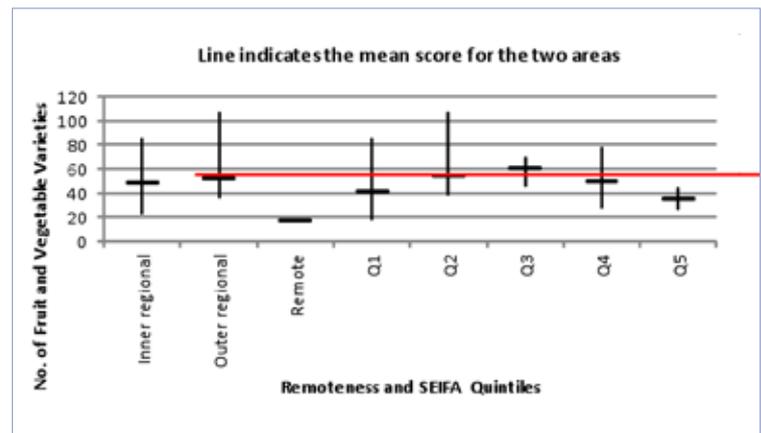


Figure 6: Mean number of fresh fruit and vegetable varieties according to remoteness and SEIFA



butcher and local vegetable shops were given as the second and third choice respectively by most respondents. Other places mentioned by a smaller number of respondents included the bakery, corner shops, fish shops and farmers' markets. The survey findings suggest that although there were a range of different types of food outlets available in the areas under study, the supermarket attracted the highest proportion of the participants.

5.2.3 Food access

Food access is used in this study to refer to the socio-economic determinants that influence people's ability to acquire fresh and nutritious food. These include physical access, financial access, and other access issues.

5.2.3.1 PHYSICAL ACCESS

The THFS survey explores physical access to fresh and nutritious foods through the measurement of the distance to food shops, transport to food shops and frequency of food shopping.

It is believed that physical access to food is largely determined by the distance required to travel to food outlets. Table 11 indicates the travel distance to the shop visited most frequently for food shopping by survey participants.

Table 11: Responses to Q15 – Travel distance to most frequently visited food shop

Travel distance	Dorset N = 360		Clarence N = 459		Total N = 819	
	n	%	n	%	n	%
Less than 1 km	86	23.9	102	22.2	188	23.0
1 km to less than 5 km	69	19.2	196	42.7	265	32.4
5 km to less than 10 km	32	8.9	82	17.9	114	13.9
10 km to less than 20 km	37	10.3	57	12.4	94	11.5
20 km to less than 30 km	49	13.6	15	3.3	64	7.8
30 km to less than 40 km	33	9.2	5	1.1	38	4.6
40 km to less than 50 km	24	6.7	1	0.2	25	3.1
50 km or more	30	8.3	1	0.2	31	3.8

As can be seen in Table 11, among the 818 respondents to this question, almost one-quarter of respondents in both areas lived within one kilometre of their most frequently visited food shop. More than half (55.4%) reported living within 5km of their most frequently visited food shop while 25.4 % were 5-20km and 19.3% more than 20km away. This picture varied between the two areas. In the more densely populated Clarence almost two-thirds (64.9%) of respondents lived within 5 km of their first choice shop, whereas in Dorset this proportion was 43.1%.

Table 12 gives an overview of the means of transport to the participants' most visited food shop.

Table 12: Responses to Q15 – Travel type to most frequently visited food shop

Travel type	Dorset N = 350		Clarence N = 450		Total N = 800	
	n	%	n	%	n	%
Walk	16	4.6	40	8.9	56	7.0
Motorised buggy	3	0.9	1	0.2	4	0.5
Drive/ driven	327	93.4	388	86.2	715	89.4
Taxi	0	0	1	0.2	1	0.1
Public transport	0	0	19	4.2	19	2.4
Community transport	1	0.3	0	0	1	0.1
Other	3	0.8	1	0.2	4	0.5

The most noticeable finding in relation to transport was that in spite of the geographic and other differences between the two municipalities, similar trends are evident. A large majority of the participants in both municipalities reported using cars as the main way of travelling to their most frequently visited shop. In both areas the second ranked choice was walking. Public

transport was the third ranked choice in Clarence. Dorset does not have access to public transport¹.

A closer examination of the means of transport between Dorset and Clarence shows that although the trends were quite similar, a higher percentage of participants reported using cars in Dorset and conversely, a higher percentage of participants reported walking in Clarence. These findings are consistent with the findings on distance to the most visited shop, where the participants in Dorset reported living farther from their shopping places than people in Clarence.

A second indicator of people's physical access to fresh and nutritious foods is how often they are able to shop. Table 13 presents how often respondents shopped at their most visited food shop.

Table 13: Responses to Q15 – Shopping frequency at most frequently visited food shop

Shopping frequency	Dorset N = 362		Clarence N = 460		Total N = 822	
	n	%	n	%	n	%
Daily	28	7.7	45	9.8	73	8.9
2-3 times per week	120	33.1	200	43.5	320	38.9
Weekly	149	41.2	155	33.7	304	37.0
Fortnightly	57	15.7	56	12.2	113	13.7
Monthly	4	1.1	3	0.7	7	0.9
Other	4	1.1	1	0.2	5	0.6

As can be seen from Table 13, of the 822 respondents to this question, most reported shopping for food either 2-3 times per week (38.9%) or weekly (37%) with 8.9% reported shopping for food every day. A proportion of the participants shopped for food only every two weeks or every month. This may have implications for the quality of food consumed by those participants, particularly their access to fresh food.

The participants were also asked to indicate the main reason for visiting the shop where they chose to buy most of their food. The results are set out in Table 14.

Table 14: Responses to Q15 – Main reason for shopping at most frequently visited food shop

Main reason for choosing the food shop	Dorset N = 338		Clarence N = 433		Total N = 771	
	n	%	n	%	n	%
Close to where I live	145	42.9	242	55.9	387	50.2
Close to where I work	28	8.3	10	2.3	38	4.9
It offers many choices	77	22.8	62	14.3	139	18.0
It is good value for money	39	11.5	40	9.2	79	10.2
It is accessible to public transport	1	0.3	5	1.2	6	0.8
Other	48	14.2	74	17.1	122	15.8

¹ A private bus service runs through the municipality from the East Coast to Launceston daily. For the purposes of this study this is not described as public transport.

About half of the participants (50.2%) indicated that the main reason behind their choice of most frequently visited shop was that it was close to where they lived. This finding confirmed the significance of the location and density of the food shops in the local areas.

About one-fifth (18%) indicated that diversity of foods was the main reason for their choice and one-tenth (10.2%) mentioned good value for money. Accessibility by public transport was the main reason for only a very small percentage (0.8%) of the participants choosing that shop.

To further examine the issue of food access in Clarence and Dorset, the survey included two questions about possible travel barriers. The results are presented in Table 15.

Table 15: Responses to Q18 – Possible travel difficulty to and from food shops

Do you find it difficult to get to and from shops to buy food?	Dorset N = 357		Clarence N = 457		Total N = 814	
	n	%	n	%	n	%
Yes	41	11.5	38	8.3	79	9.7
No	316	88.5	419	91.7	735	90.3

Responding to the question about whether or not it is difficult to get to and from food shops, 90.3% of the 814 respondents indicated having no difficulty. This was an encouraging finding although attention should be paid to assisting the remaining 9.7% of the respondents who reported experiencing access difficulties.

Table 16 summarises the findings about the barriers that prevented respondents from getting to and from shops to buy food.

Table 16: Responses to Q19 – Barriers to travel for foods (multiple responses)

Why is it difficult for you to get to and from shops to buy food?	Dorset N = 44		Clarence N = 37		Total N = 81	
	n	%	n	%	n	%
Lack of private transport	5	11.4	13	35.1	18	22.2
Lack of public transport	8	18.2	11	29.7	19	23.5
I have physical limitations	8	18.2	13	35.1	21	25.9
Petrol is expensive	29	65.9	7	18.9	36	44.4
Other	11	25.0	7	18.9	18	22.2

Among the 81 respondents to this question, the highest proportion (44.4%) indicated that the high cost of petrol was the main barrier to travelling for food shopping. The remaining responses identified other barriers, such as the lack of private transport (22.2%), the lack of public transport (23.5%), and physical limitations (25.9%). Other barriers that prevented the respondents from getting to their desired food shops, reported in the open-ended question, included the long distance from home to food shops, not having a drivers licence, infrequent public transport and health issues such as being 'too old'. The responses to this question showed marked differences between the two areas with the cost of petrol being the highest response, not surprisingly, in Dorset where the travel distances between population centres is greater, and lack of private transport and physical limitations being equally highest in Clarence.

Besides the option of physically travelling to and from food shops, online shopping offers another choice which may facilitate food access. However, the results in Table 16 show that the large majority (91.8%) of the survey respondents never shopped online.

Table 17: Responses to Q13 – Online shopping frequency

Online shopping frequency	Dorset N = 364		Clarence N = 462		Total N = 826	
	n	%	N	%	n	%
Never	341	93.7	417	90.3	758	91.8
Weekly	9	2.5	11	2.4	20	2.4
Fortnightly	3	0.8	8	1.7	11	1.3
Monthly	2	0.5	6	1.3	8	1.0
Other	9	2.5	20	4.3	30	3.4

As another indicator of physical access to food, respondents were asked to indicate their coping strategies if the foods they wished to buy were not available in the area in which they usually shopped. As shown in Table 18, while 52.2% (417 of 789) would travel to another area to buy the food unavailable in their area, 39.6% (316 of 789) would choose to go without. Again, online shopping was not a popular choice with only 0.9% reporting that they would order online for home delivery of foods.

Table 18: Responses to Q28 – Coping strategies when preferred foods are not available

If foods are not available in the area in which you usually shop, I would	Dorset N = 344		Clarence N = 445		Total N = 789	
	n	%	n	%	n	%
Go out of usual shopping area (travel to another area)	141	41.0	275	60.7	416	52.2
Order on-line for home delivery	2	0.6	5	1.1	7	0.9
I go without	186	54.1	130	28.7	316	39.6
Other	15	4.4	35	7.7	50	6.3

5.2.3.2 FINANCIAL ACCESS

Financial access refers to the ability to buy fresh and nutritious foods with one's regular income. Within the scope of this survey, financial access was explored by asking about respondents' possible inability to buy nutritious foods in the previous 12 months due to a lack of money.

Table 19: Responses to Q31 – Non-purchase of foods due to lack of money in the last 12 months

In the last 12 months was there any time you could not buy nutritious foods because of shortage of money?	Dorset N = 365		Clarence N = 463		Both N = 828	
	n	%	n	%	n	%
Yes	58	15.9	67	14.5	125	15.1
No	307	84.1	396	85.5	703	84.9

Table 19 shows that 15.1% of the participants (125 of 828) reported shortage of money as a barrier to their access of nutritious foods at some time in the previous 12 months.

Question 32 asked whether household members had gone without food because of shortage of money at any time in the previous 12 months.

Table 20: Responses to Q32 – Family members going without food due to lack of money in the last 12 months

In the last 12 months have members of your house ever gone without food because of shortage of money?	Dorset N = 363		Clarence N = 169		Total N = 532	
	n	%	n	%	n	%
Yes	18	5.0	17	10.1	35	6.6
No	345	95.0	152	89.8	497	93.4

Of 532 respondents to this question, 6.6% indicated that members of their house had gone without food because of shortage of money. This finding suggests that there are people who are not food secure in Dorset and Clarence.

Table 21: Responses to Q33 – Frequency of food shortages in the past 12 months

Frequency of food shortage in the past 12 months	Dorset N = 19		Clarence N = 34		Total N = 53	
	n	%	n	%	n	%
Weekly	2	10.5	4	11.7	6	11.3
Fortnightly	2	10.5	8	23.5	10	18.8
Monthly	3	15.8	6	17.6	9	17.0
3-4 times a year	8	42.1	10	29.4	18	34.0
Once a year	4	21.0	3	8.8	7	13.2
Other	0	0	3	8.8	3	5.6

Table 21 shows that, of those who had run out of nutritious foods at some time in the previous 12 months, 11.3% reported experiencing this weekly, 18.8% fortnightly and 17.0% monthly. A further 34.0% reported running out of nutritious foods 3-4 times per year and 13.2% once per year. Although the percentage of those who had gone without food was not high (around 6.6%), the finding suggests that some members of the community do need help to ensure that they are able to acquire and consume adequate nutritious foods.

To further examine the participants' financial difficulties, question 26 was designed to find out their barriers to buying nutritious foods.

Table 22: Responses to Q26 – Barriers to buying nutritious foods (multiple responses)

What stops or limits you from buying nutritious foods?	Dorset N = 288		Clarence N = 436		Total N = 724	
	n	%	n	%	n	%
Money spent in other areas	41	14.2	51	11.7	92	12.7
Unemployment in immediate family	5	1.7	2	0.5	7	1.0
Off pay week	23	8.0	24	5.5	47	6.5
Nutritious foods are not available	45	15.6	9	2.1	54	7.5
Nutritious foods are too expensive	64	22.2	96	22.0	160	22.1
Other	128	44.4	189	43.4	317	43.8

Table 22 shows that there were 724 responses to this question, a substantially larger proportion of total respondents than had responded to the previous question. The most common of the five options given was that people did not buy nutritious foods because they were too expensive, with 22.1% indicating

that this was a barrier for them. The second ranked barrier was money spent in other areas, and the third was nutritious foods not being available.

Commenting on how they would make their food budget go further in the open-ended question 30, respondents reported a range of ways. Growing and cooking their own foods rather than buying processed foods or eating out was the most frequent response, while buying in bulk, buying food on special or choosing cheaper brands were other strategies reported.

5.2.3.3 OTHER ACCESS ISSUES

Other issues related to food access such as food variety, price, social support and gardening skills were addressed in the survey when respondents were asked to indicate possible solutions to access difficulties. The findings are set out in Table 23.

Table 23: Responses to Q27 — Possible solutions to food access (multiple responses)

Q27: What would make it easier for you to make sure there is always enough nutritious food to eat?	Dorset N = 302		Clarence N = 437		Total N = 739	
	n	%	n	%	n	%
Nothing	210	69.5	262	60.0	472	63.9
More transport	4	1.3	6	1.4	10	1.4
Learn how to grow food	10	3.3	7	1.6	17	2.3
Food choices in local shops	58	19.2	30	6.9	88	11.9
Community eating	2	0.7	2	0.5	4	0.5
Buy affordable food	18	6.0	45	10.3	63	8.5

As can be seen from Table 23, 63.9% of respondents thought that nothing could be done to improve their access to sufficient healthy food. For those who chose the strategies suggested in the survey, different food choices in local shops was the most frequent choice (11.9%) and the ability to buy affordable food (8.5%) was the second most frequent choice. A smaller proportion (2.6%) would choose to learn how to grow fresh food on their own, and 0.5% would opt for community eating.

As a way of assessing the respondents' knowledge or awareness of food quality, question 42 asked about the use of food label information in the food packet (Table 24).

Table 24: Responses to Q42 — Use of food label information

Q42: When you shop, do you ever use the food label information listed on the food packet?	Dorset N = 359		Clarence N = 457		Total N = 816	
	n	%	n	%	n	%
Yes	301	83.8	340	73.9	641	78.3
No	58	16.2	117	25.4	175	21.4

Using the food label information printed on the food packet was reported by 78.3% (641 of 816) of the respondents.

The responses to question 43 provide an overview on the types of food label information that the respondents usually referred to.

Table 25: Responses to Q43 – Types of food label information (multiple responses)

Q43: Which food label information do you use?	Dorset N = 305		Clarence N = 339		Total N = 644	
	n	%	n	%	n	%
Nutrition Information Panel	191	62.6	259	76.4	450	69.9
List of ingredients	214	70.4	265	78.2	479	74.5
Heart Foundation Tick	130	42.6	215	63.4	345	53.6
Glycaemic GI Symbol	71	23.3	118	34.8	189	29.3
Other	82	26.9	144	42.5	226	35.1

Across the two study areas 74.5% reported having used the List of Ingredients, 69.9% the Nutrition Information Panel, 53.6% Heart Foundation Tick and 29.3% the Glycaemic GI Symbol.

5.2.3.4 FOOD ACCESS AND SOCIO-ECONOMIC FACTORS

Statistical tests (Chi-square tests) were performed on some of the responses to questions to see if food access was associated with socio-economic factors such as residential area and family income.

Regarding residential areas, the only significant difference between the residents in Dorset and those in Clarence was found to be related to the travel distance between their houses and their most visited food shops. This was not surprising given that Dorset is geographically much larger than Clarence, with a much smaller population spread over a larger number of population centres.

It was also found that the participants in Dorset were more likely to live farther away from their shopping places than the participants in Clarence².

This significant difference in travel distance, however, did not lead to a significant difference in travel difficulties or other physical access between the residents in Dorset and Clarence. Financial access and other access issues were also found, by the Chi-square tests, not to be associated with residential area.

With regards to the association between family income and food access, a significant difference³ was found between the respondents' weekly family income and their difficulties in getting to and from food shops. Families with lower weekly income were found to be more likely to have travel difficulties between their houses and their most visited food shops.

Family income was also found to be associated with food shortages. Families with different weekly incomes were significantly different from one another in their experience of food shortages in the last 12 months⁴. Unsurprisingly, lower income families were demonstrated to face a higher chance of encountering food shortages than the higher income families. Similarly, the analysis of the test showed that there was a strong association between family income and family members going without food in the last 12 months⁵.

2 The results of the Chi-square tests showed that there was a significant difference (χ^2 Value = 165.9, df = 7, p = .000 < 0.05, n=819) between the two municipalities.

3 χ^2 Value = 66.1, df = 15, p = 0.000 < 0.05, n=794

4 χ^2 Value = 62.7, df = 15, p = 0.000 < 0.05, n=809

5 χ^2 Value = 37.4, df = 15, p = 0.001 < 0.05, n=514



The overall findings from the above Chi-square tests indicate that some aspects of food access in the two municipalities of Dorset and Clarence were associated with the socio-economic factors of residential areas and income.

5.2.4 Food utilisation

Food utilisation is used in this study to refer to the actual consumption of nutritious foods and coping strategies in case of food shortages.

5.2.4.1 FOOD CONSUMPTION

The Tasmanian Household Food Security Survey participants were asked to indicate their intake of various kinds of foods.

Table 26: Responses to Q24 – Consumption of fruit and vegetables

Frequency of fruit and vegetable consumption	Dorset N = 365		Clarence N = 463		Total N = 828	
	n	%	n	%	n	%
Daily	330	90.4	392	84.7	722	87.2
2-3 times per week	27	7.4	54	11.7	81	9.8
Weekly	2	0.5	11	2.4	13	1.6
Fortnightly	2	0.5	2	0.4	4	0.5
Monthly	2	0.5	0	0	2	0.2
Quarterly	1	0.3	0	0	1	0.1
Never	1	0.3	4	0.9	5	0.6

Table 26 shows that 87.2% of the participants reported having fruit and vegetables on a daily basis and 9.8% reported 2-3 times per week. This frequent consumption of fresh foods among a high proportion of the participants was a positive finding. It was noted that a small proportion (between 2.1% and 3.7%) of respondents were not eating enough fruit and vegetables.

Table 27: Responses to Q24 – Consumption of meat, chicken, fish, nuts and legumes

Frequency of meat, chicken, fish, nuts, and legumes consumption	Dorset N = 364		Clarence N = 462		Total N = 826	
	n	%	n	%	n	%
Daily	297	81.6	305	66.0	602	72.9
2-3 times per week	59	16.2	126	27.3	185	22.4
Weekly	5	1.4	21	4.5	26	3.1
Fortnightly	1	0.3	5	1.1	6	0.7
Monthly	0	0	0	0	0	0
Quarterly	0	0	0	0	0	0
Never	2	0.5	5	1.1	7	0.8

Similarly, regarding consumption of meat, fish, chicken, nuts or legumes, Table 27 shows that 72.9% reported having them in their daily diet, and 22.4% reported 2-3 times per week.

Table 28: Responses to Q24 – Consumption of eggs, milk, cheese and yoghurt

Frequency of eggs, milk, cheese and yoghurt consumption	Dorset N = 364		Clarence N = 461		Total N = 825	
	n	%	n	%	n	%
Daily	297	81.6	343	74.4	640	77.6
2-3 times per week	49	13.5	84	18.2	133	16.1
Weekly	13	3.6	26	5.6	39	4.7
Fortnightly	3	0.8	4	0.9	7	0.8
Monthly	0	0	2	0.4	2	0.2
Quarterly	0	0	0	0	0	0
Never	2	0.5	2	0.4	4	0.5

As presented in Table 28, eggs, milk, cheese and yogurt were also regularly consumed by a large proportion of the participants. These dairy foods were reported to be the daily choice of 77.6% of the participants and 16.1% ate them 2-3 times per week.

Table 29: Responses to Q24 – Consumption of bread, cereals and grains

Frequency of bread, cereals and grains consumption	Dorset N = 363		Clarence N = 461		Total N = 824	
	n	%	n	%	n	%
Daily	327	90.1	404	87.6	731	88.7
2-3 times per week	21	5.8	41	8.9	62	7.5
Weekly	13	3.6	10	2.2	23	2.8
Fortnightly	1	0.3	1	0.2	2	0.2
Monthly	1	0.3	3	0.7	4	0.5
Quarterly	0	0	0	0	0	0
Never	0	0	2	0.4	2	0.2

A similar pattern appears with the consumption of bread, cereals, and grains as shown in Table 29. 88.7% of respondents reported eating bread, cereal or grains every day and 7.5% reported doing so 2-3 times per week.

The frequency of food purchase was included in the survey as another indicator about food consumption. In general, the patterns of food purchase clustered around the frequency range from 2-3 times per week to fortnightly, with about half of the participants reported shopping for food at a weekly basis.

Table 30: Responses to Q25 – Purchase of fruit and vegetables

Frequency of fruit and vegetable purchase	Dorset N = 360		Clarence N = 458		Total N = 818	
	n	%	n	%	n	%
Daily	14	3.9	30	6.5	44	5.4
2-3 times per week	102	28.3	173	37.7	275	33.6
Weekly	196	54.4	209	45.5	405	49.5
Fortnightly	41	11.4	41	8.9	82	10.0
Monthly	5	1.4	2	0.4	7	0.9
Quarterly	0	0	0	0.7	0	0
Never	2	0.6	3	0.2	5	0.6

In terms of the purchase of fruit and vegetables as shown in Table 30, nearly half (49.5%) of the participants indicated that they bought on a weekly basis and one-third (33.6%) reported doing so 2-3 times per week. A similar pattern can be seen with other types of food as shown in Tables 31, 32 and 33.

Table 31: Responses to Q25 – Purchase of meat, chicken, fish, nuts and legumes

Frequency of meat, chicken, fish, nuts and legumes purchase	Dorset N = 357		Clarence N = 456		Total N = 813	
	n	%	n	%	n	%
Daily	13	3.6	26	5.7	39	4.8
2-3 times per week	78	21.8	108	23.6	186	22.8
Weekly	178	49.9	222	48.5	400	49.1
Fortnightly	60	16.8	82	17.9	142	17.4
Monthly	20	5.6	10	2.2	30	3.7
Quarterly	6	1.7	4	0.9	10	1.2
Never	2	0.6	4	0.9	6	0.7

Table 32: Responses to Q25 – Purchase of eggs, milk, cheese and yoghurt

Frequency of eggs, milk, cheese and yoghurt purchase	Dorset N = 361		Clarence N = 457		Total N = 818	
	n	%	n	%	n	%
Daily	21	5.8	31	6.8	52	6.3
2-3 times per week	103	28.5	123	26.8	226	27.6
Weekly	182	50.4	246	53.6	428	52.2
Fortnightly	49	13.6	52	11.3	101	12.3
Monthly	4	1.1	3	0.7	7	0.9
Quarterly	0	0	0	0	0	0
Never	2	0.6	2	0.4	4	0.5

Table 33: Responses to Q25 – Purchase of bread, cereals and grains

Frequency of bread, cereals and grains purchase	Dorset N = 359		Clarence N = 456		Total N = 815	
	n	%	n	%	n	%
Daily	19	5.3	51	11.1	70	8.6
2-3 times per week	109	30.4	141	30.8	250	30.6
Weekly	163	45.4	194	42.4	357	43.7
Fortnightly	50	13.9	55	12.0	105	12.9
Monthly	14	3.9	12	2.6	26	3.2
Quarterly	2	0.6	1	0.2	3	0.4
Never	2	0.6	2	0.4	4	0.5

Weekly shopping was the pattern among half of the participants, the most typical shopping habit of the larger population.

The purchase and consumption of take away fast food may be considered an indication of an unhealthy diet. This issue was addressed in question 38 and question 39 of the survey. The findings are provided in Tables 34 and 35.

Table 34: Responses to Q38 – Purchase of take away fast foods

Q38. Do you buy take away fast foods?	Dorset N = 361		Clarence N = 462		Total N = 823	
	n	%	n	%	n	%
Yes	245	67.9	306	66.2	551	66.9
No	116	32.1	156	33.8	272	33.1

As indicated in Table 34, of the 823 respondents to this question, two-thirds or 66.9% reported buying fast food. A follow up question asked about the reasons people chose take away fast food.

Table 35: Responses to Q39 – Reasons for buying fast food (multiple responses)

Q39: Why do you buy takeaway fast food?	Dorset N = 240		Clarence N = 296		Total N = 536	
	n	%	n	%	n	%
Convenient	42	17.5	130	43.9	172	32.1
Cheap	0	0	7	2.4	7	1.3
Tastier	0	0	18	6.1	18	3.4
Family request / demand	3	1.3	21	7.1	24	4.5
As a treat	187	77.9	159	53.7	346	64.6
Other	8	3.3	20	6.8	28	5.2

As shown in Table 35, of the 536 respondents, almost two-thirds (64.6%) indicated that buying fast food was a treat, although more than one-quarter (32.1%) chose fast food because it was convenient. Fast food was chosen for price or taste by only a very small proportion of the respondents (1.3% and 3.4% respectively). The findings indicated that fast food was not seen as a coping strategy to a financial problem or an attempt to improve the meals of the respondents. It was however presented as a time saver from food preparation and a special change to the routine of home cooked meals.

The answers to question 40 provided further information about how often the participants buy fast food (Table 36).

Table 36: Responses to Q40 – Frequency of fast food purchase

Frequency of fast food purchase	Dorset N = 248		Clarence N = 288		Total N = 536	
	n	%	n	%	n	%
Daily	0	0	2	0.7	2	0.4
2-3 times per week	6	2.4	19	3.1	25	4.7
Weekly	31	12.5	75	26.0	106	19.8
Fortnightly	62	25.0	73	25.3	135	25.2
Monthly	92	37.1	82	28.5	174	32.5
Other	57	23.0	37	12.8	94	17.5

Among the 536 respondents to this question, the largest proportion (32.5%) reported monthly purchase of fast food and 25.2% reported fortnightly purchase. These findings were reasonably positive with only a very small percentage of 0.4% reported buying fast food every day and 4.7% doing so two or three times per week.

In summary, about two-thirds of all survey respondents reported buying take away fast foods. Of these two-thirds said they bought take away food as a treat, and one-third said it was convenient.

One-third of those who did buy take away food reported doing so only once a month and a further quarter did so once a fortnight. About 5% or one in twenty respondents bought fast food two to three times per week or every day.

5.2.4.2 FOOD SHORTAGES AND COPING STRATEGIES

Section 5.2.3.2 discussed whether survey participants could afford to buy fresh and nutritious foods. The survey found that 15.1% of the survey participants reported shortage of money as a barrier to their access of nutritious foods at some time in the previous 12 months (see Table 19: Responses to Q31 – Non-purchase of foods due to lack of money in the last 12 months). A further 6.6% of participants reported that a member of their house had gone without food due to a shortage of money (see Table 20: Responses to Q32 – Family members going without food due to lack of money in the last 12 months). The survey also found that for some households the food shortages were frequent. Of those who experienced food shortages, these had been weekly for 11.3% of respondents, fortnightly for 18.8%, monthly for 17% and every three to four months for 34% (see Table 21: Responses to Q33 – Frequency of food shortages in the past 12 months).

The findings on coping strategies provided insights into how the respondents manage to have enough food in times of difficulty. The first coping strategy was making use of support services, such as emergency food relief.

Table 37: Responses to Q34 – Use of emergency food relief services

Have you ever used emergency food relief services when you have run out of the nutritious foods?	Dorset N = 20		Clarence N = 317		Total N = 337	
	n	%	n	%	n	%
Yes	4	20.0	18	5.7	22	6.5
No	16	80.0	299	94.3	315	93.5

As indicated in Table 37, 22 participants reported using emergency food relief services when they could not afford to buy food. Among those participants who used emergency food relief services, eight indicated doing so 3-4 times per year (Table 38). One participant reported using this service weekly, another participant reported fortnightly and two participants monthly use. While 125 participants reported experiencing food shortages during the last 12 months due to shortage of money, only a minority (around 15%) made use of emergency food relief services as one of their coping strategies.

Table 38: Responses to Q35 – Frequency of use of emergency food relief services

Frequency of use of emergency food relief services	Dorset N = 6		Clarence N = 16		Total N = 20	
	n	%	n	%	n	%
Weekly	0	0	1	6.3	1	5.0
Fortnightly	0	0	1	6.3	1	5.0
Monthly	0	0	2	12.5	2	10.0
3-4 times a year	2	50.0	6	37.5	8	40.0
Once a year	0	0	0	0	0	0
Other	2	50.0	6	37.5	8	40.0

The responses to question 36 revealed the reasons some participants in need did not use emergency food relief services when they experienced food shortages (Table 39). Among the 33 respondents to this question, more than one-quarter (27.3%) reported relying on family support. About one-fifth of respondents reported being unaware of services in their area or having transport difficulty in getting to the service (21.1% and 18.2% respectively). These findings suggest that more could be done to increase awareness of existing food relief services and to increase the distribution network of these and other food support services so as to reach more people in need.

Table 39: Responses to Q36 – Reasons for not using emergency food relief services (multiple responses)

What are your main reasons for not using emergency food relief services?	Dorset N = 16		Clarence N = 17		Total N = 33	
	n	%	n	%	n	%
Unaware of services in the area	3	18.8	4	23.5	7	21.2
The food is not suitable for me	0	0	1	5.9	1	3.0
The food is culturally inappropriate	0	0	1	5.9	1	3.0
I do not have transport to get to the service	1	6.3	5	29.4	6	18.2
I have other support such as family or friends	7	43.8	2	11.8	9	27.3
Other	9	56.3	3	16.7	12	35.3

For the majority of those who were faced with food shortages, other strategies were adopted.

Table 40: Responses to Q37 – Other coping strategies for food shortages (multiple responses)

If there are occasions when you are running low on food, how do you manage if you do not use emergency food relief?	Dorset N = 19		Clarence N = 24		Total N = 43	
	n	%	n	%	n	%
Skip meals	7	36.8	11	45.8	18	41.9
Reduce size of meals	4	21.1	5	20.8	9	20.9
Get help from family/ friends	4	21.1	9	37.5	13	30.2
Eat cheaper foods	8	42.1	7	29.2	15	34.9
Cut down on non-essentials	5	26.3	8	33.3	13	30.2
Cut down on nutritious food items	3	15.8	5	20.8	8	18.6
Grow my own fruit and vegetables	9	47.4	5	20.8	14	32.6
Other	3	15.8	2	8.3	5	11.6

As shown in Table 40, of the 43 respondents to this question, 41.9% reported skipping meals, and 34.9% eating cheaper foods. Similar proportions chose to grow their own fruit and vegetables (32.6%), cut down on non-essentials (30.2%), and get help from family and friends (30.2%). Around 20.9% chose to reduce the size of their meals and a similar proportion reported cutting down on nutritious food items. It is of note that at least two (skipping meals and cutting down on nutritious food) of these seven coping strategies would leave a negative impact on the quality of the diet of the respondents. Further investigation is required of the implications of reducing serving size, eating cheaper foods and relying on family and friends to determine whether these are also strategies of concern.

5.3 Discussion

5.3.1 Food availability

5.3.1.1 LOCATION

Food availability was addressed in the Tasmanian Household Food Security Survey to complement the data collected by the Tasmanian Healthy Food Basket Survey. The determinants related to the food environment such as the location and types of food outlets were investigated. The main findings were that a number of the participants in both Dorset and Clarence travelled outside of their home areas to get to their most visited food shops. These findings concur with the revelations from the spatial mapping analysis that both municipalities have many areas that could be classified as food deserts, especially in Dorset, where access to healthy food basket outlets is limited to only seven of the 40 population centres. However, it should be noted that 'food desert' is a term primarily used in an urban context and may not be directly applicable to a rural setting.

Another factor that contributes to the quality of the food environment is the variety of food shops in local areas. The findings from the Tasmanian Household Food Security Survey suggest that there were a number of different types of food shops available in the areas under study, including supermarkets, butchers, fruit and vegetable shops, bakeries and corner shops. This was a positive finding. Among those listed types of food shops, however, the supermarket was the choice of a markedly high proportion of the participants in the survey. The reasons for their choice were out of the scope of this study. However, the needs and attitudes of residents could be further explored if other types of food shops are to attract more attention and the variety of food shops is to be maintained.

5.3.1.2 PRICE

The results of the Tasmanian Healthy Food Basket survey provide information into food costs across two very different local government areas in Tasmania. This data shows that a basket of healthy food is less affordable for some groups in the Tasmanian population than for others.

The present findings are consistent with previous studies suggesting that households dependent on government benefits and allowances need to spend a greater percentage of their income in order to purchase healthy

food compared to other household types. The Two Parent Family case study would need to spend up to 46% of their income support payments in order to consume a nutritionally adequate diet. This is consistent with, but more extreme than, other studies which have shown that households dependent on government benefits and allowances would need to spend 30-44% of their income on food in order to eat a diet consistent with the 1998 version of the Australian Guide to Healthy Eating. This proportion is much higher than the amount that a person on average wages and earnings for a Tasmanian person would have to spend, which would be 14-22%. (DOH (WA) 2010; Pattieson & Palermo 2010; TFSC 2012a; Williams 2009; Williams et al. 2004).

The cost of a Healthy Food Basket was not significantly different regardless of the SEIFA measure of the area in which it was purchased. Similar findings have been identified in previous research indicating no clear trend between healthy food basket cost and the socio-economic status of areas (CCNSW 2007; Tsang et al. 2007). When adjusting for multiple comparisons there was no statistically significant difference between the cost of a Healthy Food Basket regardless of which category of food outlet it was purchased from in either area. This may have been partly due to the small number of food outlets available for data collection in each municipality. Whilst the difference was not statistically significant, there was a visible small difference in the amount of money a household may actually spend between major and minor supermarkets, which could be considered as practically significant, a finding that is consistent with previous studies (Burns 2004; Palermo et al. 2008; Pattieson & Palermo 2010)

Also, when adjusting for multiple comparisons there was no statistical significant difference in the cost of the fresh fruit and vegetables available at each food outlet category in either area. This may have been partly due to the small number of food outlets available for data collection.

5.3.1.3 VARIETY

Overall, during the survey period there was a wide variety of fruit and vegetables available which was not surprising given that the data collection period was during spring, the most productive season for fruits and vegetables. A total of 33 different fruits and vegetable types were included in the survey with an average of 49 varieties found in the two study areas. Surprisingly, outer regional areas had five more

fruit and vegetable varieties to select from (54) compared to inner regional areas (49).

This trend is not consistent with previous studies where variety of fruit and vegetables declines with increasing distance from city centre (Cancer Council of New South Wales 2007; Queensland Health 2004, 2006) and further research is required to explore this finding.

5.3.1.4 QUALITY

In general the quality of fruit and vegetables found in the survey was 'mostly good', although there are no benchmark standards for quality available for comparison. The mean quality score was 46 out of a possible 50.

There was no significant association between quality score and remoteness. This trend is also not consistent with previous studies where quality of fruit and vegetables declines with increasing distance from city centre (Cancer Council of New South Wales 2007; Queensland Health 2004, 2006) and further research is required to explore this finding. There was however a significant association with socio-economic status of the area. The lower SEIFA quintile areas in both municipalities had lower quality fruit and vegetables.

5.3.2 Food access

Food access was examined through the indicators of physical access, financial access, and other access issues such as awareness and social support. These are some of the socio-economic determinants that influence people's ability to acquire fresh and nutritious foods.

5.3.2.1 LOCATION OF FOOD OUTLETS

As suggested by the findings from the Tasmanian Household Food Security Survey, residents were physically limited in access to food in a number of ways, especially the long distance to food shops, and limited transport to food shops. It was found that nearly half of the participants reported living outside of the 5km radius distance from their most frequently visited food shops. This distance between home and food shops implied longer travel time and higher transport expenses for these participants. The analysis of the food outlet mapping in two municipalities demonstrated a wide distribution of food outlet types. Lower density areas, more dependent on private transport, tend to have fewer food outlets, whilst the more central or densely populated areas have more food outlets.

It should be noted that good access in some outer areas involves proximity to a single food outlet, while in central areas it is more likely to involve several different types of food outlets (see Maps 1 and 2).

A large majority of the THFS participants reported using cars as the main way of travelling to their most frequently visited shops. The second ranked choice was walking and the third was public transport. The findings on the principal means of transport seem to corroborate the findings on the distance to food shops and personal cars appear to be the best and in some case the only choice. Not having a driver's licence was mentioned as one of the barriers to food access by some participants. The proximity of food shops was further highlighted when about half of the participants indicated that the main reason behind the choice of their most frequently visited shop was because it was close to where they lived. These statistical findings make a very strong case for the significant role of the location and density of the food shops in residential areas.

5.3.2.2 HEALTH

Another physical access issue which is worth noting is the health barrier that stopped the older and disabled respondents from getting to their desired food shops. Up to 18.8% of the participants reported physical limitations as their access difficulty and another lower proportion mentioned being too old.

5.3.2.3 FINANCIAL ACCESS

This refers to people's capacity to buy fresh and nutritious foods with their regular income. The THFS addressed this issue by asking a question about whether people had been unable to buy nutritious foods due to a lack of money in the previous 12 months. Around 15% reported being unable to buy nutritious foods due to the lack of money at some time in the last 12 months. This result is alarming. This issue needs to be addressed to ensure the quality of food consumption for the people in need. Worse still, 6.6% indicated that their family members had gone without food in the last 12 months. This was a very worrying finding, which convincingly showed that there are people who are not food secure in these two municipalities. These findings support the literature. For example, in their research project into community financial hardship, Madden and Law (2005) found that there was food scarcity among 5% of all Tasmanians, who reported to mostly or always worry about whether the amount of food they could afford would be enough for

their households. In the same project, 4% reported going without meals at some time in the past year due to a shortage of money. On a national scale, the Australian Institute of Health and Welfare (2010) found that low-income households are less likely to consume the recommended intake of fruit and vegetables per day.

Of those participants who had run out of nutritious foods at some time in the previous 12 months, 11.3% reported experiencing this weekly, 18.8% fortnightly and 17.0% monthly. A further 34.0% reported running out of nutritious foods 3-4 times per year and 13.2% once per year. Although the proportion of those who had gone without food was not high as a proportion of the total number of respondents (around 6.3%), the finding suggests that some members of the community do need help to ensure that they are able to acquire and consume adequate nutritious foods.

A further question asked about barriers to buying nutritious food and there were 724 responses to this question. This indicates that a substantial proportion of respondents saw some barriers to getting access to sufficient nutritious food, even where they did not see themselves as 'running out' of food. Responses included 22.1% saying that they did not buy nutritious foods because they were too expensive. Respondents also commented on money spent in other areas, and on nutritious foods not being available.

Research respondents were asked what they would like to see done to see some improvement in their food environment. Of those who wished to see something done, most wished to see an improvement in the diversity of food choices in local shops. It is possible that the desire for variety is leading these participants to travel a long distance to their preferred food shops because they could not find the kinds of fresh and nutritious foods that they would wish to buy in their local shops.

15.1% of the participants reported shortage of money as a barrier to their access of nutritious foods at some time in the previous 12 months, a higher proportion than is usually reported in national studies.

In terms of healthy food awareness, a large majority reported using the food label information as printed on the food packet. This finding was positive in the sense that the residents were highly conscious of what they chose to consume.

The findings from the Tasmanian Household Food Security Survey revealed that some

respondents had limited physical and financial access to food. This has reinforced the evidence base for the implementation of the Food for all Tasmanians: Food Security Strategy (TFSC 2012b), where access and affordability are highlighted amongst the four priorities. If food security means a situation that exists 'when all people, at all times, have physical social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life' as defined by FAO (1996), the areas under study have not fully achieved food security in its widest sense. The most vulnerable groups, as identified in the THFS, were people living on a low income and older people and others with health problems. These two groups have also been listed as those most at risk in the 2012 Food Security Strategy. The evidence of socio-economic disparity in food security emerging from this study provides further support for the Strategy, which focuses on ensuring equity and food security for all Tasmanians.

5.3.3 Food utilisation

Food utilisation in this study referred to the actual consumption of nutritious foods, and coping strategies in case of food shortages.

The findings from the THFS regarding consumption of fresh and nutritious foods were generally positive. Most participants reported eating fruit and vegetables on a daily basis, a strong indication of a healthy and balanced diet. Only a small proportion (of around 5%) seemed not to obtain a balanced diet. Further efforts should be paid to this issue and appropriate measures be taken to help people achieve a higher food security in terms of sufficient intake of healthy foods.

On the other hand, the purchase and consumption of take away fast food is considered to be an indication of an unhealthy diet among the residents. The survey findings showed that the majority of the participants reported buying fast food. However, the majority chose to have fast foods monthly or fortnightly and only a very small percentage reported buying fast food every day or 2-3 times per week. The popularity of fast food, however, was reported not to lie primarily in its price or taste. It was presented as a time saver from food preparation and as a 'treat', a special change to the routine of home cooked meals. In other words, fast food did not seem to be chosen as a coping strategy to a financial problem or an attempt to improve meal quality.

Using the food label information printed on the food packet was reported by almost 80%

of respondents. This finding was positive in the sense that the majority of the respondents indicated that they were thoughtful about what they chose to consume, although it is unclear about which label information was used and how.

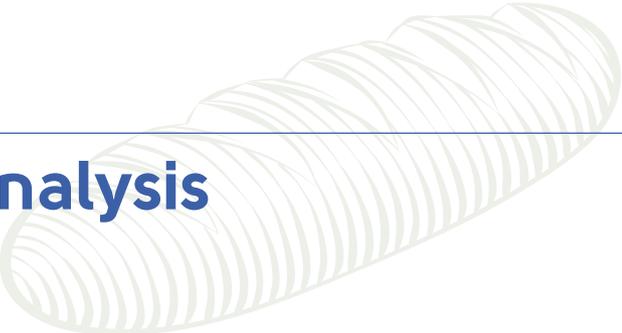
These findings seem to suggest that the majority of residents in the areas under study were aware of what constitutes a healthy diet and their pattern of food consumption was largely in alignment with the nationally recommended intake of fresh and nutritious foods. This is a necessary condition to ensure food security

However, a percentage (6.3%) reported having experienced food shortages or going without foods at some point of time in the previous 12 months. This finding is fairly consistent with other research results in the literature. According to the ABS and the then Commonwealth Department of Health and Family Services (1997), 5% of the Australian general population were regularly at risk of food insecurity in 1995. Although more

recent assessment of food security on a similar nationally comprehensive scale is not available, food deprivation in Australia is presented as an issue by many studies on a smaller scale (e.g. Burns et al. 2004; McCluskey 2009; VicHealth 2007), especially among vulnerable and disadvantaged groups. The finding from this survey can partly confirm that concern.

In terms of coping strategies against food shortages in times of difficulty, a small proportion of the participants turned to social support such as the emergency food relief services. The majority of those who could not regularly afford nutritious foods, drew on other coping strategies such as cutting down on meal size, eating cheaper foods, growing fruit and vegetables, cutting down on non-essentials, or getting help from family and friends. Some had to choose either to miss meals or cut down on nutritious food items. It is worth noting that most of these coping strategies would leave a negative impact on the diet quality of the residents, which should be underlined as an issue to be further addressed.

6 Qualitative analysis and discussion



6.1 Findings

The main themes that emerged from the community forums held in both Dorset and Clarence dealt with food availability and supply, food access and food utilisation. Food availability was discussed in terms of the location and diversity of food outlets, the price charged in those food outlets and the quality of the food available there. Food access was discussed in terms of physical access, financial access (people's capacity to buy fresh and nutritious food with their regular income), and other access issues such as awareness and social support. Food utilisation was discussed in terms of the actual consumption of nutritious foods, choices of food for consumption, and coping strategies in case of food shortages.

Dorset: Within the three main themes of food availability and supply, food access and food

utilisation, several sub-themes were identified in the Dorset forums. Located within the themes of food availability and supply were food origin, price and quality and to a lesser extent sustainability, food production and types of food shops. In food access the social determinants of physical access such as transport and travel distance and associated financial costs such as petrol and parking emerged, and to a lesser extent knowledge and awareness, skills, cultural preferences, employment and social connectedness were mentioned. Lastly, consumption of food evoked conversations related to limited choices, cost and coping strategies for busy lifestyles.

Clarence: Similar themes emerged from the community focus groups in Clarence, although with somewhat different emphases. Price and quality of food, including the concept of good value for money, were by far the strongest

sub-themes within food availability and supply. Other sub-themes which emerged were the resources required for food production including community and home gardening, access to specials and bulk supplies, variety of foods and the origin and sustainability of the food supply. In relation to food access, the theme that recurred most widely was that of skills – skills for shopping, gardening and for cooking. Physical access including distance to shops and mobility was another recurring theme, as were the importance of social supports for food security such as breakfast clubs, community meals and emergency relief. In relation to food utilisation there was a very wide range of comments and suggestions about how people went about ensuring the best possible consumption of food for their households within the other demands of daily life.

For the students in the Tasmanian Centre for Global Learning project at Rokeby High School issues of food utilisation were predominant. Some noted that their involvement in the project had influenced what they and in some cases their families chose to buy, cook and eat.

6.1.1 Food availability /supply

6.1.1.1 PRICE

In both Clarence and Dorset, community members identified the cost of food as an important issue which affected their ability to get access to the food they preferred or needed.

Dorset: A number of people spoke about the price of food being associated with geographical location, noting the further they lived from the main centre the more they had to pay. While they believed this was across the board for all food they believed the price difference was greater for what the participants termed 'healthier food'. Some participants provided general descriptions around price such as 'paying through the nose' and 'unreasonable prices' while others were more specific in terms of referring to depressed farm prices in relation to potatoes and milk. The high price of fruit and vegetables in comparison to processed foods was also mentioned as being a significant community concern.

It's actually not more cheaper to buy fresh fruit, I mean you can buy a box of twenty packets of chips for \$5, you couldn't get 20 bananas for \$5 or 20 oranges for \$5. (D - FG 4)

Clarence: The price of food was an important issue among Clarence community members.

The cost of food was mentioned frequently as a key factor that determined what people ate and provided to their family.

But even rice isn't that cheap these days, and yeah the proportion of fruit and veggie goes down, and you have to say to your kids 'no you can't have another apple', you have to say that, it's a horrible thing to have to say, but you have to say it. (C - FG 8)

I mean I go 'what's cheap, oh this week it's cucumbers, so we're going to have lots of cucumbers'. So like I don't go down thinking 'Oh I'll get watermelon' or 'I'll get bananas', it's whatever's cheapest on the market. (C - FG 8)

Most of your money goes on it, like meat's so dear now and all the junk food's really cheap. (C - FG 4)

I went in and pork roasts were down to \$6.99 so I knew that that was a good price so I bought one and when I shop I'll buy another one and that goes into the freezer. So I won't pay top price for meat, I'll watch and often buy double. (C - FG 2)

6.1.1.2 QUALITY

The quality of the food available in local food outlets was a concern in Clarence, a predominantly urban area, and Dorset, which contains large food production areas.

Dorset: Quality was considered as an equally important issue to price. It was discussed in terms of the length of time produce is kept in the cool store and the possible loss of nutrient value as a result.

I do think sometimes some of the vegetables in the supermarket have been in cool stores too long and so they don't keep when you take them home... I know sometimes the age of some of the vegetables and it's months and they've been in cool store so once you take them they deteriorate very quickly. So I think that's a problem with nutrition as well, I'm not sure but I would think so. (D - FG 8)

Reflecting on the value of travelling the distance to Launceston, rather than shopping in Dorset, another participant stated,

The quality deteriorates because you tend to get what you can, that you think will ... keep that time, but I mean you are running a risk at the end of the fortnight because you know it is no longer fresh but it's better than you get here and you get it cheap. (D - FG 6)

Clarence: In Clarence the issue of quality was closely connected to the issue of price. For many community members it was of even greater importance.

Quality, I won't get my fruit and veggies at Woolworth's any more. (C - FG 1)

One of the major issues is the quality of the food round here that's available...That's one of the big issues in shopping for the area, getting good quality food. (C -FG 6)

People were well aware that purchasing cheaper food often had disadvantages. They reported that cheaper food was often of poorer quality, and particularly, that it was less likely to last.

Well I think [a nearby shop]] might be a dumping ground for all their stuff that's nearly out of date. (C - FG 6)

He does advertise that they're out of date, and he does sell them at quite a cheap price. (C - FG 6)

At the [shop] up here. I've bought some good vegetables up there. But I've bought some rubbish as well. Got home and thought I really shouldn't have bought that. (C - FG 6)

I don't buy some of the cheaper brands. I have found they are not value for money after all, the taste and yes I just don't feel that they are as nice as some of the other things or they last as long. I don't always buy the dearest things either because sometimes they are not the best quality either. You just have to try and judge it I think to what I think is good value for money. (C - FG 2)

6.1.1.3 FOOD ORIGIN

Dorset: In Dorset, food availability and supply as a determinant of food security was seen by participants as being strongly connected and influenced by food origin. People spoke about 'the abundance of imports over locally produced food', 'exports from the north east being available interstate and at cheaper prices', 'access to north east food as being limited', and 'the need to invest locally' with a growing necessity to support local farmers and local businesses.

It usually goes to Launceston first and then comes back because a lot of the packaged vegetables like probably go to Young's and then the shops get it from there and comes back which is... I can't understand why the local, you know like Moore's Scottsdale, he is a terrific man, why they don't sell direct to the

supermarkets here. It would be a lot cheaper. (D - FG 3)

Some were quite specific with one stating,

It alarms me that, as everyone else has said, we are buying second rate produce in the supermarket. Best produce is being exported overseas and we're getting the second grade stuff here. I also agree with [name], why can't we buy fresh fish, we used to be able to in Bridport, but it was closed down because for they had to make major changes to the shop to be able to sell it so now we can't buy it ... and I think we should have farmers markets, where we can sell your onions and things like that. (D - FG 6)

Another stated,

Grapes imported from the USA to Australia there is something wrong, and apples from New Zealand when we used to be the Apple Isle. (D - FG 6)

Food origin was also discussed in terms of 'the future of food in a global sense'. Participants discussed 'the need to eat what's in season – be less fussy – accept a blemish'.

Yeah buying stuff from China is stupid, we have a, are running out of petrol and to bring stuff in from China by plane or by Peru by plane is ridiculous when we can grow it here. (D - FG 2)

I'm wondering whether people would be better to eat what was in season, rather than expect the whole range of vegetables all year because that is what we do, we grow most of our own and that is what we eat over the year. I don't buy many vegetables for that reason, that's the reason why because we've got it in the freezer. (D - FG 3)

Food origin in terms of labelling was considered important and of major concern across the Dorset municipality. This was described as

...security, I think is being able to buy produce that you don't have to check to where it is made, where it had come from, you have security in the knowledge that it is locally grown and produced. (D - FG 6)

What really annoys me, it's not the product, it's the packaging, the packaging is always misleading because they say Product of Australia, but it's the bag that is the product from Australia and the contents comes from God only knows where, because they don't tell you. It is very misleading, they are slimy and they really make me wild. (D - FG 1)

Clarence: There were some people concerned about the 'food miles' travelled by processed and fresh food. There were also concerns about the quality of food that was imported, particularly food coming from overseas where it was perceived that environmental and health practices were poor.

I try not to buy stuff that's manufactured overseas. (C - FG 2)

For me I just have to feed the kids, you know... frozen vegies will do that, but I don't like those cos of what's in them, and where they're from. (C - FG 8)

6.1.1.4 SUSTAINABILITY

The sustainability of local food systems was raised as an issue in both Dorset and Clarence. However the two communities had concerns about different aspects of sustainable food production and distributions systems, reflecting their different environments.

Dorset: In Dorset sustainability was considered an important issue, particularly the issues of land usage and future food supply.

But that is going out the window now with houses that are built in urban areas they are almost that close together that they don't have any room to grow anything so they have to rely on produce that is imported. Well you don't even know how much rubbish's in that. Even healthy food there is a lot of rubbish in it and I'm worried about our, the farmers in Australia loosing arable land, I mean the whole of Australia, we have got one issue coming up now with coal underground and I know a little about that but in the north east with the farm land that is being planted out with trees, there is other places where it could be done, you can't eat trees, that is a big concern of mine. I have seen quite a bit of good land - there is land that is farming land that has been planted but it is marginal, but good chocolate soil and red soil sort of thing should not be planted with trees and I am a farmer, I mean I worked with Forestry. (D - FG 1)

Clarence: In Clarence the community was concerned about the sustainability of smaller, local food outlets. There were a number of comments about types of food shops, that the large supermarkets formed a duopoly that was hard to get away from.

I try not to buy stuff that's manufactured overseas and also I don't buy home brand stuff because I don't want to help Woolworths corner the market with food. (C - FG 2)

Community participants commented on the limitations of smaller, local food outlets.

And I wonder if as well he's [the local shop] a bit limited in what he can get and what he has to charge for it. (C - FG 2)

Well I suppose he's gotta look at what he can sell, and what his clientele wants. It's no use getting in, let's say, ahh, kiwi fruit if no one likes it and he's just going to chuck it out. (C - FG 8)

So he's gotta look at what he's gonna buy, and probably nine times out of ten he's not buying really fresh stuff, you know, just enough to last for a couple of days, you know. (C - FG 6)

6.1.1.5 FOOD PRODUCTION

Dorset: The production of food was also mentioned in community focus groups. While there were many similarities and very few differences in the responses between the areas, it was evident that food availability and supply is an emotive issue and felt across the municipality.

A specific concern was the inability to process in the north east the fruit and vegetables that are grown there and the possible impact this may have on current and future food production.

...we are vegetable growers, I mean we only grow onions now because it's virtually, it is not profitable, you know, to grow the crops. We've grown broccoli, we've grown onion, potatoes, pyrethrum, poppies, all those things and we're just down to just one small crop of onion now. (D - FG 6)

Clarence: The importance of local food production was also raised repeatedly by Clarence community members. However, discussions in this area reflect the urban nature of the municipality and the pressure on land resources. Local community members wished to see an increase in local food production and expressed the belief that resources to support good food were important. Home gardening was highly valued. Many people reminisced about an earlier period when their families grew all their own produce.

There was a great deal of interest in home gardening, school and community gardens.

And the other thing I guess I better mention is working out, cos I've got the hothouse, so we ate our own carrots and tomatoes up until about mid-August, so I think um, and capsicums, so we're almost on our way, if I had more time and I was more organised, we would probably be reasonably self-sufficient most of the year, I think. (C - FG 3)

Community members also valued community food initiatives such as school and community gardens.

They'll be given three garden beds each. The reason for that is that we believe if we can teach kids at a young age, about growing your own veggies, things like that, it will follow through... There'll be two to three gardens set aside for us for our cooking, and we'll probably run a program off that. We'll run right through from picking the veggies to cooking the veggies. And there'll be two beds aside for [the childcare centre] for their children and for their cooking for their lunches and everything, and the remainder will be given out to the community. We're looking at about 6-8 beds that will be remainder... We will also have 10 or 12 fruit trees sitting up there. (C - FG 6)

It was acknowledged that home gardening was not necessarily the answer to food supply for everyone; that it required a good skill level and a lot of work to provide a good supply of food for a family. Older people also talked about how growing older made gardening more difficult physically.

I think a lot of people like the idea of it, but the reality of how much you eat - Bloody hard work. (C - FG 3)

It is, it's incredibly hard work, and there's a lot of failures you have to contend with. Can dull the enthusiasm. (C - FG 3)

It was also acknowledged that having sufficient land for a vegetable garden was not possible for everyone, particularly in high density areas .

Kids and vegetable gardens don't go together, because kids wanna go play games in the back yard. (C - FG 8)

But the room is the issue, we had a huge block of land, but a normal block of land, they're getting smaller and smaller. (C - FG 6)

6.1.2 Access to food

The theme of access to shops was frequently mentioned in the community consultations in both Clarence and Dorset, closely linked to the

issue of whether people could afford to buy food. The issues and barriers that people face are many and varied, with some people facing more than one barrier which compounds an already challenging situation.

6.1.2.1 FINANCIAL ACCESS TO FOOD

Clarence: In addition to the actual price of food Clarence community members raised the issue of whether there was sufficient money available for adequate good quality food after other essential costs such as accommodation and power were accounted for. This theme was framed in recurrent discussions about the pressure of other demands on the household budget, leaving limited money for purchasing good quality food.

Money's tight because of the Hydro... That's impinging on our food problems. (C - FG 1)

I get a three monthly like power bill and when that comes in, I've got to pay it because I don't like being in debt and then I've left myself that broke for that whole fortnight... when I've finally paid the power bill off then I've got another one and if you don't pay your other one before you get the other one then they cut your power off. So I've never had nothing like that happen to me, but like it is so hard, especially near Christmas, I don't know if there's somewhere you can get help. (C - FG 4)

So what do you do when things are really really tight? Go without! Have to eat crap! (C - FG 4)

Dorset: In Dorset, financial access and affordability were considered, like physical access, in a global sense in terms of transport costs rather than in terms of the amount of individual incomes and capacity.

6.1.2.2 PHYSICAL ACCESS TO FOOD

Clarence: Clarence research participants stated that in many cases local food outlets were more expensive than larger, less accessible food outlets. Transport was therefore a key issue. For almost all participants in all locations across Clarence having access to a car was essential. It was noted that the more local 'top up' shops were easier to get to than larger supermarkets, were more expensive and often had a limited range but that their use could be justified because shopping locally saved time and petrol. However, a number of participants did travel well out of their local area and even outside the municipality in order to shop for lower food prices. There were particular shops that people went to, but usually when they were making a

trip for another purpose. For example, people combined shopping at a well reputed fruit and vegetable outlet with a regular visit to relatives.

Some participants reported that there were no food outlets at all within walking distance of their residential area.

The thing is though, there's nowhere within walking distance. (C - FG 6)

Others reported being unable to travel out of their local area take advantage of competition between shops due to their lack of transport. For some community members, being forced to shop in their local area also meant that as consumers they are effectively trapped by their inability to shop around, with no market power.

That is the big problem around here. Around here there's a lot of people, a lot of families that don't have cars. So, this is where [one shop] can take advantage of this community. Cos they've got no choice, virtually, but to go [there]. If you catch a bus to [the large supermarket], you've still got to drag the stuff home. And then once you get off the bus stop, you've still got to walk with those bags. (C - FG 6)

Having to shop at local outlets also meant that they weren't able to get access to a variety of fresh food.

Fresh veggies round here, they haven't got much of a selection. (C - FG 1)

Older people and parents of young children reported particular barriers to choosing food outlets. Their choices were dictated by physical frailty and the need to manage small children in the shop. For them, convenience was an important factor in choosing food outlets. This included the comparative ease of going to a single supermarket to do most of the shopping. People commented that they were aware that the major supermarkets often had poorer quality fruit and vegetables and were often more expensive than specialist fruit and vegetable outlets, but that negotiating a single journey to and from the shops had benefits in time and energy saved.

So we often get people who are disadvantaged already, they will pick up a house fairly cheaply, thinking that they're getting a great deal, but then they're not factoring in the transport issues, how do I get my food, how do I get to my appointments in town, if I'm working how do I get to work, you know, all those sorts of questions are not really looked at by some people. (C - FG 7)

In more than one group there was enthusiasm for local delivery of food. In one area a business that delivered fish to the home was praised.

In another the idea of a trailer that could sell vegetables locally was considered a possibility – it was believed that such a service would help get nutritious food to people who had difficulty travelling.

Dorset: While there were differing views in the Dorset consultations on what 'physical access to food' meant, it was the most significant issue that participants talked about in terms of accessing food. This was not in terms of their own physical ability such as the capacity to walk unaided but the social determinants beyond their immediate control, specifically the travelling to food outlets. A number of people reported driving outside of the area to shop.

A number of people spoke about transport costs impacting on food access, with the dependence on private vehicles as transport. They made comparisons between the price of petrol in the north east and the associated parking costs if one did travel out of the area. Community members reported that to make it financially viable they would try to do their food shopping when they were making a trip for another purpose.

The fuel here is ridiculous; Legerwood at the moment is \$1.56 a litre, \$1.44 in Scottsdale the other day, but in Launceston it's \$1.37 - why? (D - FG 3)

... and then there's parking [referring to cost]. (D - FG 6)

...That puts at least \$20.00 on the cost of vegetables. (D - FG 6)

Participants also cited the conditions of Dorset roads as being a deterrent to travel to food outlets. The condition and safety of the roads was discussed with reference to heavy traffic such as trucks and farm machinery travelling on roads that are steep, narrow and winding. Coupled with this is the weather, which depending on the season may be windy, heavy rain, ice and snow.

Whether it be the Sidling or via Lilydale, they're dangerous roads. (D - FG 6)

And that's something people who live in other parts of the state don't understand because everything is available to them, even though you are only 10 minutes away of Branxholm, it is a matter of getting to Branxholm and the average cost in getting there. (D - FG 3)

However there was a perception by some that food was accessible and that choice played a role, with people choosing precooked food in preference to cooking due to its availability and cheapness.

Food access, I think there is food access in the community, but lots of people don't take advantage of those accesses. I think they'd rather instead of cooking a meal from scratch they'd rather just go down and get a hamburger and a fish and chip for the kids, and that's it, and you are never going to, it is very hard to change people from that mindset. As I said before if you talk about lentils and beans and chicken, maybe a huge problem, but people are very nah... so it's, that's my opinion. (D - FG 7)

Well, food access for me, when you go into a supermarket, look at how much there is, there is too much access in one sense to the wrong sort of food. (D - FG 7)

6.1.2.3 SOCIAL SUPPORT

Clarence: There were many examples throughout Clarence of social support and community services that were helping people improve their food security and participants commented on their value. Breakfast clubs run in association with schools and shared meals at community centres were both identified as important services.

Yeah, we do a breakfast club down there, which is three days a week, Tuesdays, Wednesdays and Thursdays, and per day we would range between 20 to 25 kids going to it. (C - FG 6)

In Clarence it was identified that relief services were needed to support people in times of crisis. Traditional 'emergency relief' services where people were provided with food parcels or vouchers by charitable organisations were seen as not being very accessible either physically or socially, although important. Participants reported that emergency relief services are only offered at limited times and at locations that are quite difficult to get to. They also commented on the emotional difficulty of approaching emergency relief providers.

See people are finding it hard to get stuff off Salvation Army. Just for a \$50 voucher you've got to tell them virtually your whole life story. And they're finding it really hard. (C - FG 6)

More informal and locally delivered support was held to be very important. These included deliveries of fresh food from the Second Bite food recovery program. People reported that

one of main challenges in this was that this supply was variable, and depended on what supplies Second Bite had been able to source. Participants associated with community centres reported that non-perishable supplies were also sourced by the centres from FoodBank, but it was noted that these were frequently products other than food (shampoo for example) and that some of the food was very highly processed, and/or unusual and therefore difficult for people to know what to do with.

That's [a lot of shampoos and toiletries] what a lot of people here have been moaning isn't it, a lot of people have moaning that we don't get healthy stuff. But we can't if there's nothing there. (C - FG 6)

Some participants believed that safe food handling regulations have made it much more difficult to share food at events such as communal meals and having prepared meals available frozen to help people out in difficult times. These sorts of activities now need to be run either very formally through registered organisations or very informally.

The members of one group noted how much they had appreciated assistance with cooked food in times of ill-health or bereavement. These had been provided often anonymously through the community network. Another group described how it had been able to mobilise similar informal networks and provide food support to people 'under the radar'.

Fellowship and that sort of thing makes a heck of a difference. (C - FG 5)

6.1.2.4 KNOWLEDGE, AWARENESS AND SKILLS

In both Dorset and Clarence community members raised the importance of improving the skills of people in the community in shopping, food production, food preparation and storage.

Dorset: Several participants raised the importance of embedding knowledge related to nutrition in the school curriculum, citing it as an action that can overcome food security issues in the immediate, medium and long term.

The one thing that covers all three things, and that is your school gardens, in every school, not just one or two, but one in every school if possible. (D - FG 4)

Make it part of the curriculum. (D - FG 4)

Exactly, then what will happen is that the student will be able to see how these vegetables are grown, they can then be involved in planning, the harvesting, the processing and the eating of it and irrespectively they can do it at school or take it home and do it. (D – FG 4)

Clarence: There was a strong theme in the Clarence focus groups about the need for developing skills in shopping, food production, food preparation and storage skills.

That's why I ended up getting the chooks, because I'm trying to do the whole thing, because I don't have the money, so the hay we use for the guinea pigs then gets given to the chooks, and the chook manure I'm trying to compost, but I'm sort of flying a bit blind to it all. (C – FG 8)

A student involved in the Tasmanian Centre for Global Learning project commented on the difference that thinking about food and nutrition had made.

Yes, I stopped eating unhealthy food and I told my mum and dad about it and they stopped buying it...We just have lots and lots of fruit now. (TCGL)

Following food labels was identified as a problem.

I think a lot of people don't bother reading the dates on the food. I know I've got caught a couple of times. (C – FG 6)

There were many proposals for conducting cooking classes at schools and community centres for children and parents, to build skills and expand the repertoire of tastes.

Yeah, something like that, like and where, then the kids can sort of go home and go 'Oh Mum I had this and it was different', and encourage the kids if they like it to go and tell their parents and maybe if their parents know they liked it so much they'd say 'oh I didn't know you liked that'. (C – FG 8)

A clear theme in the Clarence consultations was the lack of food preparation skills among older men who lived alone. Some of these participants reported an almost total absence of vegetables in their diet and a dependence on pre-packaged meals from the supermarket or counter meals.

The solitary nature of eating alone also affected the food choices of older single people; they reported a lack of motivation to cook food for just their own consumption. A number of older women also talked about the problem

of learning to reduce their food shopping and cooking after a lifetime of cooking for a family.

Another theme was the effect of busy work schedules on food purchasing, preparation and consumption. People commented that time – to shop better, to cook better, to grow food, to seek out bargains – was essential, and yet very difficult to find.

Well coming from a single parent: I'm a single parent myself. I've got to work all day and then I've got to go home and cook tea, tidy the house so I don't have time to do the gardening. (C – FG 6)

...with all the things I've been doing sometimes I have been eating not as healthily as I should do because of pressures of time, more than money. (C – FG 2)

And that's the thing, is when you're busy, and you just want to get your shopping done it can be easier to go straight to [major supermarket] or [shopping district], and do the whole lot of it in one go. (C – FG 3)

6.1.3 Food utilisation

6.1.3.1 FOOD CHOICE

Dorset: Respondents in Dorset indicated their choice of food for consumption was influenced by the price and the capacity to grow their own food; if they did not grow their own food there was not a great deal of choice.

For me it is definitely price driven, I mean over the summer we can't afford to pay \$7 for a cauliflower so we don't buy cauliflower. (D – FG 4)

There's not a lot of choice in this area unless you grow your own. You grow your own don't you? [Asked to other participants.] (D – FG 2)

Clarence: Even those people who described a high level of skill at managing on limited budgets noted that their family's desire for variety in their meals made it unacceptable to cook and serve the same – cheap or bulk purchased – food for several meals in a row.

Particular health problems such as allergies also made additional demands on people's budgets, time and skills.

...try really hard but mine's a major project because [my child] is missing part of her immune system and I really want to feed her organically and it's impossible to buy it and make it worthwhile. (C – FG 8)

...and the cost of organic food is huge isn't it? (C - FG 8)

Young parents spoke about how very challenging it was to balance the demands of cooking adequately when children had such very definite preferences about what they were prepared to eat, especially when combined with budget pressures.

Another recurring theme was the importance of having adequate resources at home for storage and preserving food. In particular access to a freezer was essential to take advantage of home produce and buying in bulk or bargains.

6.1.3.2 COPING STRATEGIES

Clarence: Participants offered many useful insights into how they coped with the demands of providing good food for themselves and their families and ideas that would enable better access to good food for their communities.

Creative approaches to obtaining and utilising food were shared. These included home gardening, group buying, shopping for 'specials' and preparing soup and making use of home freezers.

Domestic facilities, particularly having access to a freezer, was mentioned very frequently as an important strategy. People described buying produce when it was 'on special' and freezing it for later use, they made soup with produce before it 'went off' and they made casseroles, stews and sauces when they had time, energy and enough money to buy larger quantities. This enabled food to be available when people were feeling tired or when money was particularly tight. Other strategies included using slow cookers and making yoghurt at home.

I stock up. Then you never run out. Get things when they're a bargain and put them in the freezer. (C - FG 1)

Whatever you've got in your fridge, you make soup out of them. (C - FG 1)

A reliance on filling staple foods was also an important strategy.

I was lucky, I got given some rice in bulk, you know, huge big bag. And then we just add our veggies and that can be it. Plain rice, plain veggies, whoof! (C - FG 4)

Rice fixes everything. (C - FG 6)

Participants also offered many suggestions and solutions about strategies that would help them and their communities to have better access to

more nutritious food. Community participants believed that there is a lot of possibility to expand home and local production of food. Some of the resources that were mentioned frequently were community gardens and school gardens. People noted that gardening for food production was an advanced skill that needed to be developed, and that it could be very time consuming. Some commented that setting up a garden could be expensive, again unless you were already knowledgeable. Some described how they had thought that they would set up a garden but had been put off when advised at the nursery that it would cost a lot of money to set up raised beds, bring in soil, buy fertilisers and seed. Those who were already home gardeners or involved in community gardening projects saw these as important activities – for health, for economy, for community and family building. It was noted however that vandalism and lack of interest had put paid to a number of gardening projects in schools and the community.

Yeah, and the idea of the fruit and veggie trailer, or whatever, cos that, I work, or volunteer for a co-op, and so we have food, so we always have to think about you know risk and loss and everything. But if you did um fruit, if you sort of tied it in with the community centre program like a meal or something, then whatever's leftover potentially it could go into hampers or go into a meal, or you could make sure there's no waste, it would all just go. And the community centre could even, instead of buying the food for the meal from the supermarket, could even just buy off that enterprise. (C - FG 6)

Dorset: Dealing with busy periods in life, making do and working around shop opening hours were perceived as having a major influence on food choice and were managed in differing ways. Convenience and time were important factors with one person describing the influence on food choice as:

...the butcher shop I buy whatever is left at 5.50pm on a Friday. (D - FG 9)

It just annoys me even their opening hours; they don't open until 8am in the morning, if you have to wait for your money on Centrelink or something to get your kids' school lunch, and I have had to do that, if you could get there earlier in the morning and a bit changed around that it closed a bit earlier at night it would be better for everyone as if you want to get down the street and get your kids' lunch early and if you have no money you can go to the bank as well and other places as like that and you should be able to get into Woollies, you see a lot of people who used to go to work would go to take away shops where

even can get into Woolworth what you want to make the lunches. (D – FG 5)

...however now in really busy times with calving and things like that I will just get the basic, it go to make do until we have more time, so time influences the shopping as well, availability of my own time. (D – FG 3)

6.2 Discussion

This qualitative data revealed areas within both the Dorset and Clarence municipalities that are vulnerable to food insecurity because of access, availability, affordability and knowledge issues. Consultation with a wide range of community members identified key themes ranging from food origin, price, quality, financial and physical access through to issues around social connectedness and coping strategies.

The existing literature on food insecurity in Tasmania is limited by the use of different questions to measure the extent of the problem and differing methodologies making comparisons between data sets difficult. At the time of this research nationwide studies were specific to an area of food insecurity such as access and affordability as well as focusing on a specific group or area such as low income, poor health or unemployment (ABS 1995a, 1997; Madden & Law 2005; DHHS 2009c, 2009e; Flinders University 2010; McCluskey 2009; Palermo & Smith 2009; Queensland Health 2000). The Tasmanian Food Access Research Coalition research was a population based research project and sought to expand the research area in food insecurity by examining four areas, food availability, affordability, knowledge/awareness and accessibility.

6.2.1 Food availability/supply

In both Clarence and Dorset the major themes which emerged from the community consultations around food availability and supply were those of the price of food and concerns about the quality of food that community members could purchase. There were also concerns expressed in both municipalities about the origin of food being purchased and the distance it had travelled before sale, with additional concerns in the Dorset area reflecting the fact that the municipality is a food production area in which it is difficult to purchase locally grown food.

Price and quality: Linking in with this finding was the price and quality of food, indicating a need for a better understanding of how

to secure a sustainable healthy food supply. Clarence residents identified price as a critical factor determining what food was purchased and eaten. Price was linked to the quantity and variety of food purchased. For people who live in a rural area such as Dorset, food and personal transport expenses such as petrol can be costly with food choice largely determined by the cost of the item. Furthermore this is significantly influenced by where the person resided in the municipality, coupled with their employment and family status. This finding is also supported by previous research studies which indicate that people living in rural areas can be disadvantaged in accessing food due to transport costs and limitations on availability (Larson et al. 2009; Pearson et al. 2005).

Quality of food was also a matter of great concern among community members in both municipalities. Clarence residents commented on the poor quality of fruit and vegetables available both at the major supermarkets where many shopped and in the smaller local food outlets. Dorset residents raised concerns in terms of nutrient value, which consequently impacts on health.

Local food production and supply: People in the rural municipality of Dorset are also concerned about food availability and supply, particularly the origin of food and the adequate labelling of imported food. While food labelling laws are governed by the food standards code to inform people and help them make choices, clearly it remains an issue of major concern.

Exports out of the immediate municipality and lack of availability of local produce were identified as another major concern, identifying the need to focus on the agricultural sector and support the local farmer. This was discussed in terms of second rate produce being sold locally, with first rate being exported, and a need to bring the food back to its place of origin, freshness, the future of food and the need to eat what is in season.

The closure of Simplot (the Scottsdale vegetable processing plant closed at the end of 2003) was discussed, generating discussion about the need for a vegetable processing place to be re-established. The rationale was that this would encourage a variety of produce to be grown, supporting the desire to be able to eat locally produced food. This concern is not only confined to Tasmania but is a global concern affecting rural communities worldwide (FAO 1996; Fyfe & Millar 2012; Gender Insight 2012). However at this point in time the findings indicate there is a need for this to be addressed

in the first instance locally and then on a broader scale.

Clarence residents also had concerns about local food production and supply. A theme that emerged from the consultations in the Clarence municipality was the dominance of two large supermarket chains in Tasmania and the difficulties faced by small, local food outlets in supplying fresh fruit and vegetables to local communities. Community food initiatives were highly valued by Clarence community participants, particularly the value they offered in terms of pooled resources and skills in view of the restraints faced by urban people in getting access to land, time and developing the skills to grow food.

6.2.2 Food access

In both Clarence and Dorset the major themes which emerged from the community consultations around food access were those of physical access to food outlets and the need for a level of knowledge and skills to maximise people's access to healthy, nutritious food. In Clarence further themes emerged about the restraints on getting access to food which are imposed by low, fixed incomes and the consequences of poor access to a diverse range of food outlets. Social support, formally as community services and initiatives, and informally as support from friends and neighbours, was also important to ensure food access.

Physical access to food outlets: Transport to food outlets was a key issue in both Clarence and Dorset; having access to a private car was considered essential by residents of both municipalities. The price of petrol was a concern in both communities, with road conditions also a notable concern in Dorset.

In both municipalities people reported opting to travel out of their home area to purchase food. For some this was because there were no food outlets where they lived, or none within walking distance of their residential area. In both regions many reported combining business and personal appointments to make the travel more cost efficient. This suggests that while people do make trade offs they think about the consequences and do so in areas that are seen as essential to them.

Poor physical access was not just a factor of the physical placement of food outlets. The presence of young children and frailty or disability were all reported as factors which had an impact on people's physical access to food outlets and

which pushed people to use 'convenient' food outlets rather than preferred food outlets.

Participants reported that the consequence of poor physical access to food outlets was a reduction in access to a variety of fresh food.

Financial access to food: A theme to emerge from the Clarence focus groups was that a number of participants didn't have enough money to pay for an adequate supply of good quality food after they had paid for other essentials.

Social support: The potential of programs which provided food within a context of social support was raised in both municipalities. School gardens, school breakfast clubs and shared meals at community centres were examples of food initiatives that were seen as useful.

Clarence participants also valued initiatives that operate within the emergency food relief system which focus on food redistribution from food distributors to local community services (such as Second Bite and FoodBank) although they noted some limitations of these programs. (It should be noted that the business model of FoodBank does mean that products that have not sold well are likely to be those that are available for redistribution, rather than being the products households need.)

The importance of social connectedness for food security also emerged. People living alone reported reduced motivation to cook nutritious meals for themselves, with single men particularly reporting on their isolation and lack of skills in food preparation. The role of communal meals in building a sense of cohesion in community groups was identified and the importance of informal networks in the provision of food in times of stress, such as ill-health or bereavement, was also commented on.

Skills: In both municipalities a theme of discussions was the need to increase skill levels throughout the community in growing, cooking and preserving food.

The consultations in Clarence revealed the impact on people's ability to get a nutritious diet if they don't have these skills and the impact of social isolation on not only the capacity but also the motivation to procure and prepare a varied and healthy diet. Some Dorset participants pointed out that food distributors can promote less healthy nutritional patterns. They were clearly familiar with marketing patterns which dominate food stores; they suggested that shoppers have 'too much access' to the wrong type of food in supermarkets and made

particular reference to how food was placed in stores, with fresh fruit and vegetables being at the back and confectionary prominently placed at the entrance and checkouts.

School gardens as an approach to addressing aspects of food security were put forward in both municipalities. Participants in both regions pointed out the level of skill necessary to grow food and expressed a desire to see these skills embedded into the school curriculum.

6.2.3 Food utilisation

This research found that the factors which drove choice around food consumption, and whether or not participants consumed nutritious foods are strongly associated with food availability and supply and whether people can get access to appropriate, affordable and preferred foods.

Dorset: In Dorset, food consumption, specifically the choice of what to eat, was largely influenced by place of residence within the municipality. The Dorset municipality has diverse areas from rugged coast, dense bush and rich farming land. While participants indicated an awareness of what was required for a nutritious meal, their capacity to obtain it was challenged by where they lived in the municipality. Popular coastal holiday areas were subjected to seasonal price rises while inland areas were subject to availability challenges. While growing your own is often put forward as an option it is not always possible in all areas. For example, in some areas wildlife can destroy

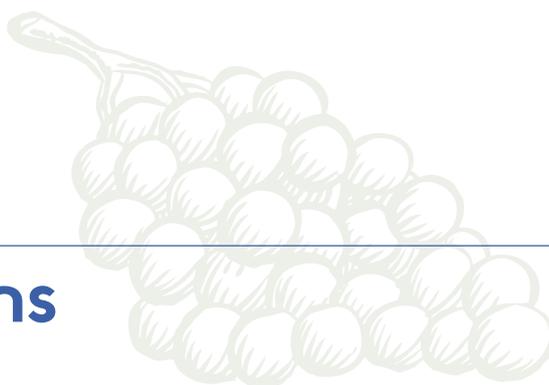
vegetable gardens overnight unless there has been a substantial investment to build solid structures to keep them out.

Coping strategies were discussed in terms of time management; people reported feeling 'time poor' with busy lifestyles limiting the amount of time they could spend on food shopping. In addition people reported that shop hours were not convenient, specifically in relation to school and other shop closing and opening hours, impacting on their ability to manage their time well.

Clarence: There was a very wide range of comments and suggestions about how people went about ensuring the best possible consumption of food for their households within the other demands of daily life.

Participants had many strategies for obtaining and utilising food. These approaches included home gardening, group buying, shopping for 'specials', preparing soup and making use of home freezers. Domestic facilities were important to maximising food utilisation. Those who were already home gardeners or involved in community gardening projects saw these as important activities – for health, for economy, for community and family building. A number of creative ideas were put forward for developing food-based social enterprises. It was noted however that vandalism and lack of interest had put paid to a number of gardening projects in schools and community.

7 Limitations



One limitation of this study was that data collected from the ABS reflects the demographics of the two municipalities from the 2006 census. Updated information from the 2011 Census is out of the scope of this report.

The maps in this report were generated from the 2006 ABS data and 2007 transport layer data.

The location of food outlets and locality names on the maps may contain some inaccuracies.

As the data was collected over one period of time there was no opportunity to assess seasonal variation, particularly in availability or price of food.

8 Recommendations

The work of the Tasmanian Food Access Research Coalition project has indicated that amongst the major factors that influence whether people are able to provide food security for themselves and their families are:

- Adequacy of income in relation to the price of food
- Proximity of food outlets that provide a range of fair priced healthy food
- A physical and policy environment that supports food security.

8.1 Adequacy of income in relation to the price of food

The prevalence of food insecurity in the general population is around 5%. This figure increases to 10% among low-income households (TFSC 2012a). Tasmanian research has found similar results looking at the rates of food insecurity among the general population and those dependent on Australian government income support payments (Madden & Law 2004).

The Tasmanian Food Access Research Coalition project has found that community members were reporting that members of their household had gone without food because of a shortage of money. TFARC's data revealed that there were significant differences in the experiences of food shortages between households. Lower income families faced a higher chance of encountering food shortages, and there was a strong association between low income and family members experiencing going without food.

Further, the research revealed that low-income households would need to spend up to 46% of their income to be able to purchase the basket of healthy food which individuals require to meet their nutrient and energy requirements (in comparison to households on a waged income, which would need to spend up to 22%).

TFARC recommends that the Australian Government commit itself to ensuring that those people dependent on Government income support payments can afford an adequate supply of food that meets the nutrient and energy requirement for all household members. In order to achieve this, TFARC joins with current calls coming from the community services sector for an urgent review of the adequacy of income support payments.

TFARC recommends that the Australian Government urgently review all income support payments to ensure that they are adequate to allow for an acceptable minimum standard of living for all recipients and retain parity with increases in wages and living costs.



8.2 Proximity of food outlets that provide a range of well priced acceptable healthy food

The creation of an environment in which all communities have ready access to food outlets which provide a range of well-priced, acceptable, healthy food requires action at a strategic and policy level and support for local initiatives. TFARC therefore recommends a range of strategies to promote an environment that supports food security, support for local initiatives that promote food security and the development of skills which enable household-level food security.

While a majority of the respondents to the Household Food Security Survey indicated that access to shops was not a major problem for them, it was also clear that for most people the choice of where to shop was based on proximity, usually proximity to where they lived. People reported constantly making trade offs about price, quality, variety and convenience in their choice of where to shop.

A private car was by far the most used transport method.

Public transport that runs regularly and that is easy for people to get on and off would be a help for those who do not drive or have disabilities. Community transport such as community cars can make a big impact on improving accessibility for people with mobility problems and for those living in outlying and rural areas.

TFARC recommends that publicly funded transport systems be promoted wherever possible to support people's capacity to acquire a wide range of healthy food.

TFARC also has some specific recommendations for the promotion of food security in Clarence and Dorset.

8.3 A physical and policy environment that supports food security

8.3.1 The policy environment

TFARC's consultations with community members revealed concerns at community level about local food systems. Community members raised concerns around the need for appropriate decisions around land planning and usage, support for Tasmanian farmers, the need for accurate labeling of food origin, support for a range of local food outlets and appropriate regulation of community events to support seasonal and informal food sales and shared meals.

Tasmania has begun the work of developing a framework for ensuring food security for its citizens into the future through the development of its Food and Nutrition Policy (2004), the establishment of a Food Security Council (2009-11) and the development of a state Food Security Strategy (2012).

TFARC recommends that the Tasmanian Government:

- **Commit to adequate funding for the implementation of the Tasmanian Food Security Strategy and appropriate governance to oversee its implementation.**
- **Encourage the development of local food systems and supply chains by developing and legislating food policies that support a sustainable food system. This includes:**
 - **Recognising the importance of food security in both urban and agricultural land use planning;**
 - **Working with food growers to ensure they have sustainable livelihoods; and**
 - **Working with food industry and retailers.**
- **Ensure that the market power of the large supermarket chains does not undermine the rights of all citizens and all communities to sufficient, affordable healthy food.**

8.3.2 Support for local initiatives that support food security

This research found that communities believed the loss of community capacity in the form of skills in food preparation, preservation and growing was having a detrimental impact on their ability to maintain their own food security. It also identified that community food programs assisted people in managing difficulties around food access and affordability. The research further found that significant community development was possible, and indeed was occurring through local food initiatives and solutions.

TFARC recommends that opportunities for learning and skill development be encouraged and expanded by government, community sector organisations and local groups. These could include: food shopping, food preparation, preserving and cooking skills; the development and sharing of interesting easy recipes and recipes that focus on particular ingredients to take advantage of cheap prices or a glut in home production; gardening and food growing skills; home economics teaching at school; and opportunities to extend skills and interests through communal food preparation and eating. The research also highlighted the value of existing food-focused initiatives and enterprises. These include, but are not limited to, school and community gardens, school kitchens and community eating opportunities, farm gate sales and farmer markets, food cooperatives, group buying and produce swaps.

TFARC recommends that funders and policy makers:

- **Strengthen the viability of existing food focused initiatives and social enterprises, and support the establishment of new ones.**
- **Promote local produce.**
- **Promote skills development and opportunities for learning.**

8.4 Evidence base and further research

This project began the work of developing a monitoring and evaluation framework for measuring food security in Tasmania by developing and testing the tools required. The Healthy Food Basket Survey, Food Outlet Audit, Household Food Security Survey and the participatory research methods utilised by TFARC were successful in collating a baseline of information on food security issues in Clarence and Dorset. The data gathered will support local government planning and state government policy initiatives which promote food security.

TFARC recommends that the Tasmanian Government continue to build the evidence base for food security policy, planning and funding directions through continuing the development of this framework. This should be done through the following measures:

- **A Healthy Food Basket Survey and Food Outlet Audit conducted across Tasmania annually enabling ongoing monitoring of food pricing.**
- **A Household Food Security Survey conducted every 3-5 years across Tasmania enabling ongoing monitoring of household food security.**
- **Qualitative data gathered from communities through participatory research every 3-5 years (in conjunction with the Household Food Security Survey) enabling a detailed understanding of responses and barriers to food security at individual and community level.**
- **Further work to develop research tools that remain valid to the Tasmanian context.**

This research has demonstrated the potential of cross-sectoral coalitions to drive and deliver research, evidence-based tools and resources and community engagement. Cross-sectoral coalitions have also been a feature of successful food coalitions in other jurisdictions.

TFARC therefore recommends that partnerships be established between local and state governments, the food retail industry and appropriate academic institutions to explore food access and pricing influences on health.

This research has demonstrated the potential for research to be undertaken by local government through partnerships. Local government has a community development focus, excellent local networks and a responsibility for planning.

TFARC therefore recommends that the Local Government Association of Tasmania (LGAT) support Food Access Research activities across Tasmania through its member councils.

This research has also demonstrated that community groups and organisations have concerns about issues around food security and insights into the potential for community-driven solutions to food security. The research demonstrated that when provided with evidence-based tools and resources, communities will develop local solutions to local food security concerns.

TFARC therefore recommends that community organisations be supported to undertake Food Access Research activities at local level to help identify access issues and potential community-driven solutions.

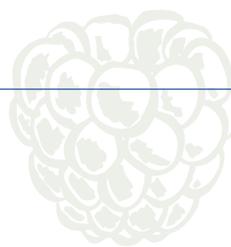
8.5 Support for programs that provide assistance to families and communities

While Emergency Food Relief (EFR) is a crisis response, the research revealed the importance of EFR providers to those families experiencing food insecurity, and the difficulties faced by some families in accessing the providers. The research revealed the gaps in the emergency food relief system, with residents of Dorset having no access to the emergency relief system within the municipality and a fragmented system of ER distribution in Clarence. The research also showed the valuable role played by produce distribution systems such as Second Bite, which operate both within the emergency food relief system and as community food solutions.

TFARC recommends that the EFR system be reviewed with the goals of: improving equity of access across the Tasmania; promoting collaborative efforts; and improving penetration of produce distribution systems.



9 Future research



9.1 Tasmanian Healthy Food Basket

There is a need to undertake further state-wide Healthy Food Basket research across all areas in Tasmania and to extend data collection over a longer period of time. This would strengthen monitoring and surveillance findings in Tasmania.

There are also opportunities to review the content of the Healthy Food Basket to accommodate generic brands as well as to provide a focus on special dietary needs such as gluten-free food items.

9.2 Data gathering

Monitoring online grocery prices from major supermarkets will not only reflect the changing means for households to shop for food, it will also increase frequency of data collection and reduce variability of data.

Automating the data collection process to reduce error through double handling could be investigated. Existing smart-phone applications that provide pricing for shopping and budgeting or a barcode scanning device could be applied to this research.

9.3 Cultural diversity

As Australia is a multicultural society, future research should be directed to the needs of culturally and linguistically diverse communities who may have different patterns of food consumption and belief. This is to ensure food security equality for all Australians.

9.4 Why the supermarket?

The supermarket was the choice of a markedly high proportion of the participants in the survey. The reasons for their choice were out of the scope of this study. However, needs and attitudes relating to this choice should be further explored if other types of food shops are to attract more attention and a diversity of food shops is to be maintained.

9.5 Nutrition information on food packets

It would be of interest to do further research to see how frequently people looked at this information and to what extent they made use of this information. Which types of nutrition information are found to be particularly useful by shoppers? Given Tasmania's low literacy rates it is likely that many shoppers would lack the reading skills to make use of the packet information.

9.6 Remoteness

While TFARC's research found a significant association between quality score and the socio-economic status of the area under study, it found no significant association between quality score and remoteness. This trend is not consistent with previous studies where quality of fruit and vegetables declines with increasing distance from city centre and further research is required to explore this finding.

9.7 Non-regulated, seasonal food sales

TFARC'S research excluded food outlets that provided very limited or seasonal food items which could not be considered reliable or which didn't provide a regular source of food for the community. Roadside or residential sales of home grown produce were also excluded. There may be a role for a future study on the viability and community role of these operations.

9.8 Implications of the cost of components of the healthy food basket

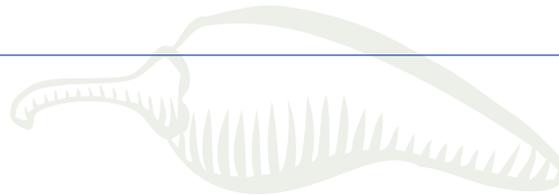
Across all household types the three components of fresh fruit and vegetables, meat and meat alternatives and dairy each comprised about 25% of the total price of the Tasmanian Healthy Food Basket, with breads and cereals comprising 12-16%. More research is needed to understand the implications of dairy and fruit and vegetables being the most expensive components of the healthy food basket, and how this compares to other studies.

9.9 Coping strategies

Respondents to the Household Food Security Survey reported utilising a range of strategies to manage food insecurity, including skipping meals, eating cheaper foods, reducing the size of their meals and cutting down on nutritious food items. It is of note that at least two (skipping meals and cutting down on nutritious

food) of these coping strategies would leave a negative impact on the quality of the diet of the respondents. Further investigation is required of the implications of reducing serving size, eating cheaper foods and relying on family and friends to determine whether these are also strategies of concern.

10 Conclusion



TFARC's project aimed to develop and test the tools which might provide reliable evidence about the experience of food security in different Tasmanian settings.

In the course of this project the research coalition successfully developed the beginnings of a framework for monitoring and evaluating food security in Tasmania. The tools for this evaluation were developed, tested and utilised in two very different sets of conditions. The tools are:

- a tool for categorising food outlets;
- a tool for evaluating the quality and variety of food available at food outlets; and
- a tool for evaluating food security experiences at a household level.

The project also tested whether spatial mapping techniques could provide useful insights into issues around the location of food outlets and where they were to be found in relation to the spatial distribution of socio-economic disadvantage.

Qualitative data was collected through community focus groups and forums to further provide insights into community concerns around food security issues.

These methods proved to be highly successful. Collectively, this data painted a comprehensive picture of food security issues in the two municipalities. It also identified patterns of community resources and strengths.

The research revealed some positive insights into food security issues in the two municipalities.

TFARC's food security survey found strong indications of a healthy and balanced diet among the majority of participants.

While community members certainly feared that remoteness contributed to both high prices and poor quality, TFARC's healthy food basket survey revealed that there was no statistically significant difference between the costs of a healthy food basket purchased at different food outlet categories within, or between, Clarence and Dorset. There was also no statistically significant difference in the mean quality scores for fresh fruit and vegetables between inner regional and outer regional areas. A further surprising finding was that at the time of data collection outer regional areas had more fruit and vegetable varieties to select from than inner regional areas.

Looking at those outlets where people could buy the range of foods they needed to meet their household nutritional and energy requirements (using the Healthy Food Basket Tool) the researchers found that there were four food outlet categories through which this was possible. These were fruit and vegetable shops, local or corner stores and major and minor supermarkets. In both municipalities these 'healthy food outlets' were found to be available in some areas beyond the central population clusters where there were higher densities of food outlets.

However, the research revealed that the simple presence of outlets selling food locally did not answer all concerns. The key findings to be drawn from TFARC's research into the experience of food security in two Tasmanian municipalities also include a number of concerns around access to food in those areas.

TFARC's research found that the affordability of food was a significant concern for residents of both municipalities.

TFARC's food security survey found that a significant number of respondents (15%) reported that shortage of money had been a barrier to their access to nutritious foods at some time in the previous 12 months, and some (6.6%) had gone without food because of a shortage of money. Even more worryingly, this group reported that their experiences of food shortages were regular; around one-third experienced food shortages weekly or fortnightly. While this was the extreme experience of food insecurity, the majority of respondents to the survey (n=724) reported barriers which stopped or limited their purchase of nutritious foods. The major barrier to purchasing nutritious foods identified by the research participants was that of their expense.

Community forums and focus groups revealed a strong concern among community members that fresh and nutritious food was more expensive than pre-packaged and junk food.

TFARC's Healthy Food Basket survey provided insight into the impact purchasing healthy food had on household budgets in the two municipalities. The data enabled the researchers to test what it would cost four different household types to buy a basket of food that would meet 85% of the nutrients and 95% of the energy requirements of its family members. The results were worrying. The data revealed that in order to meet their healthy food requirements most of the households under study would have to spend between one-fifth and one-half of their income. (The example households included both people on average wages and people on pensions and benefits.) However, while expense is clearly having an impact on a range of households, these difficulties were greater for low-income families. TFARC's statistical analysis of the Household Food Security Survey found that there were significant differences in the experiences of food shortages between households. Lower income families faced not only a higher chance of encountering food shortages, but there was a strong association between low income and family members experiencing going without food.

The impact of these pressures on low-income families was explained clearly by the participants in the focus groups and forums, who explained the pressure of competing demands on household budgets, leaving limited money for purchasing good quality food.

TFARC's research found that physical access to food outlets is a significant concern for residents of the two municipalities.

The research revealed that proximity to home was a critical factor determining choice of food outlets, more important than value for money or variety of food on sale.

However, in spite of the importance of proximity, the spatial mapping techniques used by TFARC revealed that some areas within the two municipalities, while identified as experiencing high levels of socio-economic disadvantage and therefore at risk of food insecurity, have little access to supermarkets or fruit and vegetable retailers. It also revealed that some of these areas (at risk of food insecurity due to high levels of socio-economic disadvantage and poor access to food outlets) have no emergency relief provision.

While those residents living in the more densely populated centres in the two municipalities had some food outlets, perhaps even a range of food outlets, within walking distance of their homes (defined as 400 metres from residential areas), the research found that access to healthy food outlets decreased the further people lived from the centre of population clusters. A number of areas were identified as having no food outlets within 1000m or more. These were areas which could be classified as food deserts.

This inability to walk to buy food made access to food, particularly healthy food, challenging. The THFS revealed that transport problems were the largest barrier in getting to and from food outlets. Statistical analysis of the food survey results showed that the groups of families with lower weekly incomes were more likely to report travel difficulties in getting to their most visited food outlets.

TFARC's research also revealed how the communities in the two municipalities were responding to the challenge of poor physical access to food outlets. The THFS revealed that most survey respondents travelled some distance to do their regular food shopping (nearly half travelling five km or more), some travelling well out of their municipalities. In spite of the geographic and other differences between the two municipalities, residents of both areas reported being heavily dependent on private cars in order to do their food shopping. The rural residents of Dorset were particularly dependent on private vehicles and travelled much further to visit food outlets.

TFARC's research revealed worrying findings about access to fresh food.

TFARC's THFS survey revealed that while many people shopped every week, or even two or three times a week, a noticeable proportion of participants only shopped for food every two weeks or once a month. This is a worrying finding as it has implications for the quality of food consumed by those people and raises questions of whether they are able to eat sufficient fresh food. The challenges named by people as making it difficult to get to the shops to buy food focused on transport problems but also included, for a quarter of respondents, their own physical limitations, such as being 'too old'.

The risk of not having access to good quality fresh food appears to increase with location. TFARC's Healthy Food Basket audit revealed an association between lower mean quality scores for fresh fruit and vegetables and areas of lower socio-economic disadvantage (using SEIFA indexes to determine those areas).

Community members reported significant concerns about the quality of the food they could purchase at local food outlets.

The research revealed that the sustainability of local food systems was of concern to community members in both municipalities.

Community members expressed concerns about the movement of food out of local areas and the importation of less fresh and less good quality food. There was a desire, expressed in the forums and focus groups in both Clarence and Dorset, for opportunities to buy fresh and locally grown food. Community members raised issues around the need to support local food systems, such as appropriate decisions around land planning and usage, support for Tasmanian farmers, the need for accurate labeling of food origin, support for a range of local food outlets, support for community food initiatives and appropriate regulation of community events to support seasonal and informal food sales and shared meals.

TFARC's community forums revealed the importance of community initiatives in responding to food security concerns. Many examples were given to the community food researchers of social support and community services that were helping people address food security concerns. These included breakfast clubs, shared meals, food recovery programs and unconventional food distribution and sales. TFARC's food security survey revealed that while most people reported shopping in

supermarkets, farmers' markets or farm gate operations were also an option being exercised by a number of community members.

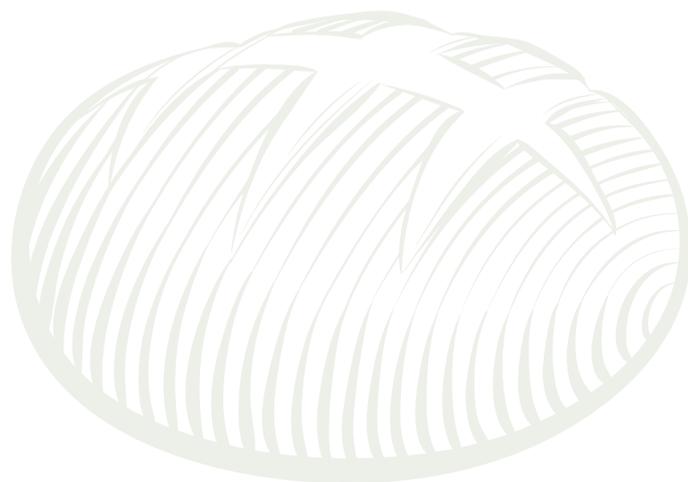
In both Dorset and Clarence community members stressed the importance of improving the skills of people in the community in shopping, growing food, preparing food and storing food.

The research revealed the ways community members coped with food shortages.

Respondents to TFARC's food security survey revealed a range of coping strategies for dealing with food security problems. These included seeking help from family or friends and growing their own fruit and vegetables. In community consultations people also reported that they were preserving food, group buying, shopping for specials and maximizing their use of cheap staple foods.

Other strategies identified through the food security survey included using emergency food relief services, eating cheaper foods and cutting down on non-essentials, missing meals, reducing meal sizes and cutting down on nutritious food items. At least two of these coping strategies (skipping meals and cutting down on nutritious food) would have a negative impact on the quality of the diet of the respondents.

The research found that the major factors that influence whether people are able to provide adequate nutritious food for their households were whether they could afford to purchase to the food, the distance between where they lived and food outlets which sold a range of fair priced healthy food, and whether the local environment provided opportunities to support food security.



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12 Appendices

12.1 Summary of the main healthy food basket surveys in Australia

Sponsoring agency	Contact	Year	Title of survey	Coverage	Objectives
Queensland Health		1998, 2000, 2001, 2004, 2006, 2010	QLD Healthy Food Access Basket (HFAB)	State wide	To assess changes in cost, availability and variety of basic food items and healthy food choices in urban, rural and remote areas of Queensland.
Northern Territory, Department of Health and Families	Turner C	Annually from 1998 to 2011	NT Market Basket (NTMB)	Territory wide	To monitor food cost, availability, variety and quality in remote indigenous community stores in the NT. Collects information on store operation and nutrition policy.
School of Health Science, University of Wollongong	Williams P	2000, 2001, 2003, 2005, 2007.	Illawarra Healthy Food Basket (IHFB)	Illawarra Region of NSW	To monitor the affordability of a basket of healthy food items in the Illawarra region of NSW. To assess trends in food affordability, average income and social welfare benefits.
Monash University, Victoria	Palermo C	2007, 2010	Victorian Healthy Food Basket	Various Local Government Areas (LGAs) across VIC	Modelled on the QLD HFAB and modified to reflect the revised NRVs (NHMRC 2005) and the Victorian population.
Department of Health, Western Australia	Landrigan T, Pollard C	2010	Western Australian Food Access and Cost Survey (WA FACS)	State wide	The first survey in Australia designed to assess the feasibility of a nationally harmonised food price monitoring survey. Includes foods that appear in the NTMB, QLD HFAB and the IHFB and additional food items.

(Adapted from Dept Health, WA, 2010)

12.2 Food items and quantities per household used in the Tasmanian Healthy Food Basket

Food items	Product size	Quantities to meet the nutritional requirements of family members for a fortnight			
		Two parent family	Single parent family	Age pensioner	Single adult
Bread and cereals					
White bread	680g	1.4 loaves	0.7 loaves	0.2 loaves	0.8 loaves
Wholemeal bread	680g	5.8 loaves	3.6 loaves	1.3 loaves	2.3 loaves
Crumpets (rounds 6pk)	300g	3.1 packets	2.2 packets	0.9 packets	0.9 packets
Weet-bix™	750g	1.4 packets	0.9 packets	0.2 packets	0.5 packets
Instant oats	500g	1.5 packets	1.2 packets	0.4 packets	0.4 packets
Pasta	500g	1.7 packets	1.1 packets	0.4 packets	0.6 packets
White rice	1kg	1.4 bags	0.9 bags	0.3 bags	0.6 bags
Instant noodles	85g	9 packets	0.6 packets	2 packets	3 packets
Premium biscuits	250g	1.3 packets	0.8 packets	0.2 packets	0.5 packets
Fruit					
Apple	1kg	5.8 kg	4.3 kg	1.8 kg	1.4 kg
Oranges	1kg	5.7 kg	4.6 kg	1.4 kg	1.1 kg
Bananas	1kg	4.1 kg	2.8 kg	0.9 kg	1.3 kg
Tinned fruit salad, natural juice	450g	9.0 tins	4.9 tins	1.8 tins	3.7 tins
Sultanas	250g	0.84 packets	1.0 packet	0.2 packets	0.4 packets
Orange juice 100%, no added sugar	2L	2.5 L	1.5 L	0.5 L	0.8 L

Food items	Product size	Quantities to meet the nutritional requirements of family members for a fortnight			
		Two parent family	Single parent family	Age pensioner	Single adult
Vegetables, legumes					
Tomatoes	1kg	4.7 kg	2.8 kg	1.1 kg	1.9 kg
Potatoes	1kg	2.6 kg	1.7 kg	0.7 kg	1.0 kg
Pumpkin	1kg	2.7 kg	1.7 kg	0.7 kg	1.0 kg
Cabbage	Half (500g)	3.7 kg	2.8 kg	0.9 kg	0.9 kg
Lettuce	Whole	2.8 kg	1.8 kg	0.8 kg	1.1 kg
Carrots	1kg	3.1 kg	2.2 kg	0.8 kg	0.9 kg
Onions	1kg	1.2 kg	0.85 kg	0.3 kg	0.4 kg
Frozen peas	2kg	1.0 kg	0.7 kg	0.3 kg	0.3 kg
Tinned tomatoes	400g	8.0 tins	6.0 tins	2.0 tins	2.0 tins
Tinned beetroot	450g	0.8 tins	0.4 tins	0.2 tins	0.4 tins
Tinned corn kernels	440g	2.1 tins	1.6 tins	0.6 tins	0.6 tins
Tinned baked beans	420g	9.5 tins	5.7 tins	1.9 tins	3.8 tins
Meat and alternatives					
Fresh bacon, shortcut, rindless	1kg	0.75 kg	0.5 kg	0.2 kg	0.3 kg
Fresh ham	1kg	0.54 kg	0.3 kg	0.12 kg	0.2 kg
Beef mince, regular	1kg	1.1 kg	0.7 kg	0.34 kg	0.3 kg
Lamb chops, forequarter	1kg	0.8 kg	0.4 kg	0.2 kg	0.4 kg
Chicken fillets, skin off	1kg	1.3 kg	1 kg	0.3 kg	0.3 kg
Sausages	1kg	0.9 kg	0.5 kg	0.3 kg	0.4 kg
Tinned tuna (unsat, oil)	425g	2.8 tins	2.1 tins	0.7 tins	0.7 tins
Tinned salmon, pink (water)	210g	2.9 tins	2.1 tins	0.7 tins	0.7 tins
Large eggs (min.50 g, caged)	700g dozen	1.6 boxes	1.2 boxes	0.4 boxes	0.4 boxes

Food items	Product size	Quantities to meet the nutritional requirements of family members for a fortnight			
		Two parent family	Single parent family	Age pensioner	Single adult
Dairy					
Fresh full cream milk	1L	2.0 L	1.5 L	0.5 L	0.5 L
Fresh reduced fat milk	2L	13.8 L	10.4 L	3.0 L	3.4 L
Reduced fat flavoured yoghurt	1kg tub	8.4 kg	6.8 kg	2 kg	1.6 kg
Full fat long life milk	1L	0.6 L	0.4 L	1.1 L	0.14 L
Cheese, block	500g	2.1 blocks	1.2 blocks	0.5 blocks	0.9 blocks
Non-core foods					
Polyunsaturated margarine	500g	1.4 tubs	0.8 tubs	1.1 tubs	0.5 tubs
White sugar	1kg	0.1 kg	0.07 kg	0.03 kg	0.03 kg
Canola oil	500ml	0.6 bottles	0.5 bottles	0.2 bottles	0.2 bottles

(Palermo & Wilson, 2007)

12.3 A sample of studies reviewed to define food outlet categories

Sponsoring agency	Contact	Title	Year	Coverage	Objective
Australia					
Dept of Health and Families, Northern Territory (NT)	Turner C	NT Market Basket (NTMB)	Annually from 1998 – 2011	NT wide	To monitor food cost, availability, variety and quality in remote indigenous community stores in the NT. Collects information on store operation and nutrition policy.
School of Health Sciences, University of Wollongong, New South Wales (NSW)	Williams P	Illawarra Healthy Food Basket (IHFB)	2000, 2001, 2003, 2005, 2007	Illawarra region, NSW	To monitor the affordability of a basket of healthy food items in the Illawarra region of NSW. To assess trends in food affordability as a percentage of average income and social welfare benefits.

Sponsoring agency	Contact	Title	Year	Coverage	Objective
Australia (continued)					
Queensland (QLD) University of Technology Centre for Public Health Research	Turrell G	Brisbane Food Study: A multi-level and spatial investigation of socio-economic differences in food purchasing behaviour.	2003	Brisbane, QLD	To examine the association between area and individual socio-economic status (SES) and food purchasing behaviour.
Depart of Health and Human Services (DHHS), Tasmania (TAS)		Registration of a Food Business S86 Gazettal notice	2003	TAS	To define which food businesses have to register with local government.
Flinders University, South Australia (SA)	Tsang A, Ndung'u M, Coveney J, Odwyer L	Adelaide Healthy Food Basket: A survey on food cost, availability and affordability in five local government areas in metropolitan Adelaide, South Australia	2007	Metro-politan Adelaide SA	To compare the affordability of food in five local areas defined by their SES.
Monash University, Victoria (VIC)	Cocks D	Outer East Community Food Access Research Project	2008	Outer Eastern Suburbs, Melbourne, VIC	To assess the level of food security in the region and use this information to develop recommendations to develop strategic strategies to improve access.
Merri Community Health Service	McCluskey K	Food Security in Moreland – A needs assessment	2009	Moreland, VIC	To improve understanding of the local food supply and other factors which influence food security, and identify at risk groups and potential action.
Queensland (QLD) Health	Sorbello C, Martin C	Bundaberg Community Food Assessment	2009	Brisbane, QLD	Investigate healthy food in three locations within two Health Services Districts.
Queensland Health	Marshall E	Community Food Assessments for Zillmere	2010	Brisbane, QLD	Investigate healthy food in three locations within two Health Services Districts.
Inner South Community Health Service (affiliated with Monash University)	Neff M, Muir L	Deserted in a Land of Prosperity	2010	Melbourne, VIC	Investigated food security status of an inner metro-area.

Sponsoring agency	Contact	Title	Year	Coverage	Objective
Australia (continued)					
Public Health Division Dept Health Western Australia (WA)	Landrigan T, Pollard C	Western Australian Food Access and Cost Survey (FACS)	2010	WA wide	To explore cost as a determinant of food choice in WA and the feasibility for the development of a nationally harmonised system for monitoring food access and cost. The focus is on the food supply aspect of food security, particularly cost, variety, quality and availability.
International					
University of Warwick, United Kingdom (UK)	Dowler E	Measuring Access to Healthy Food in Sandwell	2001	Sandwell, UK	Employed qualitative tools for measuring and mapping food access using GIS and community participatory methods.
Economic Research Service (ERS)	Cohen B	USDA Community Food Security Assessment Toolkit	2002	USA	A tool kit of standardised measurements of food security.
Food Standards Agency, UK	White M	Do 'food deserts' exist? A multi-level, geographical analysis of the relationship between retail food access, socio-economic position and dietary intake	2004	UK	To determine the relationship between dietary intake and socio-economic factors at the individual, household and neighbourhood levels and the retail access to a healthy and affordable diet, and thus determine whether 'food deserts' exist and, if so, to describe their characteristics.
University of Michigan USA	Moore L	Associations of Neighbourhood Characteristics with the location and type of food stores	2006	North Carolina, Maryland and New York USA	Investigated associations between local food environment and neighbourhood race/ethnic and socio-economic composition. This study uses Standard Industrial Classification (SIC) codes to each business developed by the Office of Budget and Management (USA).
University of Canterbury	Pearce J. et al.	A national study of the association between neighbourhood access to fast food outlets and weight of local residents	2009	New Zealand	Examines whether neighbourhood access to fast food outlets is associated with individual diet related health outcomes. This study classifies food businesses as either multi nationals or locally operated.

Sponsoring agency	Contact	Title	Year	Coverage	Objective
International (continued)					
University of Otago, New Zealand (NZ)	Woodham C	Food desert or food swamp? An in-depth exploration of neighbourhood food environments in Eastern Porirua and Whitby	2009	NZ	Explores the food environments in two neighbourhoods and uses the ANGELO (Analysis Grid for Environments Linked to Obesity) tool.



12.4 Tasmanian Food Outlet Audit Tool



Tasmanian Food Access Research Coalition

TASMANIAN FOOD OUTLET AUDIT TOOL

CONTRIBUTING TO THE COMMUNITY FOOD RESOURCE DATABASE

The Food Outlet Audit for the Dorset and Clarence regions is an important research component of the TFARC Project. The Audit will give us detailed information on the location of food outlets and the types of foods available to the local community in each region.

The Food Outlet Audit will provide us with baseline information about people's ability to physically access food in Dorset and Clarence. This will be combined with what we already know about socio-economic demographics and public transport provision in these two areas to provide a more complete picture of the issue of food access in Clarence and Dorset.

The assessment of the number and type of food outlets (including emergency food relief) and the categories of food sold will allow us to assess the accessibility of fresh food for many neighbourhoods in the Dorset and Clarence regions and provide evidence of a need for action if required.

Instructions for Use of Audit Tool

- A list of food outlets has been identified in both Dorset and Clarence (see attached list). Using a recent street map, reconcile the list provided with current maps (highlighted on the street maps). Add any food outlets that are missing from original lists.
- Read through instructions (including the glossary defining food types and the glossary defining Food Outlet categories) carefully to ensure that information is recorded accurately and consistently by all Community Food Researchers.
- On the top right hand side of the audit tool, record the name of the Community Food Researcher and the date the audit is being conducted.
- You will either need to walk the streets of the area you have been allocated or will need to drive or ride your bicycle to identify each food outlet and complete all of the details required.
- Visit each food outlet and record the following information that is required (see p.2 for details).
 - On entering the store introduce yourself to the manager or person in charge for the day.
 - Read the following statement to the manager or person in charge:

"We have received funding to look at food access, availability and affordability in your local area. To help us with this we are looking at the number and type of food outlets in this region including food outlets like yours'. With your permission can I walk around your food premises to determine the types of foods that you have available? This should only take 10-15 minutes"

- If food outlet refuses to be included or you have any major issues with food outlet managers or shop assistants please contact **Sandra Murray from TFARC on ph 03 6324 5493.**

A Instructions for visiting each food outlet and recording the following information

- 1 The name of the food outlet
- 2 The **exact address** of the food outlet. Please note that on the attached list of food outlets the street name listed may not be the street address used by the business. Please make sure when you note the address of each food outlet that you list the correct street name and number.
- 3 The category within which the food outlet falls (i.e. Major Supermarket, Local or Corner Shop). Please use the attached glossary to define which category each food outlet belongs to.
- 4 Go through each individual item on the audit tool and tick the appropriate column to indicate the availability of listed foods (i.e. fried food, sandwiches, hot meals, fruit, vegetables, meat/fish etc). If the item is not available, leave the box blank.

If there is any confusion regarding the classification of a food item into a particular group, please make note of the confusion and how you have classified the food.

- 5 Make any appropriate comments in the row below. This will provide a better picture of the quality of food available and of the shopping strip environment. A simple note is all that is required. Often one sentence will be sufficient (for example: “veg fresh and frozen but mostly canned”).

Observations should be made regarding:

- Whether the food outlet sells a variety of multicultural foods – provide detail on what is sold.
- The variety, quality and price of the goods available.
- Whether fruits/vegetables available are only sold in the canned/frozen varieties or whether the food outlet sells fresh goods.
- Whether fresh meat/fish is available or whether only canned/deli-types meat/fish are available.
- Unusual or particularly limited opening times of food outlet.
- The atmosphere of the shopping strip or any notable features (such as lots of customers/graffiti/many stores closed-shut down).

B Glossary – Defining Food types

Alcohol: Tick this box if alcoholic beverages are for sale in the audited shop.

Bread: Bread available for sale individually. Such as loaves of white/wholemeal /wholegrain bread, flat breads, Turkish bread, rolls, focaccia. Do not include bread only used to make sandwiches on site in this category. This category should only be marked when bread can be bought and taken home to prepare meals.

Breakfast cereal: Packaged breakfast cereals such as Weetbix™ or Cornflakes™. Also include items such as oats and porridge in this category.

Confectionary: lollies, sweet and savoury snack foods

Eggs: Only fresh eggs should be included in this category. Do not include pre-prepared eggs or egg dishes. These should be included in the ‘hot meals’ category under ‘Takeaway’ if applicable.

Fresh foods: Foods that can be prepared as part of meals at home including fruit, vegetables, pasta, rice, other grains etc.

Fried foods: Includes items such as hot chips, fried dim Sims, potato cakes, hamburgers, chicken schnitzels, pizzas.

Fruit: Fresh, dried, frozen or canned fruit. Do not include candied fruit in this category. Please specify whether fresh fruit is available and make a note about whether most of the fruit is fresh, canned, frozen or dried.

Grains: Items such as flour, polenta/corn meal, burgher, oats, couscous. Do not include pre-prepared grains in this category. This should be included in the 'hot meals' category under 'Takeaway'.

Hot meals: Includes items such as pasta dishes, rice and curry/casserole dishes.

Meat/Fish: Fresh meat (such as beef steaks, beef mince, chicken breast, bacon, ham) and fresh or canned fish (such as fish fillets, whole fish, canned tuna, canned salmon). Please make a note about whether most of the meat/fish is fresh, canned, frozen or deli-style (such as ham).

Milk: Only fresh/powdered whole, reduced fat or skim milk should be included in this category. Do not include flavoured milk drinks in this category or sweetened or condensed milks.

Pasta/rice: Dry pasta and rice to be prepared in the home. Do not include pre-prepared rice in this category. This should be included in the 'hot meals' category under 'Takeaway'.

Sandwiches: Pre-prepared or prepared to order sandwiches/rolls/focaccia.

Vegetables: Fresh, canned or frozen vegetables. Please specify whether fresh vegetables are available and make a note about whether most of the vegetables are fresh, canned or frozen.

Yoghurt/cheese: Include in this category all types of cheese/yoghurt in this category.

Take-away Fast foods: Foods that require no further preparation (i.e. ready-to-eat). These include sandwiches, salad rolls, hot pies/pasties, dim sims, hot chips, curries, casseroles and fried food.



C Glossary – Defining food outlets and their categories

Type of food outlet	Operational Definition	Example	Justification
1. Major Supermarket	Mainly engaged in the sale of groceries (fresh foods, canned and packaged foods, dry goods) of non-specialised (conventional) food lines. May contain an in store butcher or baker. The store has five or more registers.	Woolworths, Coles, Supa IGA	The decision to distinguish between supermarket stores based on number of registers not annual turnover was due to the difficulty of obtaining this data.
2. Minor supermarket (grocer)	Mainly engaged in the sale of groceries (fresh food, canned and packaged foods, dry good) of non-specialised (conventional food lines). The store has between two and four registers.	IGA local, local specialty grocers	This group would include independent grocery chains as well as locally owned specialty grocers who stock local produce (fresh and packaged) and whole food (bulk food) stores.
3. Local or Corner store	Mainly engaged in the sale of a limited line of groceries that generally includes milk, bread and canned and packaged foods and may sell limited fresh lines such as meat, vegetables and fruit. This store may also provide a limited range of fast food lines such as burgers or fish and chips. The store has one to two registers and does not provide fuel.	IGA express	Would be named as Convenience store in QLD/UK/USA or Milk Bar in Vic or 7/11.
4. Local or Corner store with fuel pump	Mainly engaged in retailing automotive fuels (e.g., petrol, diesel, gas) in combination with some local or corner store items such as milk, bread and canned items.	Coles Express	In Tasmania particularly in rural areas some of these outlets may sell local fruit and vegetables.
5. Fish-monger or fresh sea food store	Mainly engaged in the sale of fresh seafood. Includes wholesale stores with direct to public sales and takeaway stores also providing a range of fresh seafood.		These outlets would sell predominantly fresh sea produce and no cooked fish (e.g. deep fried fish) but may include a 'road store' selling fresh fish

<p>6. Butcher store (includes poultry)</p>	<p>Mainly engaged in the sale of fresh meat and poultry. Includes wholesale stores with direct to public sales.</p>	<p>Local butcher, Swift wholesalers</p>	<p>In Tasmania most would sell a both poultry and meat so no distinction made</p>
<p>7. Bakery and cake shop</p>	<p>Mainly engaged in the sale of bread, biscuits, cakes, pastries or other flour products with or without packaging. Some may have a small dine-in service.</p>	<p>Banjo's, local bake house, bakery café</p>	<p>In Tasmania most outlets that would fall into this category would sell a mixture of bread, pastry and cakes</p>
<p>8. Fruit and vegetable shops, markets, mobile fruit and vegetable van.</p>	<p>Mainly engaged in the sale of fresh fruit and vegetables. Includes wholesale stores with direct to public sales. Is open regularly.</p>	<p>Young's vegie shed, Chung's, local fruit and vegetable store,</p>	<p>This would include all types of shops including mobile fruit and vegetable vans which regularly follow a set weekly route. Does not include road side van sales which operate infrequently and seasonally.</p>
<p>9. Local farm gate sales</p>	<p>Mainly engaged in the sale of fresh fruit and vegetables and eggs at the entrance to the farm.</p>	<p>The local farmer who has opened is farm to the public to buy produce.</p>	<p>This would include farm gate sales which operate all year round. Does not include farm gate sales which operate infrequently and seasonally.</p>
<p>10. Takeaway food outlets - National franchise</p>	<p>Mainly engaged in the preparation and sale of 'meals' and snacks and that are ready for immediate consumption. Does not include those only selling donuts and ice-cream. Table service is not provided and the meal can be eaten on site, taken away or delivered. There is a standard menu and payment is made before the food is eaten. This is a franchise/chain store with food sold in branded packaging</p>	<p>McDonalds, Pizza Hut, Domino's, KFC, Hungry Jack's, Subway</p>	

<p>11. Takeaway food outlet - independent locally owned</p>	<p>Mainly engaged in the preparation and selling of meals, snacks and beverages which are sold as takeaway. A standard menu is used and payment is required before food is available. Includes pizza shops and fish & chip shops but doesn't include those selling only donuts and ice-cream. Table service is not provided and the meal can be eaten on site or taken away or delivered. The shop is not a franchise store and food is not usually sold in branded packaging.</p>	<p>Local take-away store</p>	
<p>12. Restaurant or Cafes with sit down service</p>	<p>Mainly engaged in the preparation and sale of meals and light refreshments for consumption on the premises. Table service is provided in which customers generally order and are served while seated. These shops may provide this type of food services in combination with selling alcoholic beverages.</p>		
<p>13. Café or Coffee shop or Tea Room with no table service</p>	<p>Serves a range of food lines including hot drinks, doughnuts, hot dogs, chips, ice cream, meals, light snacks. Locally owned business or franchise. Customers generally order at the counter and the meal is delivered to their table or picked up at counter. No alcohol is sold.</p>	<p>Gloria Jeans, Hudson's Coffee Wendy's, Bunning's</p>	
<p>14. Pub/Hotel/club dining areas</p>	<p>Customers generally order at the counter and the meal is delivered to their table. Alcohol is available.</p>	<p>Local pub or RSL club</p>	
<p>15. Delicatessen</p>	<p>Mainly engaged in the sale of specialty packaged or fresh products such as cured meats and sausage, pickled vegetables, dips, breads and olives. May also provide prepared meals to cook or heat at home.</p>	<p>May also be called a providore or deli</p>	
<p>16. Multicultural grocer</p>	<p>Mainly engaged in selling culturally specific foods which could include</p>	<p>Asian grocer</p>	

	some fresh lines.		
17. Specialty Confectionary or Chocolate store	Mainly engaged in selling specialty lines such as chocolate, nuts, ice-creams	Renown, Krispie Cream Doughnuts, Darrell Lea	
18. Farmers Market	A predominantly fresh food market that operates regularly within a community. Stall holders can be local farmers, growers or producers of value added products such as jams and sauces.	Evandale Market, Esk Market, Salamanca Market	
19. Discount Shops	A variety store selling a range of non-food products and some food lines including canned and packaged goods with some limited fresh lines such as bread and milk.	Chickenfeed, Kmart, Big W	
20. Food Cooperatives	A group organised to buy groceries or fresh food directly from a wholesaler. Group members order in bulk and divide their order among themselves.		
21. Emergency Food Relief - food parcels	A hamper or package of food which may include some fresh food.	Neighbourhood House, Salvation Army, City Mission	
22. Emergency Food Relief - free or low cost meal	An organisation supplying low cost meals in a community setting or mobile food van.	Local church, Loui's Food Van	This may also include 'Eating with Friends' programs, breakfast clubs, community lunches

23. Delivered Meal Services	Community based organisations providing a subsidised delivered meal service.	Red Cross, Meals on Wheels (MOW)	
24. Alcohol outlets	Stores selling predominantly alcoholic beverages for taking away.	9/11, BWS, independent	
<u>EXCLUSIONS</u>			
25. Food vans operating on an occasional basis at community and sporting events			
Does not include emergency food relief services run by community organisations. Too difficult to quantify and is presumed people would not rely on these as a routine source of food			
26. Childcare, school canteens, institutional care facilities, workplace canteens			
Not within scope of this research			
27. Online supermarket sale services			
Difficult to determine how best to include this service within the methodology planned for this study			
28. Seasonal Mobile fruit and vegetable van, farm gate sales			
Due to the sporadic and seasonal nature of these operations these were not included in this study.			

D Tasmanian Food Outlet Audit Tool

Name of shopping strip/ suburb / town / area:	
Community Food Researcher Name:	Date of Audit:
Name of outlet manager Street Address of Food Outlet	Food Outlet Category <i>(refer to glossary C for detailed information)</i> Example: 1. Major Supermarket OR 14. Delicatessen OR 19. Discount store
Food types available for sale or as emergency relief tick ✓ if the item is available, or cross x if it is <i>(refer to glossary B for detailed formation)</i>	
Takeaway Fast Food	Fresh Foods
Fried food	Fruit
Sandwiches / salad roll	Vegetables
Hot meals	Meat, Fish, Chicken
	Bread
	Pasta, Rice, Grains
	Breakfast Cereal
	Eggs
	Milk
	Yoghurt, Cheese
	Example Confectionary

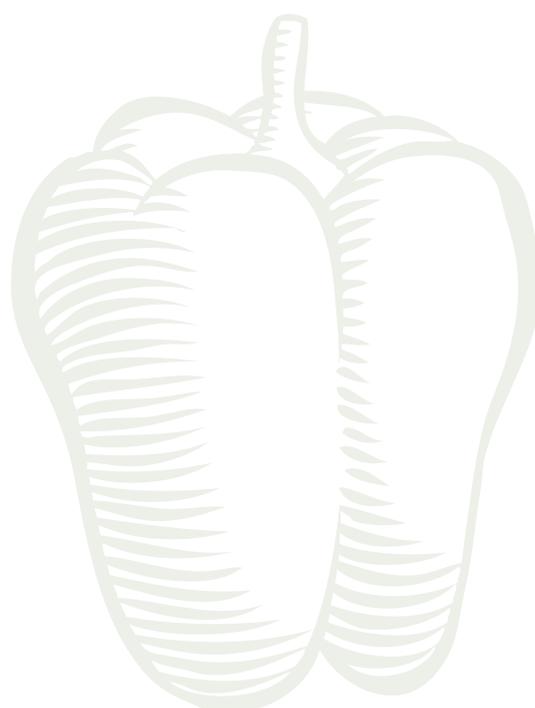
D Tasmanian Food Outlet Audit Tool

Name of shopping strip/ suburb / town / area:			
Community Food Researcher Name:		Date of Audit:	
Name of outlet manager Street Address of Food Outlet	Food Outlet Category (<i>refer to glossary C for detailed information</i>)	Food types available for sale or as emergency relief tick ✓ if the item is available, or cross x if it is (<i>refer to glossary B for detailed formation</i>)	
	Example:	Takeaway Fast Food	Fresh Foods
		Other	

1. Major Supermarket OR 15. Delicatessen OR 19. Discount store	Fried food		Comments		Comments		Comments	
	Sandwiches / salad roll							
	Hot meals							
	Fruit							
	Vegetables							
	Meat, Fish, Chicken							
	Bread							
	Pasta, Rice, Grains							
	Breakfast Cereal							
	Eggs							
	Milk							
	Yoghurt, Cheese							
	Example Confectionary							

12.5 Selection of studies assessing quality of fresh fruits and vegetables

Sponsoring agency	Year	Title
Community Nutrition Unit (CNU), Department of Health and Human Services, Tasmania	1998	Tasmanian food price, availability and quality survey.
Tropical Public Health Unit, Queensland Health	1999	Healthy Food Access Basket (HFAB) manual 1998
Department of Human Services, South Australia	2000	Food supply in rural South Australia: A survey on food cost, quality and variety.
The Cancer Council of New South Wales (CCNSW)	2007	NSW Healthy Food Basket: Cost, Availability and Quality Survey
Herzfeld M & McManus A	2007	In search of a method to assess the availability, quality and price of vegetables and fruit
Department of Health, Western Australia (Dept Health, WA)	2010	Western Australian Food Access and Cost Survey (WA FACS)



12.6 Tasmanian Healthy Food Basket Tool



Tasmanian Food Access Research Coalition

TASMANIAN HEALTHY FOOD BASKET TOOL

(This survey tool contains 3 sections which must all be completed)

Date of Survey:	
Collector Name:	
Email:	
Phone:	
Time Taken for this survey:	

Food Outlet Name:	
Food Outlet Street Address:	
Suburb / Post Code:	
Food Outlet Category:	

D. Cost of Non-Fresh Food Items

For this section walk through the store and for each of the items:

- Record the price and weight of the **least expensive** item for each food listed. You should use the **non-generic brand only** (e.g. Tip Tops, Uncle Toby's, and Nestle). **Don't include any supermarket home brands unless there are no non-generic brands available**
- Fill in the price and brand name. 'Specials' prices can be listed but note the original full price as well.
- The table includes the unit of measure that should be selected for each food. For example, potatoes are measured in kilograms; eggs are measured by the dozen.
- If the size is not available, price the next smallest package size and fill the size in grams or litres into the default size column.
- It is important that the prices recorded are for the specific food items in the table with no substitutions.
- If a food item is unavailable on the day that you visit the store but is usually in stock, check with the manager for the normal price.
- If a food is never in stock, mark the pricing box with an NA (for not available). **If a food is on sale, place an 'S' next to the price.**

FOOD ITEM	IDEAL PRODUCT SIZE	ACTUAL SIZE (if it differs from ideal size)	BRAND	USUAL UNIT PRICE OF FOOD (not sale price) \$
BREADS AND CEREALS				
White bread (standard size)	680g			
Wholemeal bread	680g			
Crumpets (rounds, 6pk)	300g			
Weetbix™ or similar (e.g. Vitabrits™)	750g			
Instant oats	500g			
Pasta	500g			
White rice	1kg			
Instant noodles	85g			
Premium™ biscuits or similar (OR Salada™ OR SAO™)	250g			

FRUIT (Tinned, Juice and Dried)				
Tinned fruit salad, natural juice	450g			
Sultanas	250g			
Orange juice 100%, no added sugar (shelf/longlife/UHT, not refrigerated juice)	2L			
VEGETABLES AND LEGUMES (Frozen and Tinned)				
Frozen peas	1kg			
Tinned tomatoes	400g			
Tinned beetroot	450g			
Tinned corn kernels	440g			
Tinned baked beans	420g			
MEAT AND MEAT ALTERNATIVES				
Fresh bacon, shortcut, rindless	1kg			
Fresh ham	1kg			
Beef mince, regular	1kg			
Lamb chops, forequarter	1kg			
Chicken fillets, skin off	1kg			
Sausages	1kg			
Tinned tuna (in unsaturated oil)	425g			
Tinned Salmon, pink (in water)	210g			
Large eggs (minimum size 50 g, caged)	700g dozen			

DAIRY				
Fresh full cream milk	1L			
Fresh reduced fat milk	2L			
Reduced fat flavoured yoghurt	1kg tub			
Full fat long life/UHT milk	1L			
Cheese, block	500g			
NON-CORE FOODS				
Polyunsaturated margarine	500g			
White sugar	1kg			
Canola oil	500ml			
EXTRAS (LESS HEALTHY FOOD ITEMS)				
Chocolate Bar (Mars™)	53g			
Cola Drink (Coke™)	355ml			

Well done, only 2 tables to go!!

In this section we want to find out what fruit and vegetables are available in shops.

- a) 33 fruits and vegetables are listed. In the 'present' column, tick ✓ if the item is available, or cross ✗ if it is unavailable.
- b) In the 'number of varieties' column, the number of available types of this food should be written.

For example, a supermarket has the following apples: Granny Smith, Fuji and Pink Lady.

Fruit/Vegetable	Present	Number of varieties
Apples	✓	3

For example, if there is no broccoli in the food outlet:

Broccoli	✗	
----------	---	--

Please complete the following Availability table:

Vegetable	Present	Number of varieties
1. Broccoli		
2. Cabbage		
3. Capsicum		
4. Carrot		
5. Cauliflower		
6. Celery		

7. Cucumber		
8. Eggplant		
9. Green bean		
10. Lettuce		
11. Mushroom		
12. Onion		
13. Potato (not sweet potato)		
14. Pea		
15. Pumpkin		
16. Swede		
17. Sweet corn		
18. Sweet Potato		
19. Tomato		
20. Turnip		
21. Zucchini		

Fruit	Present	Number of varieties
22. Apple		
23. Banana		
24. Grape		
25. Kiwi fruit		
26. Orange		
27. Mandarin		
28. Cherries		
29. Peach		
30. Pear		
31. Rock melon		
32. Strawberry		
33. Watermelon		

Well done, only 1 table to go!

C. Quality and Cost of Fresh Fruit and Vegetables

In this section we want to assess the quality of 10 fruits and vegetables. Record the price of the CHEAPEST and rate their quality in this section.

- Use the price per kilogram (kg).
- If product is only priced by unit (e.g. lettuce \$1.20 each) weigh one, and write the price per unit and the weight (e.g. Cabbage \$2.99 each 1.6 kg).
- If there is no scale at the food outlet, describe the item, for example, whether it is a half or a whole cabbage
- If items are not available, write 'N/A' in the price/kg box.

Rate the quality of each fruit and vegetable based on whether all, most, half, some, or few of that item on display were good or not (not aged, bruised or mouldy). If the item scores 'some' or 'few', then identify the **next cheapest type of that item which is of a better quality** (i.e. a score of "all", "most" or "half").

For example, if the cheapest apples are Granny Smith apples, however the apples on display are very aged and only "some" are good this is how you would score it.

Cheapest Product	Price per kg \$	Unit weight (if applicable)	Quality Assessment (tick box)				
			Please give an overall rating on the quality of fruits and vegetables based on their age, bruising or mould.				
			All good	Most good	Half good	Some good	Few good
apple	\$3.49					✓	

You would then need another row to be completed with the next cheapest type of apple until at least 'half' of the displayed apples are good. There were Fuji apples for sale, which were 'mostly' good at \$4.20 per kg.

apple	\$4.20			✓			
-------	--------	--	--	---	--	--	--

Now continue on to the next table and complete the Quality Table

Please complete the following Quality Table.

Cheapest Product	Price per kg \$	Unit weight (if applicable)	Quality Assessment (tick box)				
			Please give an overall rating on the quality of fruits and vegetables based on their age, bruising or mould.				
			All good	Most good	Half good	Some good	Few good
VEGETABLES							
1. Cabbage (head)							
2. Carrot							
3. Lettuce (head)							
4. Onion							
5. Potato							
6. Pumpkin							

7. Tomato							
FRUIT							
8. Apple							
9. Banana							
10. Orange							

This is the END of the survey.

Thank you for your time and effort attention spent in completing these tasks

12.7 Tasmanian Household Food Security Survey



Tasmanian Food Access Research Coalition

TASMANIAN HOUSEHOLD FOOD SECURITY SURVEY

Thank you for your interest in our survey which is designed to find out about the food you eat at home.

The Tasmanian Food Access Research Coalition is a project designed to explore the availability, accessibility, affordability of safe and healthy foods in Dorset and Clarence as well as people's awareness about nutritious food items, which will help enhance food security in the rural area of Tasmania and in Australia as a whole.

We are asking different people living in Dorset and Clarence to complete our survey to give us a better idea of how people manage to get food to feed themselves and their families. The more people participating in the survey, the more representative the survey results will be.

- This survey will take less than 10 minutes to complete.
- This survey is completely anonymous. We don't collect any information that can identify you, such as names or addresses.

You can stop the survey at any time if you don't feel comfortable answering the questions. Any information you have provided up to that point will not be used in our results.

- Participants who return the survey within 2 weeks of receiving the survey will be eligible for a lucky draw of a voucher of \$50. Information about the draw can be found on the final page of the survey.

If you have any queries about the survey or the results, please contact:

Contact Persons:

Clarence

Ann Hughes
Policy & Research Officer
Anglicare Tasmania
Level 10, 65 Murray Street
GPO Box 1620, HOBART, TAS 7001
Phone (03) 6213 3567
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Dorset

Gretchen Long
Primary Health Care Coordinator
17 Cameron Street, NESM Hospital
Scottsdale, TAS 7260
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E-mail:
primaryhealth.dorset@dhhs.tas.gov.au

Part A: About You (For all tick boxes , please only tick (✓) one response.)

Q1.	What is your age?	
Q2.	Are you?	
	<input type="checkbox"/> Male	<input type="checkbox"/> Female
Q3.	How many people including you, live in your house?	
Q4.	What is your highest year of school completed?	
	<input type="checkbox"/> Year 8 or below	<input type="checkbox"/> Year 11 or equivalent
	<input type="checkbox"/> Year 9 or equivalent	<input type="checkbox"/> Year 12 or equivalent
	<input type="checkbox"/> Year 10 or equivalent	
Q5.	Since leaving school have you completed any other educational qualifications?	
	<input type="checkbox"/> Yes	<input type="checkbox"/> No <i>(Go to Q 7)</i>
Q6.	What is your highest level of education?	
	<input type="checkbox"/> Certificate (not further defined)	<input type="checkbox"/> Bachelor Degree
	<input type="checkbox"/> Certificate I & II	<input type="checkbox"/> Graduate Diploma OR Graduate Certificate
	<input type="checkbox"/> Certificate III & IV	<input type="checkbox"/> Post Graduate Degree
	<input type="checkbox"/> Apprenticeship	<input type="checkbox"/> Other, please specify:
	<input type="checkbox"/> Diploma OR Advanced Diploma	_____

Q7.	What is your current employment status?	
	<input type="checkbox"/> Not in the labour force <input type="checkbox"/> Unemployed – looking for part time work <input type="checkbox"/> Unemployed – looking for full time work	<input type="checkbox"/> Employed – away from work <input type="checkbox"/> Employed – work part time <input type="checkbox"/> Employed – work full time <input type="checkbox"/> Employed – casual <input type="checkbox"/> Other, please specify: <hr/>
Q8.	What is the gross family income per week?	
	(Income includes pension, Centrelink benefits or retirement funds)	
	<input type="checkbox"/> Negative / Nil income <input type="checkbox"/> \$1 – \$149 <input type="checkbox"/> \$150 – \$249 <input type="checkbox"/> \$250 – \$349 <input type="checkbox"/> \$350 – \$499 <input type="checkbox"/> \$500 – \$649 <input type="checkbox"/> \$650 – \$799 <input type="checkbox"/> \$800 – \$999	<input type="checkbox"/> \$1000 – \$1199 <input type="checkbox"/> \$1200 – \$1399 <input type="checkbox"/> \$1400 – \$1699 <input type="checkbox"/> \$1700 – \$1999 <input type="checkbox"/> \$2000 – \$2499 <input type="checkbox"/> \$2500 – \$2999 <input type="checkbox"/> \$3000 or more <input type="checkbox"/> I do not wish to answer this question
Q9.	What is the postcode of where you live?	
Q10.	What is the name of the area / township / suburb where you live?	
Q11.	What is the postcode / area of where you shop for most of your food?	
Q12.	What is the name of the area / township where you shop for most of your food?	

Part B: Food Security

Q13. How often do you shop on-line for any of your food?

Never

Weekly

Fortnightly

Monthly

Other, please specify:

Q14. Which type of food shop do you visit the most? *(Please list three only.)*

(this includes the supermarket, corner shop, local vegetable shop, local fruit and vegetable markets, butcher, fish shop and bakery)

Shop 1 _____

Shop 2 _____

Shop 3 _____

Q15. For shop 1, as you have listed in Q 14 please answer the following questions?

Shop 1

a) What area / township / suburb is this located in?

b) How far do you travel one way to the nearest kilometre (km) to this shop?

Less than 1 km

1 km to less than 5 km

5 km to less than 10 km

10 km to less than 20 km

20 km to less than 30 km

30 km to less than 40 km

40 km to less than 50 km

50 km or more

c) How do you usually get to this shop?

Walk

Motorised buggy

Drive/ driven

Taxi

Public transport

Community transport

Other, please specify:

d) How often do you go to this shop?	
<input type="checkbox"/> Daily <input type="checkbox"/> 2 – 3 times per week <input type="checkbox"/> Weekly	<input type="checkbox"/> Fortnightly <input type="checkbox"/> Monthly <input type="checkbox"/> Other, please specify: <hr/>
e) What is the main reason you visit this shop?	
<input type="checkbox"/> Close to where I live <input type="checkbox"/> Close to where I work <input type="checkbox"/> It offers many choices	<input type="checkbox"/> It is good value for money <input type="checkbox"/> It is accessible to public transport <input type="checkbox"/> Other, please specify: <hr/>
Q16.	For shop 2, as you have listed in Q 14 please answer the following questions?
<u>Shop 2</u>	
a) What area / township / suburb is this located in?	
b) How far do you travel one way to the nearest kilometre to this shop?	
<input type="checkbox"/> Less than 1 km <input type="checkbox"/> 1 km to less than 5 km <input type="checkbox"/> 5 km to less than 10 km <input type="checkbox"/> 10 km to less than 20 km	<input type="checkbox"/> 20 km to less than 30 km <input type="checkbox"/> 30 km to less than 40 km <input type="checkbox"/> 40 km to less than 50 km <input type="checkbox"/> 50 km or more
c) How do you usually get to this shop?	
<input type="checkbox"/> Walk <input type="checkbox"/> Motorised buggy <input type="checkbox"/> Drive/ driven <input type="checkbox"/> Taxi	<input type="checkbox"/> Public transport <input type="checkbox"/> Community transport <input type="checkbox"/> Bus <input type="checkbox"/> Other, please specify: <hr/>

d) How often do you go to this shop?	
<input type="checkbox"/> Daily <input type="checkbox"/> 2 – 3 times per week <input type="checkbox"/> Weekly	<input type="checkbox"/> Fortnightly <input type="checkbox"/> Monthly <input type="checkbox"/> Other, please specify: <hr/>
e) What is the main reason you visit this shop?	
<input type="checkbox"/> Close to where I live <input type="checkbox"/> Close to where I work <input type="checkbox"/> It offers many choices	<input type="checkbox"/> It is good value for money <input type="checkbox"/> It is accessible to public transport <input type="checkbox"/> Other, please specify: <hr/>
Q17.	For shop 3, as you have listed in Q 14 please answer the following questions?
Shop 3	
a) What area / township / suburb is this located in?	
b) How far do you travel one way to the nearest kilometre to this shop?	
<input type="checkbox"/> Less than 1 km <input type="checkbox"/> 1 km to less than 5 km <input type="checkbox"/> 5 km to less than 10 km <input type="checkbox"/> 10 km to less than 20 km	<input type="checkbox"/> 20 km to less than 30 km <input type="checkbox"/> 30 km to less than 40 km <input type="checkbox"/> 40 km to less than 50 km <input type="checkbox"/> 50 km or more
c) How do you usually get to this shop?	
<input type="checkbox"/> Walk <input type="checkbox"/> Motorised buggy <input type="checkbox"/> Drive/ driven <input type="checkbox"/> Taxi	<input type="checkbox"/> Public transport <input type="checkbox"/> Community transport <input type="checkbox"/> Other, please specify: <hr/>

d) How often do you go to this shop?	
<input type="checkbox"/> Daily <input type="checkbox"/> 2 – 3 times per week <input type="checkbox"/> Weekly	<input type="checkbox"/> Fortnightly <input type="checkbox"/> Monthly <input type="checkbox"/> Other, please specify: <hr/>
e) What is the main reason you visit this shop?	
<input type="checkbox"/> Close to where I live <input type="checkbox"/> Close to where I work <input type="checkbox"/> It offers many choices	<input type="checkbox"/> It is good value for money <input type="checkbox"/> It is accessible to public transport <input type="checkbox"/> Other, please specify: <hr/>
Q18.	Do you find it difficult to get to and from shops to buy food?
<input type="checkbox"/> Yes	<input type="checkbox"/> No (<i>Go to Q 20</i>)
Q19.	Why is it difficult for you to get to and from shops to buy food? (<i>Please tick all that apply</i>)
<input type="checkbox"/> Lack of private transport <input type="checkbox"/> Lack of public transport <input type="checkbox"/> I have physical limitations	<input type="checkbox"/> Petrol is expensive <input type="checkbox"/> Other, please specify: <hr/>
Q20.	In the last 6 months, which type of shop or market have you mainly visited to get your fruit and vegetables? (<i>Please write the main one only</i>) (This includes supermarkets, local vegetable stores and local fruit and vegetable markets, farm gate sales and farmers market)
Q21.	In the last 6 months, which shop or market have you mainly visited to get your dairy products? (<i>Please write the main one only</i>) (This includes supermarkets, corner stores or delicatessens)

Q22. In the last 6 months, which shop have you mainly visited to get your fish and meat? *(Please write the main one only)*

(This includes supermarkets, butchers and fish shops)

Q23. In the last 6 months, which shop have you mainly visited to get your breads? *(Please write the main one only)*

(This includes supermarkets and bakeries)

Q 24 – Q 27 refer to nutritious foods

Nutritious foods are basic or staple foods and include bread, cereals, grains, rice, fruits, vegetables, legumes (kidney beans, lentils, etc.) nuts, red meat, fish, chicken, eggs, milk, yoghurt and cheese.

Q24. How often do you eat the following nutritious food?

	Daily	2-3 times per week	Weekly	Fortnightly	Monthly	Quarterly	Never
a) Fruits, vegetables (tinned, fresh or dried)	<input type="checkbox"/>						
b) Meat, chicken, fish, nuts, legumes	<input type="checkbox"/>						
c) Eggs, milk, cheese & yoghurt	<input type="checkbox"/>						
d) Bread, cereals, grains	<input type="checkbox"/>						

Q25. How often do you buy the following nutritious food?

	Daily	2-3 times per week	Weekly	Fortnightly	Monthly	Quarterly	Never
a) Fruits, vegetables (tinned, fresh or dried)	<input type="checkbox"/>						
b) Meat, chicken, fish, nuts, legumes	<input type="checkbox"/>						
c) Eggs, milk, cheese & yoghurt	<input type="checkbox"/>						
d) Bread, cereals, grains	<input type="checkbox"/>						

Q26.	What stops or limits you from buying nutritious foods? <i>(Please tick all that apply)</i>	
	<input type="checkbox"/> Money spent in other areas <input type="checkbox"/> Unemployment in immediate family <input type="checkbox"/> Off pay week	<input type="checkbox"/> Nutritious foods are not available <input type="checkbox"/> Nutritious foods are too expensive <input type="checkbox"/> Other, please specify: <hr/>
Q27.	What would make it easier for you to make sure there is always enough nutritious food to eat?	
	<input type="checkbox"/> Nothing – there is always enough <input type="checkbox"/> More transport options <input type="checkbox"/> Opportunities to learn how to grow food <input type="checkbox"/> More food choices in local shops	<input type="checkbox"/> More community eating opportunities <input type="checkbox"/> Knowing ways to buy affordable food <input type="checkbox"/> Other, please specify: <hr/>
Q28.	If foods you wish to buy are not available in the area in which you usually shop, what would you do?	
	<input type="checkbox"/> Go out of usual shopping area (travel to another area) <input type="checkbox"/> Order on-line for home delivery	<input type="checkbox"/> I go without <input type="checkbox"/> Other, please specify: <hr/>
Q29.	On average how much money do you spend on food shopping each week?	
Q30.	Describe how you make your food budget go further?	
Q31.	In the last 12 months was there any time you could not buy nutritious foods because of shortage of money?	
	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Q32.	In the last 12 months have members of your house ever gone without food because of shortage of money?	
	<input type="checkbox"/> Yes	<input type="checkbox"/> No (<i>Go to Q 38</i>)
Q33.	How often have you run out of the nutritious foods in the past 12 months?	
	<input type="checkbox"/> Weekly <input type="checkbox"/> Fortnightly <input type="checkbox"/> Monthly	<input type="checkbox"/> 3 – 4 times per year <input type="checkbox"/> Once in the year <input type="checkbox"/> Other, please specify: <hr/>
Q34.	Have you ever used emergency food relief services when you have run out of the nutritious foods?	
	(Emergency food relief includes free or cheap meal programs, food vouchers or food parcels)	
	<input type="checkbox"/> Yes	<input type="checkbox"/> No (<i>Go to Q 36</i>)
Q35.	How often do you use emergency food relief services?	
	<input type="checkbox"/> Weekly <input type="checkbox"/> Fortnightly <input type="checkbox"/> Monthly	<input type="checkbox"/> 3 – 4 times per year <input type="checkbox"/> Once in the year <input type="checkbox"/> Other, please specify: <hr/>
Q36.	What are your main reasons for not using emergency food relief services?	
	<i>(Please tick all that apply)</i>	
	<input type="checkbox"/> Unaware of services in the area <input type="checkbox"/> The food is not suitable for me <input type="checkbox"/> The food is culturally inappropriate <input type="checkbox"/> I do not have transport to get to the service	<input type="checkbox"/> I have other supports such as family or friends <input type="checkbox"/> Other, please specify: <hr/>

<p>Q37.</p>	<p>If there are occasions when you are running low on food, how do you manage if you do not use emergency food relief?</p> <p><i>(Please tick all that apply)</i></p>	
	<p><input type="checkbox"/> Skip meals</p> <p><input type="checkbox"/> Reduce size of meals</p> <p><input type="checkbox"/> Get help from family / friends</p> <p><input type="checkbox"/> Eat cheaper foods</p> <p><input type="checkbox"/> Cut down on non-essentials (fast food takeaway, snack food or meals out)</p>	<p><input type="checkbox"/> Cut down on nutritious food items (such as meat, fish, dairy, vegetables or fruit)</p> <p><input type="checkbox"/> Grow my own fruit and vegetables</p> <p><input type="checkbox"/> Other, please specify:</p> <p>_____</p>
<p>Q38. Do you buy take away fast foods?</p> <p>(This includes burgers, fish & chips, pizza or fried chicken from recognised national or international chains as well as locally operated independent outlets)</p>		
	<p><input type="checkbox"/> Yes</p>	<p><input type="checkbox"/> No <i>(Go to Q 41)</i></p>
<p>Q39.</p>	<p>Why do you buy take away fast food?</p>	
	<p><input type="checkbox"/> Convenient</p> <p><input type="checkbox"/> Cheap</p> <p><input type="checkbox"/> Tastier</p>	<p><input type="checkbox"/> Family request / demand</p> <p><input type="checkbox"/> As a treat</p> <p><input type="checkbox"/> Other, please specify:</p> <p>_____</p>
<p>Q40. How often do you buy take away fast food?</p>		
	<p><input type="checkbox"/> Daily</p> <p><input type="checkbox"/> 2 – 3 times per week</p> <p><input type="checkbox"/> Weekly</p>	<p><input type="checkbox"/> Fortnightly</p> <p><input type="checkbox"/> Monthly</p> <p><input type="checkbox"/> Other, please specify:</p> <p>_____</p>
<p>Q41.</p>	<p>Why don't you buy take away fast food?</p>	

Q42.	When you shop, do you ever use the food label information listed on the food packet?	
	<input type="checkbox"/> Yes	<input type="checkbox"/> No (<i>Go to Q 44</i>)
Q43.	Which food label information do you use? <i>(Please tick all that apply)</i>	
	<input type="checkbox"/> Nutrition Information Panel (NIP) <input type="checkbox"/> List of Ingredients <input type="checkbox"/> Heart Foundation Tick	<input type="checkbox"/> Glycaemic GI symbol <input type="checkbox"/> Other, please specify: <hr/>
Q44.	Is there any other comment you would like to share with us? <i>(Please write on the lines)</i>	

Thank you for your time, you have completed the questionnaire.

Lucky Draw

Your opinions and input are very important to this survey, which will help enhance food security in your area, which is to improve the availability, accessibility and affordability of safe and healthy food. To thank you for your participation, we are offering a lucky draw to give out a A\$50 gift voucher. To be eligible for the lucky draw, please:

- Complete your personal details below.
- Detach this page from the questionnaire and put this page in the confidential envelope provided.
- Put the sealed confidential envelope and the completed questionnaire in the reply paid addressed envelope provided and mail them to us by _____. The sealed confidential envelope will be processed separately to protect your confidentiality.

Good Luck!

Name: (Mr / Mrs / Ms / Miss)

Address:

Postcode:

Phone:

Email:

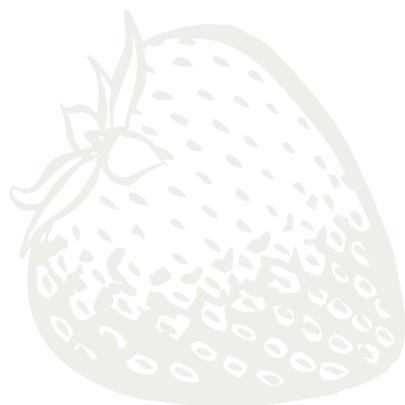
12.8 Sample list of questions used community consultations

Dorset community forums

- 1 We are very interested to hear why you were inspired to be involved this evening?
- 2 What are the first things you think of when you hear the term 'food access' or 'food security'? (**Awareness question**)
- 3 What influences the food choices you make when you go shopping? (**Availability & affordability question**) We felt this question will generate good discussion around what is available and what is affordable.
- 4 What do you perceive as the issues/barriers that people in the community have to accessing nutritious affordable food? What would be the top 3? (**Access question**) We felt this question will generate good discussion about access concerns and thoughts.
- 5 What do you think as a community can realistically happen to overcome these issues in the immediate, medium and long term?

Clarence community consultations

- 1 What influences the food choices you make when you go shopping?
- 2 What is your idea of good food?
- 3 What do you think of when we say 'healthy eating'?
- 4 How do you decide where to shop?
- 5 What things make it harder for you to get good food?
- 6 What things make it easier for you to get healthy food?
- 7 Are you satisfied with the types/selections of foods you can regularly get? Why or why not?
- 8 How do you manage for food when things are really tight?
- 9 What factors do you think directly or indirectly affect your access to fresh, healthy foods? (Possible areas – income, gender, age, health, where I live, cooking skills, healthy diet awareness, social status, ethnic background – others?)
- 10 What ideas do you have that could help make good food
 - easier to get/ more accessible/ affordable / available
 - for you and your family
 - for your community



12.9 Letter to food outlets

Dear Food Outlet Owner/Manager

We are writing to let you know about community research to be undertaken in the Clarence municipality and invite you to participate.

A group of organisations called the Tasmanian Food Access Research Coalition has received funding from the Tasmanian Food Security Council to undertake a food product availability and pricing survey of a list of 'everyday' foods. We plan to survey all food outlets including supermarkets, convenience stores and petrol stations across both Dorset and Clarence municipalities. If all food outlets are prepared to join in we will have a much more robust and useful study.

This valuable data will support a larger project that aims to help us better understand whether local residents are able to access healthy and affordable food in the areas that they live. We know that in a Tasmanian Population Health Survey in 2009 one in twenty or 5% of the adults surveyed said that at some time in the previous 12 months they had run out of food and couldn't afford to buy more.

The information we collect from all food outlets combined with information on public transport provision and demographic information will provide a more complete picture of the issue of food access in Dorset and Clarence. At no time during data collection, analysis and preparation of the final report will the food prices or other specific information collected from your food outlet be publicly available.

One or two people will visit your food outlet and discretely record what foods from an agreed list are available. We are aware that food outlets have different purposes and markets and there is no expectation that all outlets should carry any of the foods on the list.

Should you have any questions or would like further information please don't hesitate to contact me.

We look forward to your participation in the survey.

Yours sincerely

12.10 Food outlets and the Tasmanian Healthy Food Basket

LGA and area	Food outlets supplying 90% of the items in the basket (40 or more items)					Cat. 8 – Fruit and vegetable shop supplying 90% (9 or more items) in fresh fruit and vegetable basket
	Cat. 1 -Major supermarket	Cat. 2 – Minor supermarkets	Cat. 3 – Local or corner shop	Cat. 4 -Local or corner shop with fuel pump	Total number of HFB outlets for each LGA	
Clarence	5	5	3	1	14	3
<i>Acton Park</i>	-	-	1	-		-
<i>Bellerive</i>	-	1	-	-		-
<i>Howrah</i>		-	1	-		1
<i>Lauderdale</i>	1	-	-	-		-
<i>Lindisfarne</i>	1	-	1	-		1
<i>Richmond</i>	-	1	-	1		-
<i>Risdon Vale</i>	-	1	-	-		-
<i>Rokeby</i>	-	1	-	-		-
<i>Rosny Park</i>	2	-	-	-		-
<i>Seven Mile Beach</i>	-	1	-	-		-
<i>Warrane</i>	1	-	-	-		1
Dorset	3	2	2	0	7	1
<i>Branxholm</i>	-	-	1	-		-
<i>Bridport</i>	1	1	-	-		-
<i>Gladstone</i>	-	1	-	-		-
<i>Scottsdale</i>	2	-	-	-		1
<i>Winnaleah</i>	-	-	1	-		-

12.11 SEIFA scores and ASGC Remoteness scores for LGA with food outlets included in the THFB survey

LGA and area	SEIFA assessed using the average relative socio-economic disadvantage indices by collection district		ASGC remoteness score *
	Individual SEIFA Score 1: most disadvantaged 10: least disadvantaged	Individual SEIFA Scores converted to Quintile Score 1: most disadvantaged 5: least disadvantaged	
Clarence			
<i>Risdon Vale</i>	1	1	2
<i>Warrane</i>	1	1	2
<i>Rokeby</i>	2	1	2
<i>Bellerive</i>	5	3	2
<i>Lindisfarne</i>	6	3	2
<i>Howrah</i>	7	4	2
<i>Lauderdale</i>	7	4	2
<i>Richmond</i>	7	4	2
<i>Rosny Park</i>	7	4	2
<i>Seven Mile Beach</i>	9	5	2
<i>Acton Park</i>	10	5	2
Dorset			
<i>Branxholm</i>	3	2	3
<i>Gladstone</i>	3	2	4
<i>Scottsdale</i>	3	2	3
<i>Winnaleah</i>	3	2	3
<i>Bridport</i>	4	2	3

*ASGC- RA remoteness CATEGORIES

1	major city
2	inner regional
3	outer regional
4	remote
5	very remote

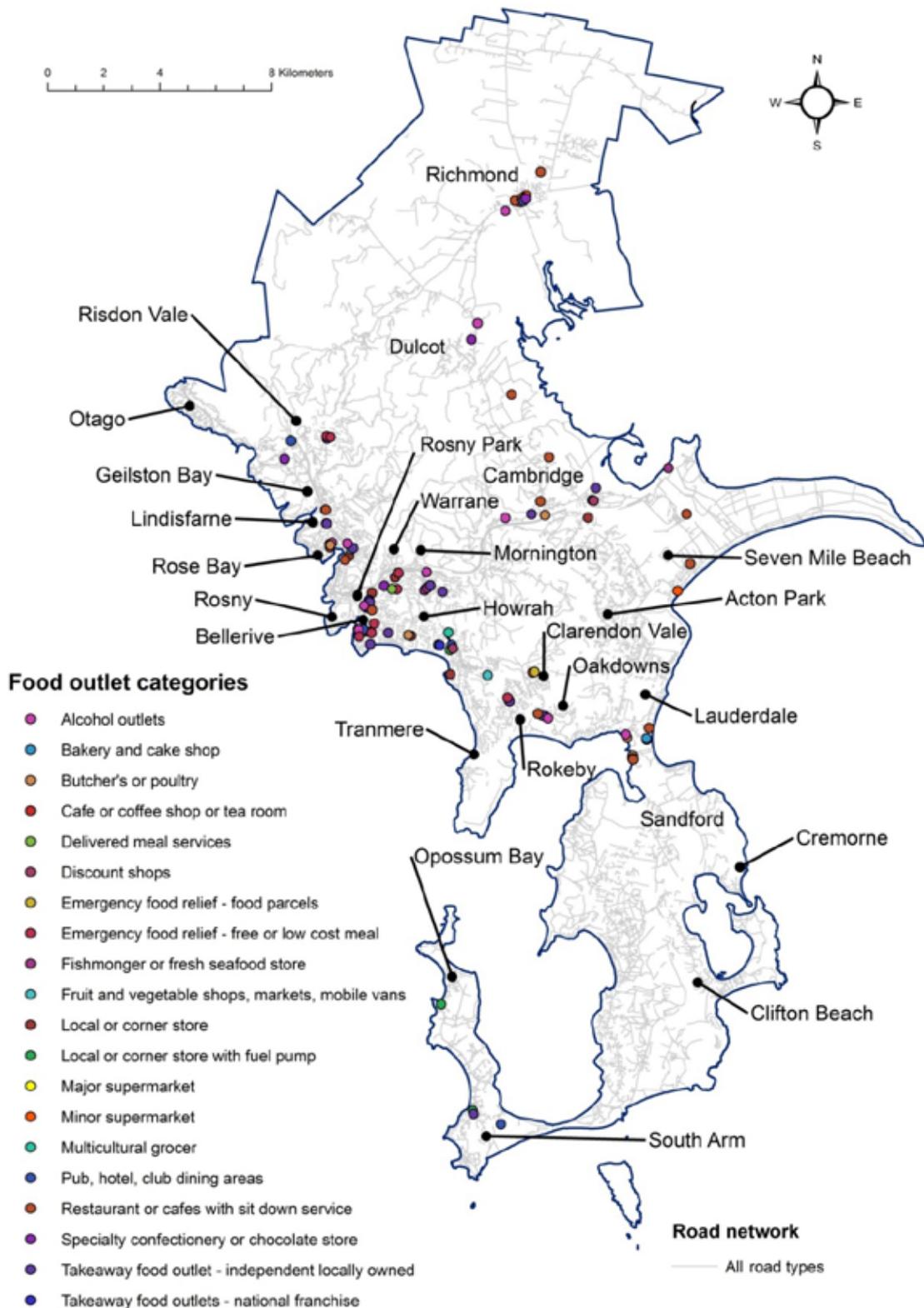
12.12 Maps

List of maps

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- Map 2:** Distribution of all food outlets in Dorset municipality on the road network
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- Map 16:** Population median household weekly income and distribution of healthy food basket outlets in Clarence municipality
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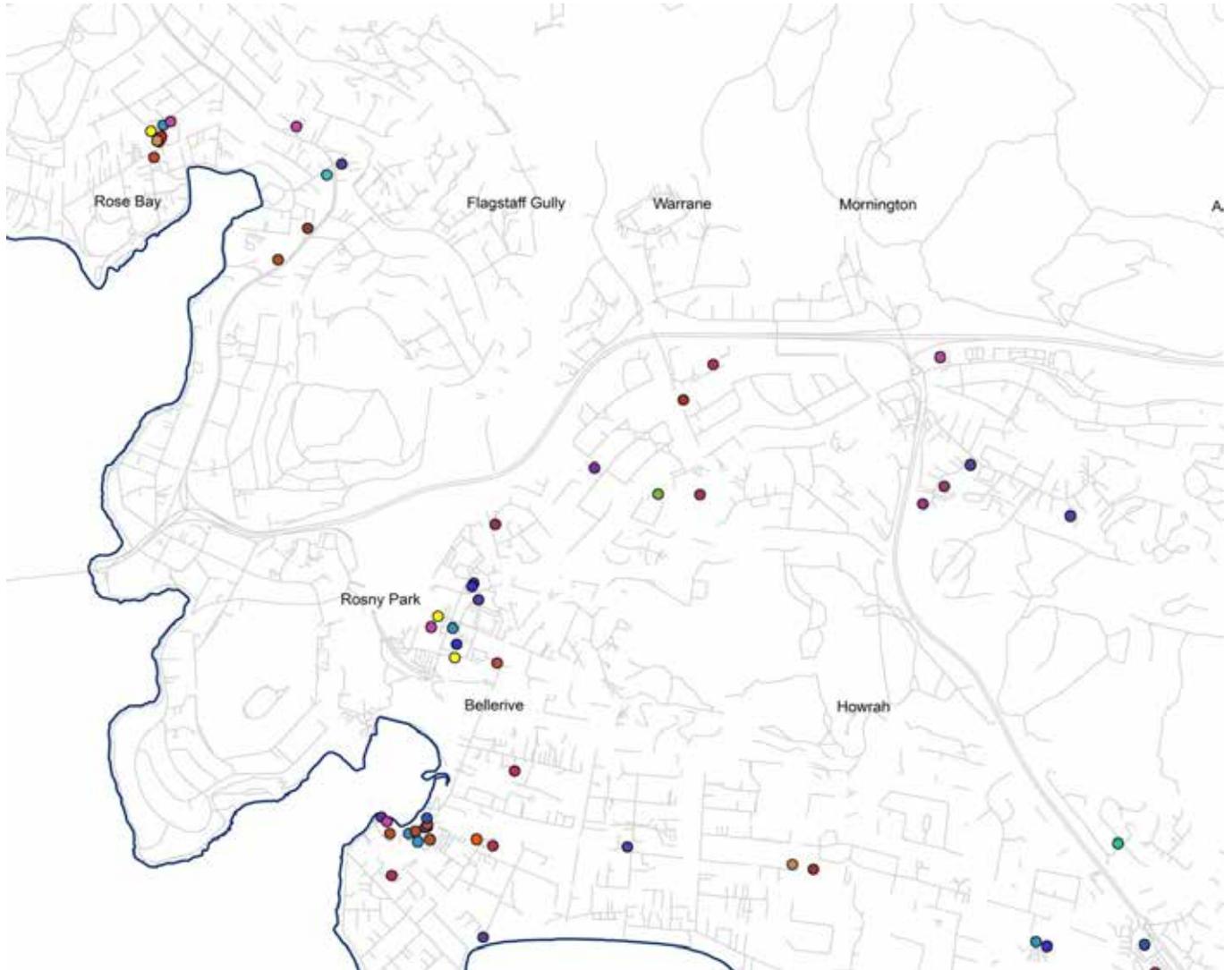
Map 1: Distribution of all food outlets in Clarence municipality on the road network

Note: Some food outlets may be obscured. Sources: TFOAT survey, Transport layer (DPIPWE, n.d.), LGA digital boundaries (ABS, 2011) Main population centres (GeoScience Australia, 2012)



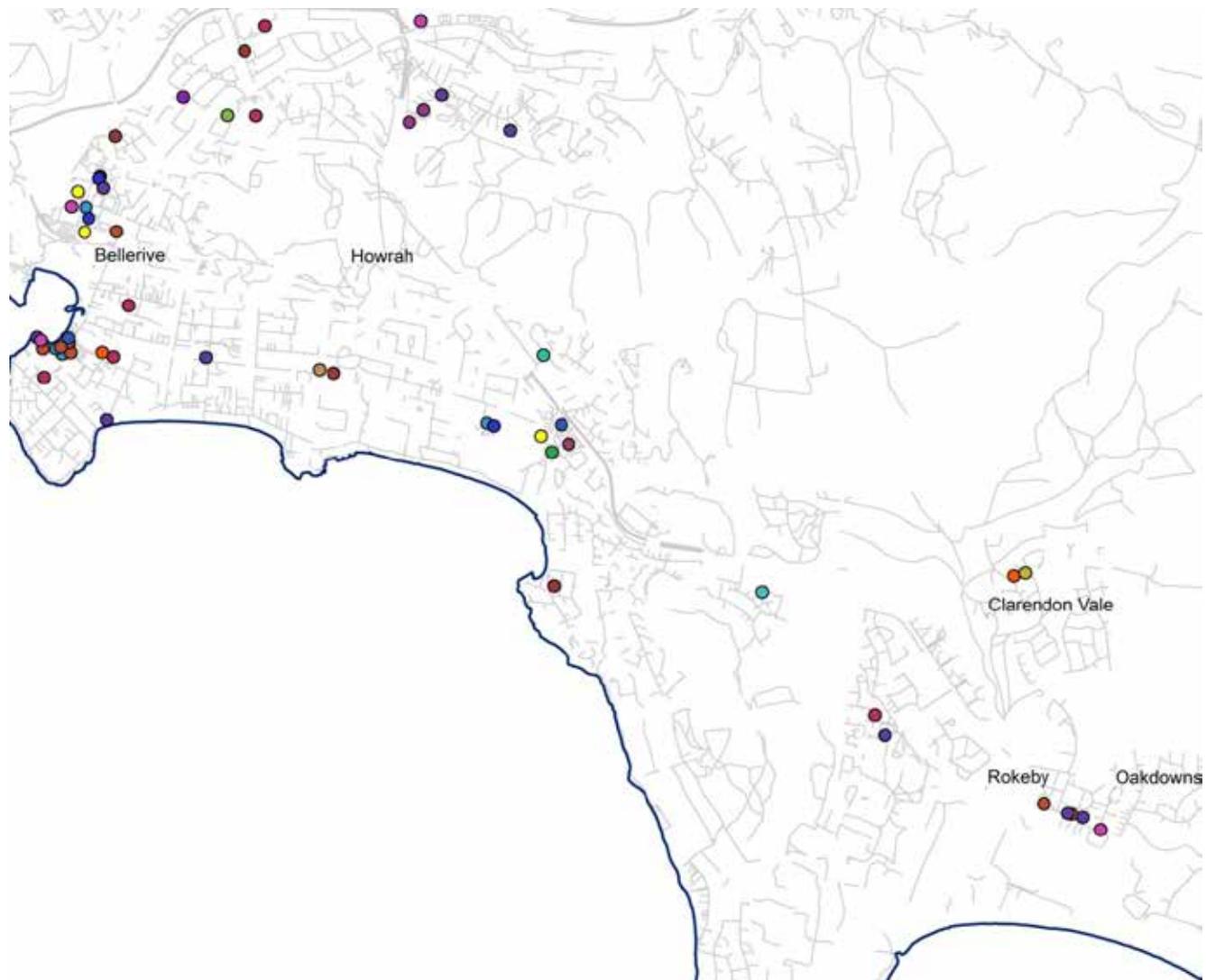
Submap 1 : Close up view of Clarence from Map 1

Note: Some food outlets may be obscured.



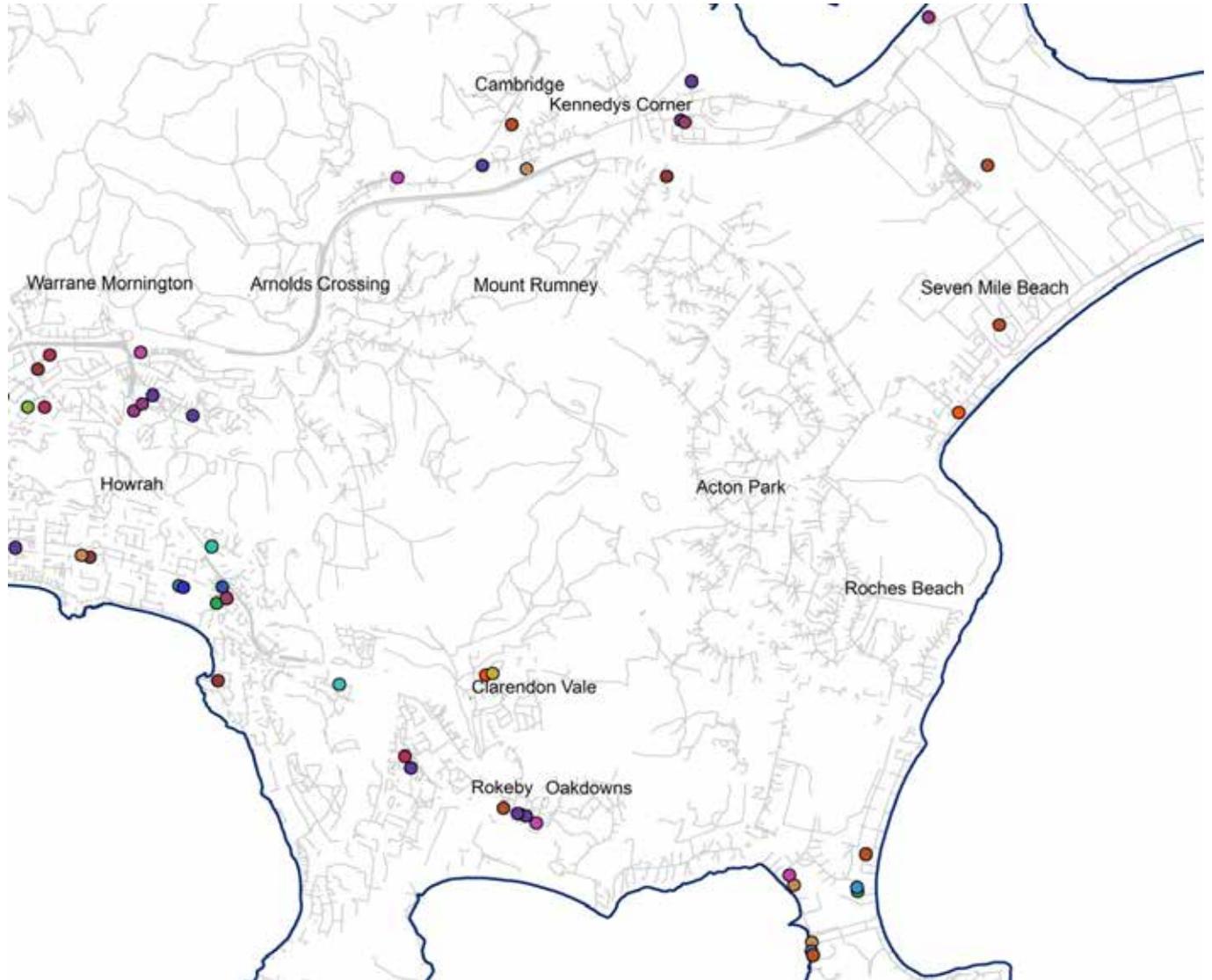
Submap 2 Close up view of Clarence from Map 1

Note: Some food outlets may be obscured.



Submap 3 Close up view of Clarence from Map 1

Note: Some food outlets may be obscured.



Submap 4: Close up view of Clarence from Map 1

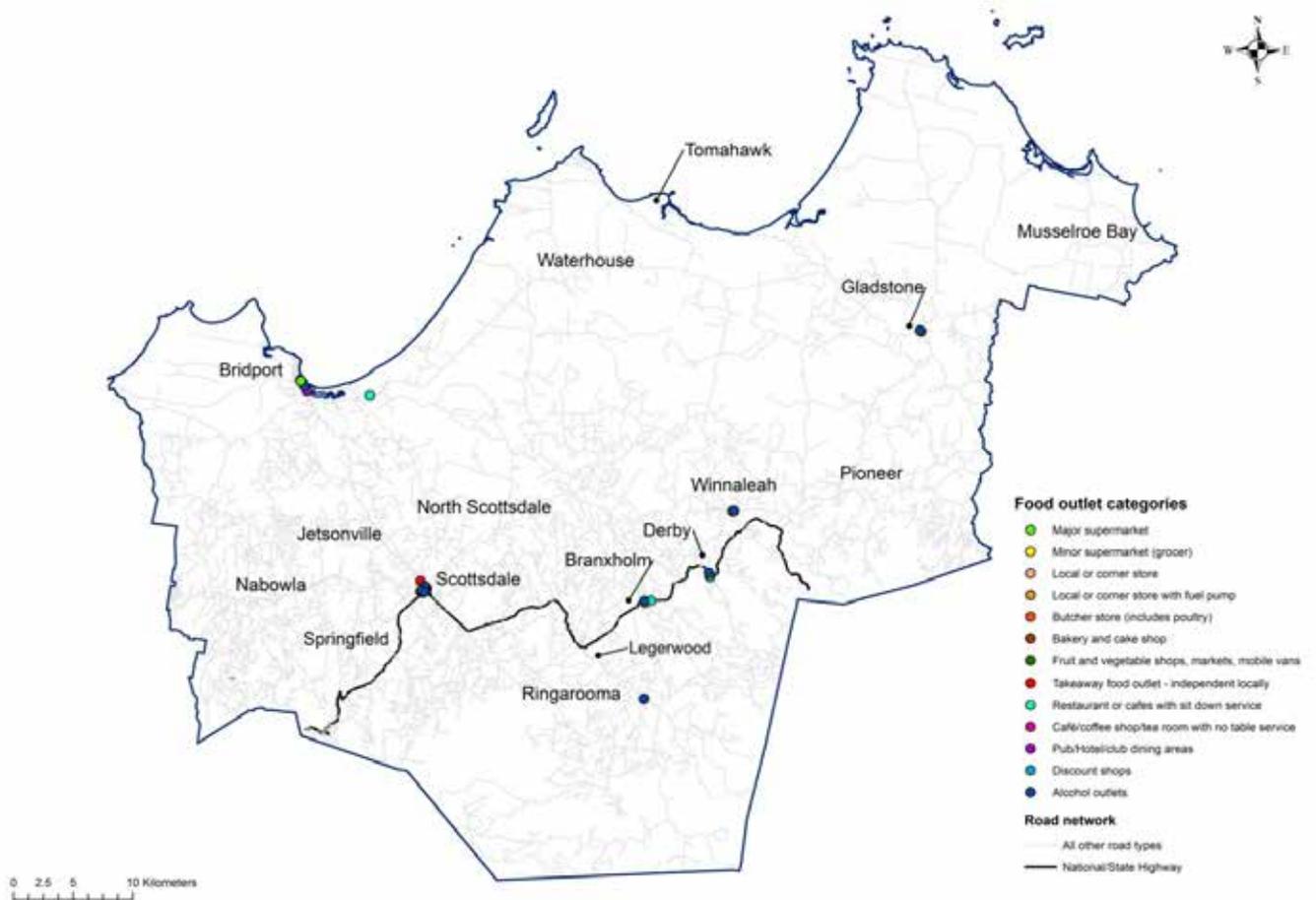
Note: Some food outlets may be obscured.



Map 2: Distribution of all food outlets in Dorset municipality on the road network

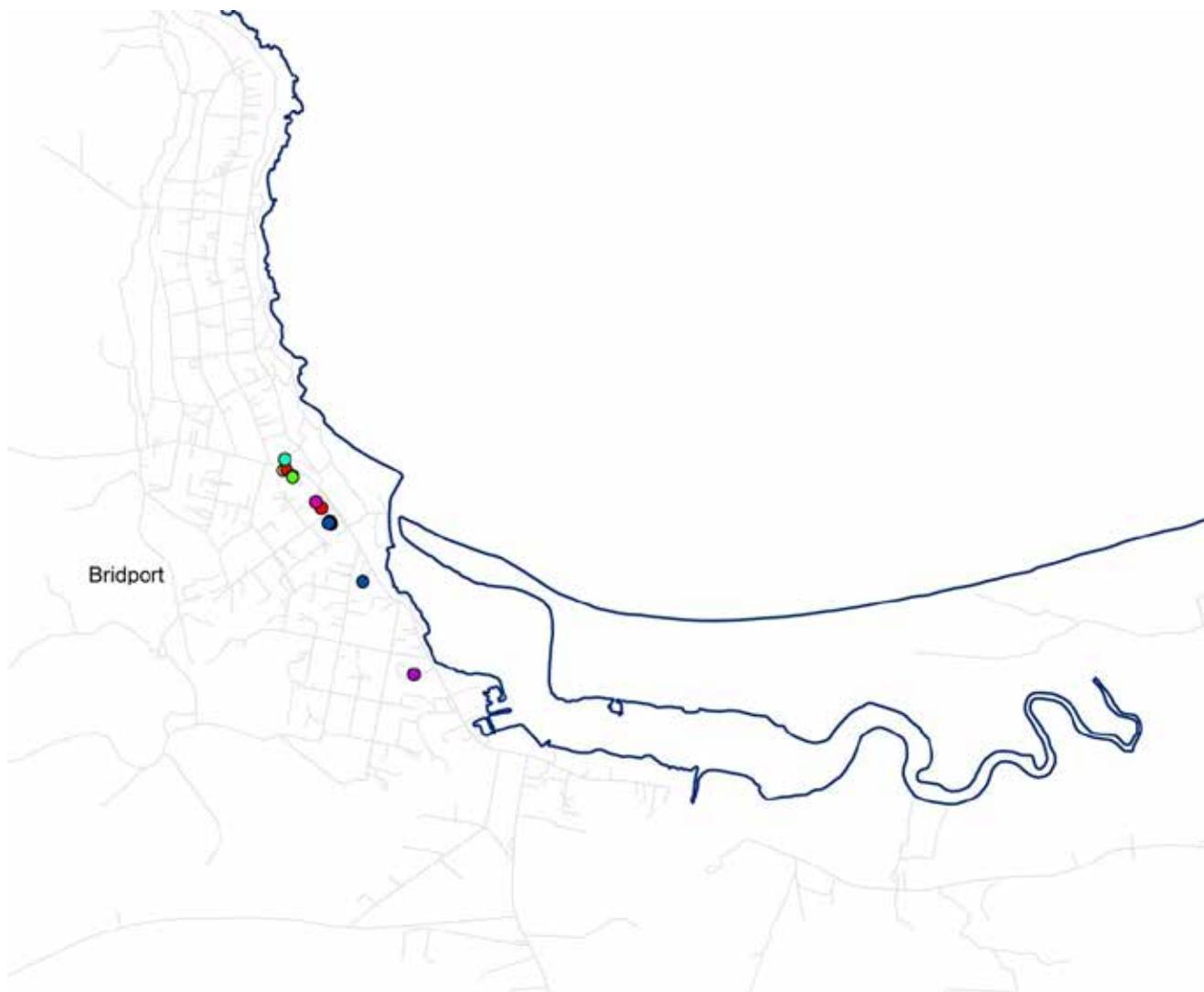
Note: Some food outlets may be obscured.

Sources: TFOAT survey, Transport layer (DPIPWE, n.d.), LGA digital boundaries (ABS, 2011) Main population centres (GeoScience Australia, 2012)



Submap 5: Close up view of Bridport area of Dorset from Map 2

Note: Some food outlets may be obscured.



Submap 6: Close up view of Scottsdale area in Dorset from Map 2

Note: Some food outlets may be obscured.

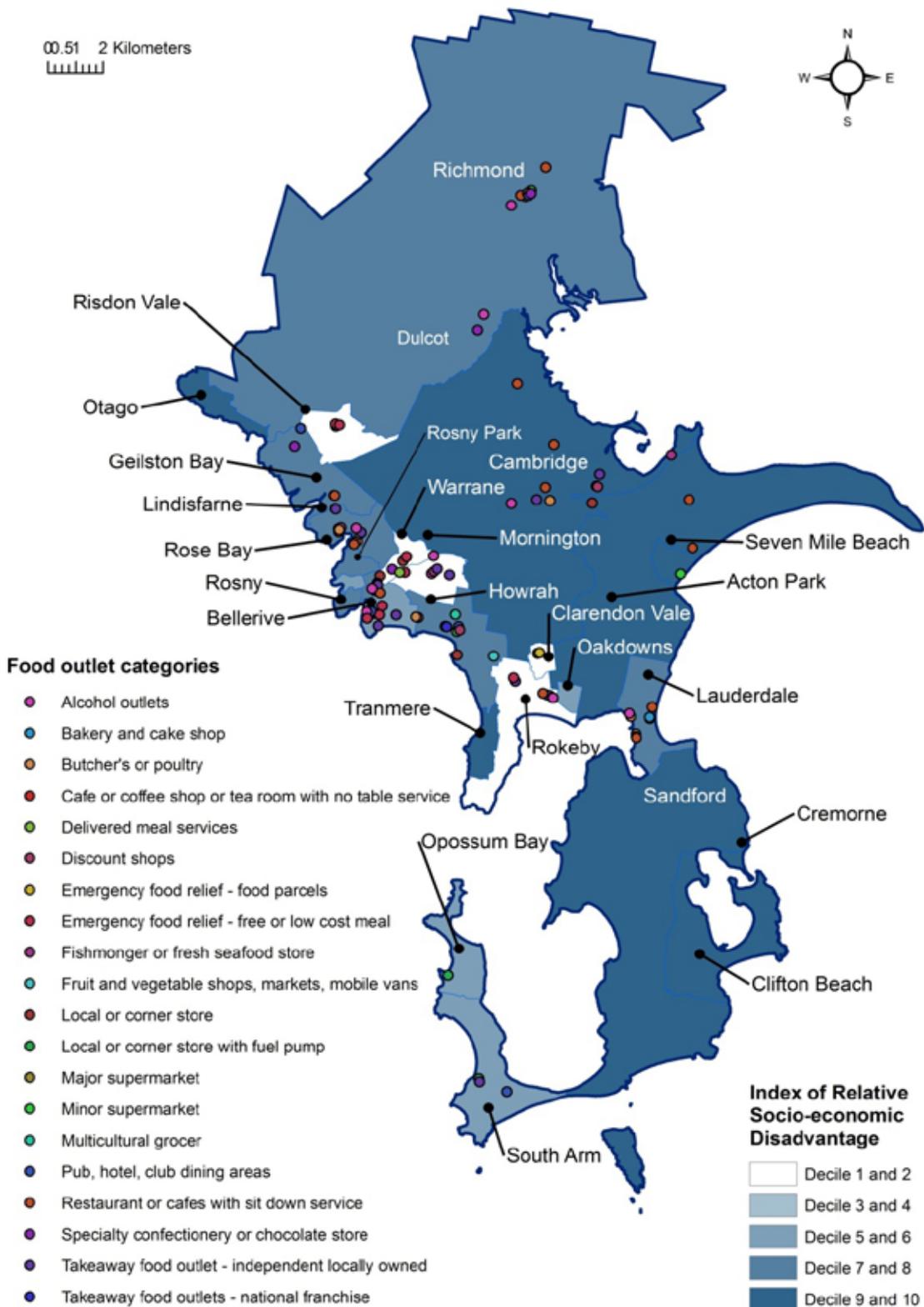


Map 3: Distribution of food outlets in Clarence municipality with Index of Relative Socio-economic Disadvantage

White: most disadvantage; dark blue: least disadvantage.

Note: Some food outlets may be obscured.

Sources: TFOAT survey, LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012), Index of Relative Socio-economic Disadvantage (ABS, 2008a).

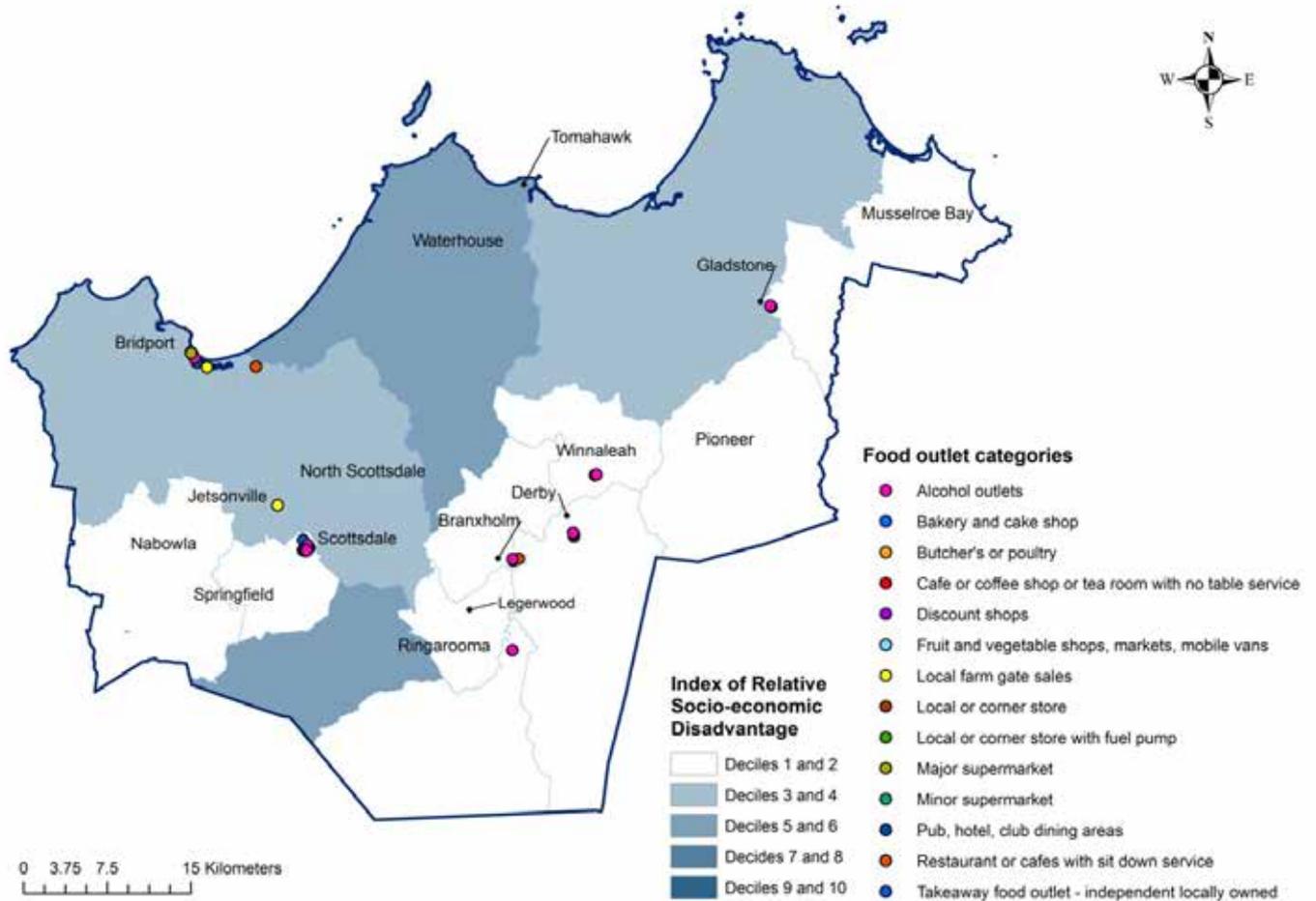


Map 4: Distribution of food outlets in Dorset municipality with Index of Relative Socio-economic Disadvantage

White: most disadvantage; dark blue: least disadvantage.

Note: Some food outlets may be obscured.

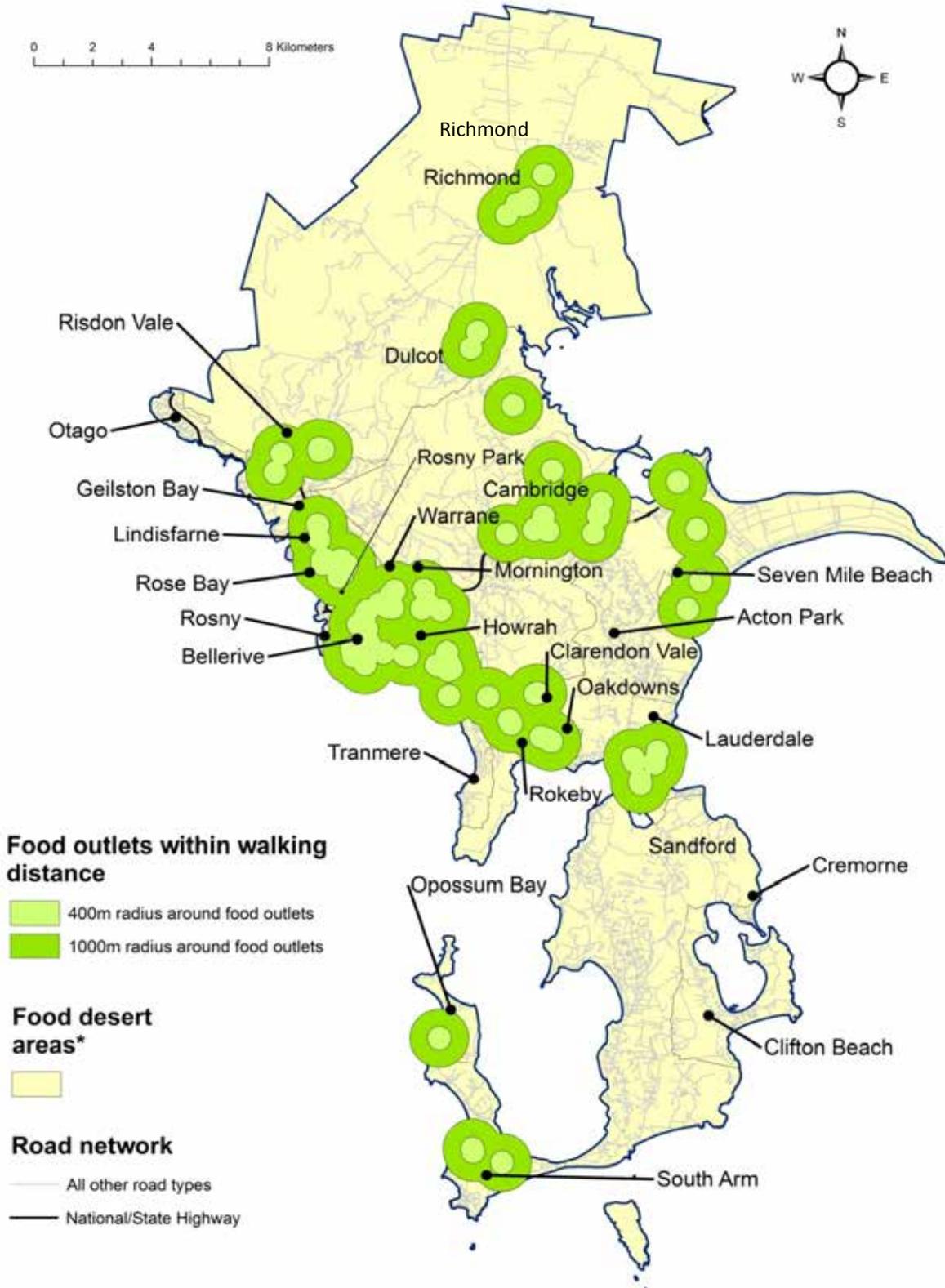
Sources: TFOAT survey, LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012), Index of Relative Socio-economic Disadvantage (ABS, 2008a).



Map 5: Food outlets with walking distance radius on road network in Clarence municipality

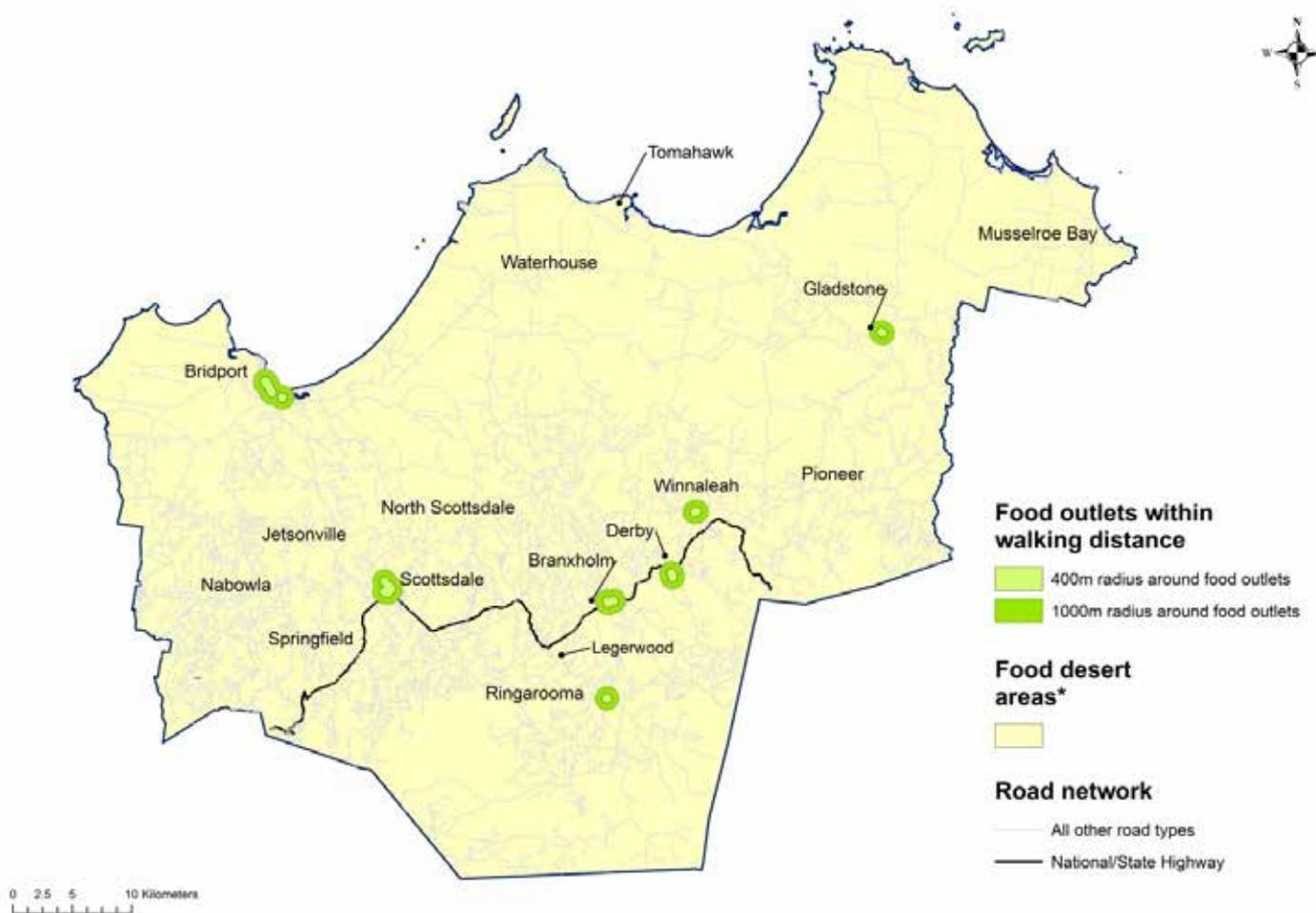
* Food desert areas are those where healthy food is hard to obtain.

Sources: TFOAT survey, Transport layer (DPIPWE, n.d.), LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012)



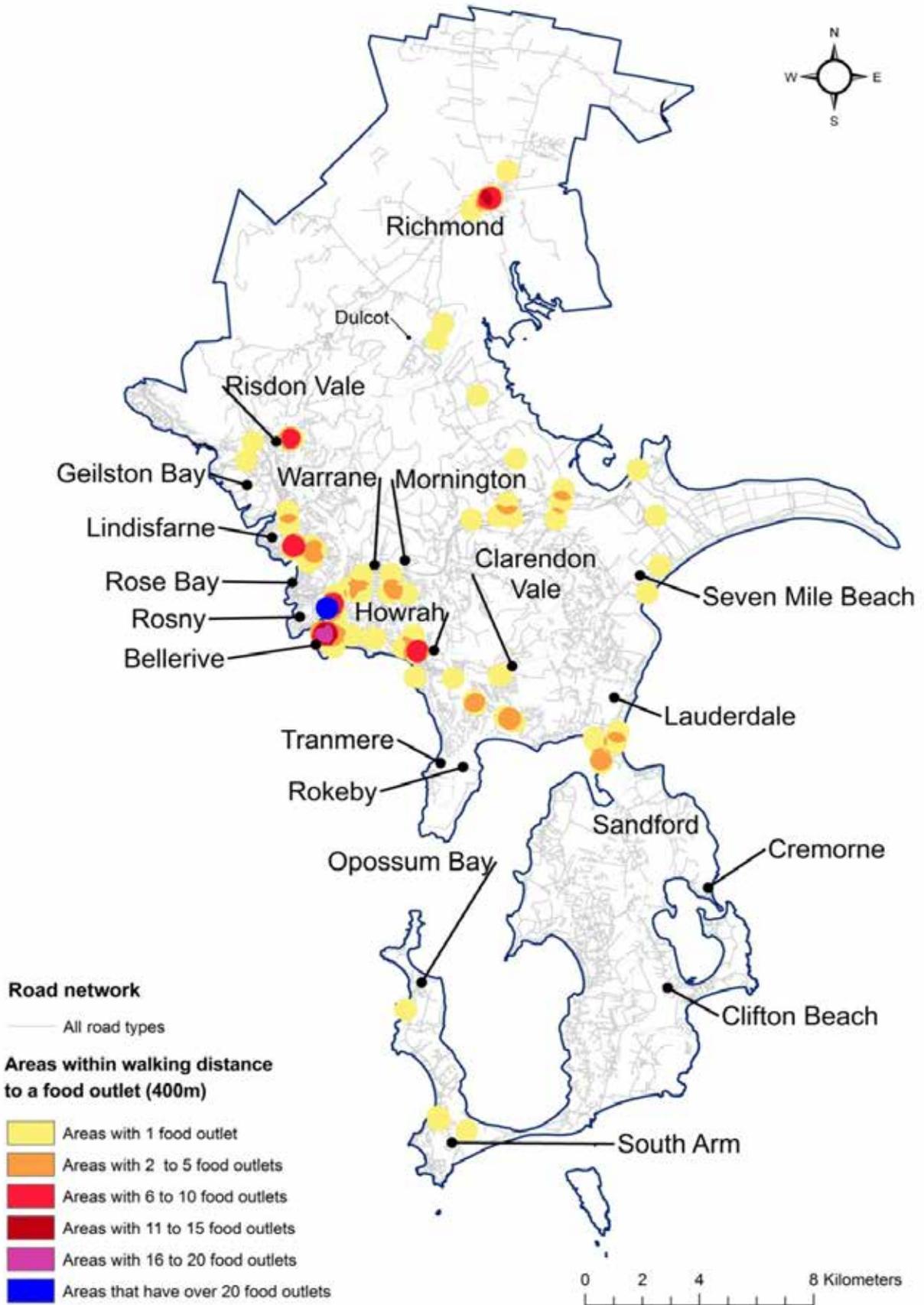
Map 6: Food outlets with walking distance radius on road network in Dorset municipality

Sources: TFOAT survey, Transport layer (DPIPWE, n.d.), LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012).



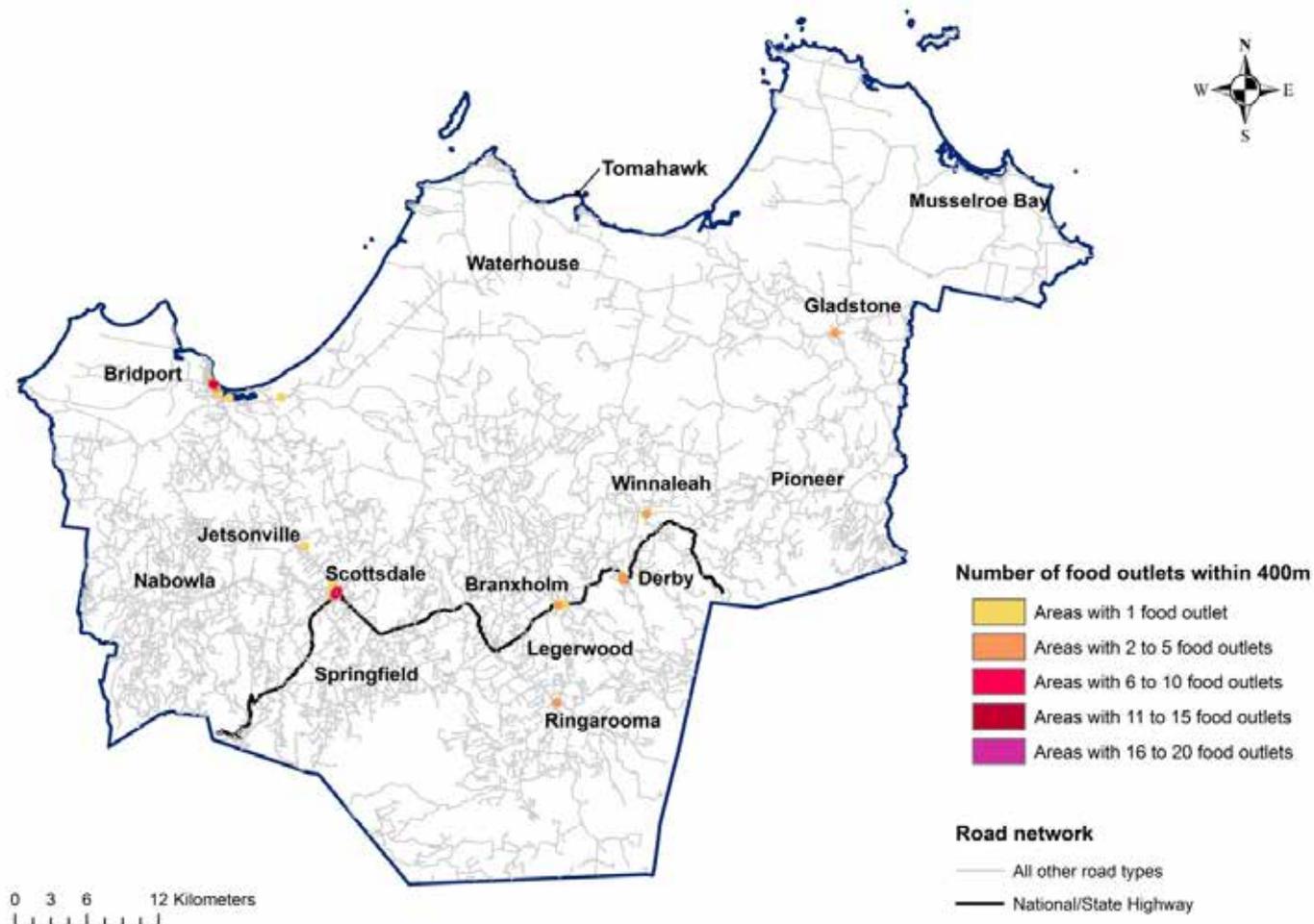
Map 7: Areas within walking distance to a food outlet (400m) on road network in Clarence municipality

Sources: TFOAT survey, Transport layer (DPIPWE, n.d.), LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012).



Map 8: Number of food outlets within walkable distance of 400m on road network in Dorset municipality

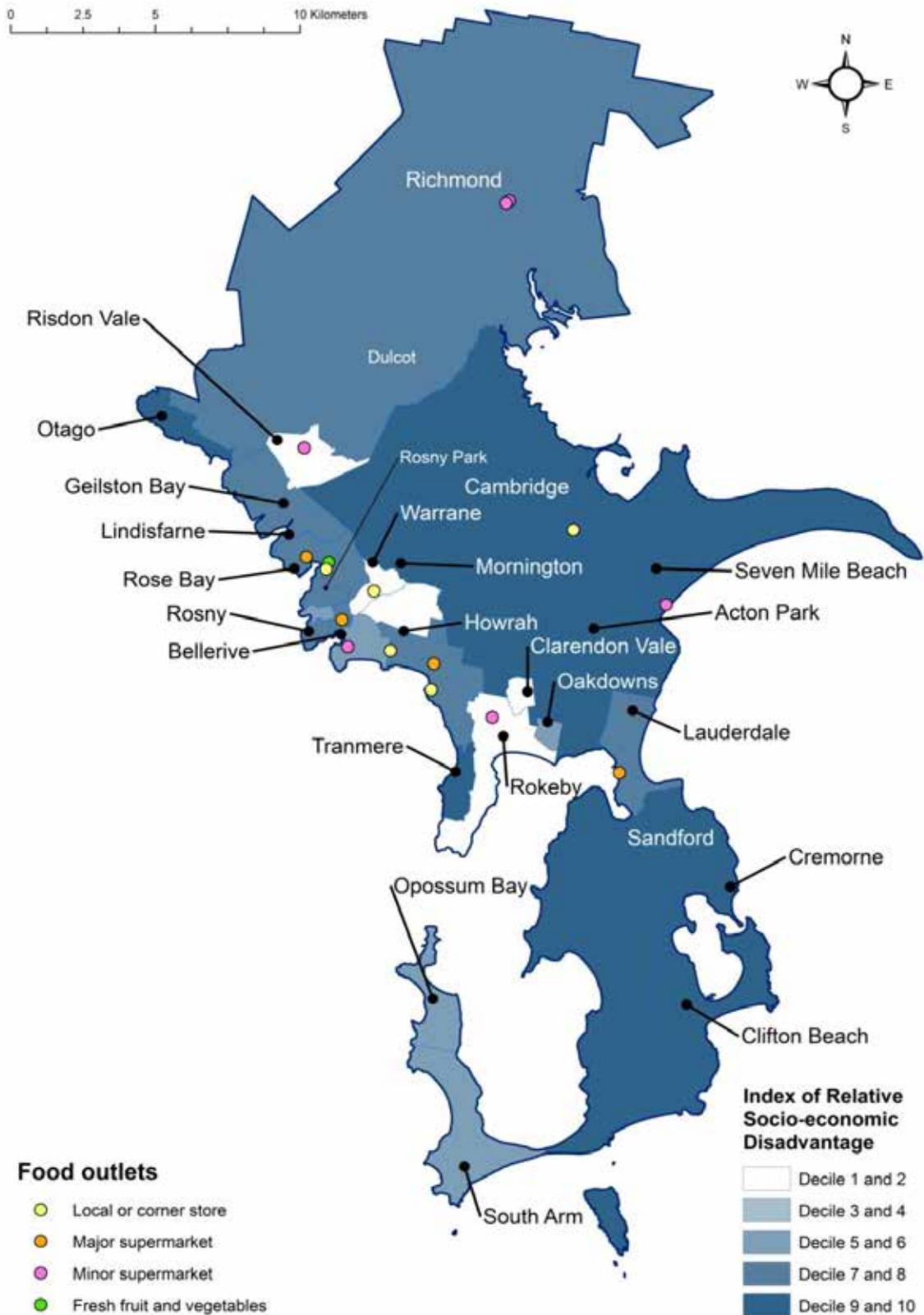
Sources: TFOAT survey, Transport layer (DPIPWE, n.d.), LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012).



Map 9: Distribution of food outlets stocking 90% (9 – 10 items) of the fresh fruit and vegetables component of healthy food basket in Clarence municipality with Index of Relative Socio-economic Disadvantage

Note: Some food outlets may be obscured.

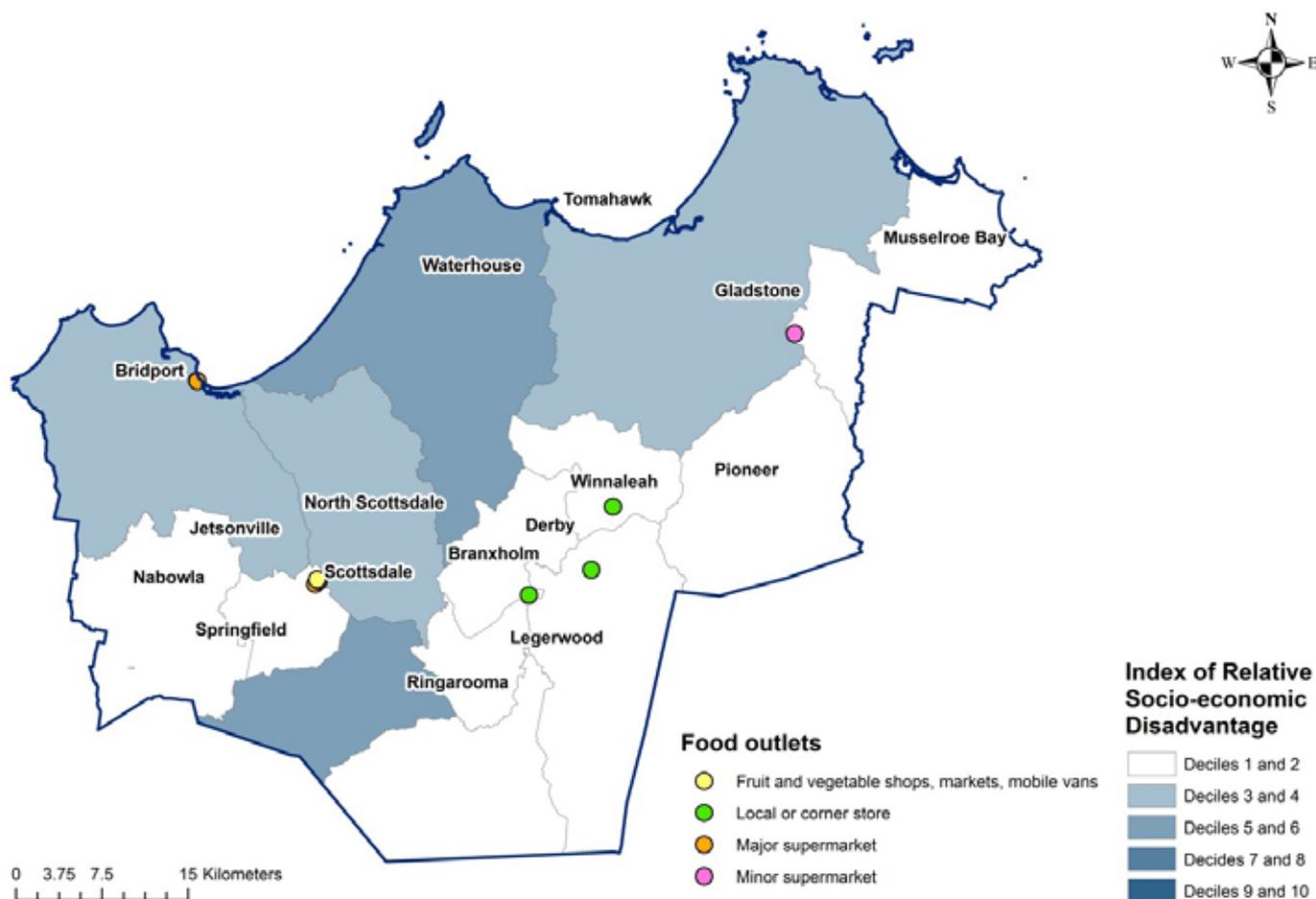
Sources: TFOAT survey, LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012), SEIFA Index (ABS, 2008a).



Map 10: Distribution of food outlets stocking 90% (9 – 10 items) of the fresh fruit and vegetables component of healthy food basket in Dorset municipality with Index of Relative Socio-economic Disadvantage

Note: Some food outlets may be obscured.

Sources: TFOAT survey, LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012), SEIFA Index (ABS, 2008a).



Map 11: A comparison of the distribution of take-away food outlets and food outlets offering at least 90% of Tasmanian healthy food basket items (including fruit and vegetable outlets) in Clarence municipality with Index of Relative Socio-economic Disadvantage

Note: Some food outlets may be obscured.

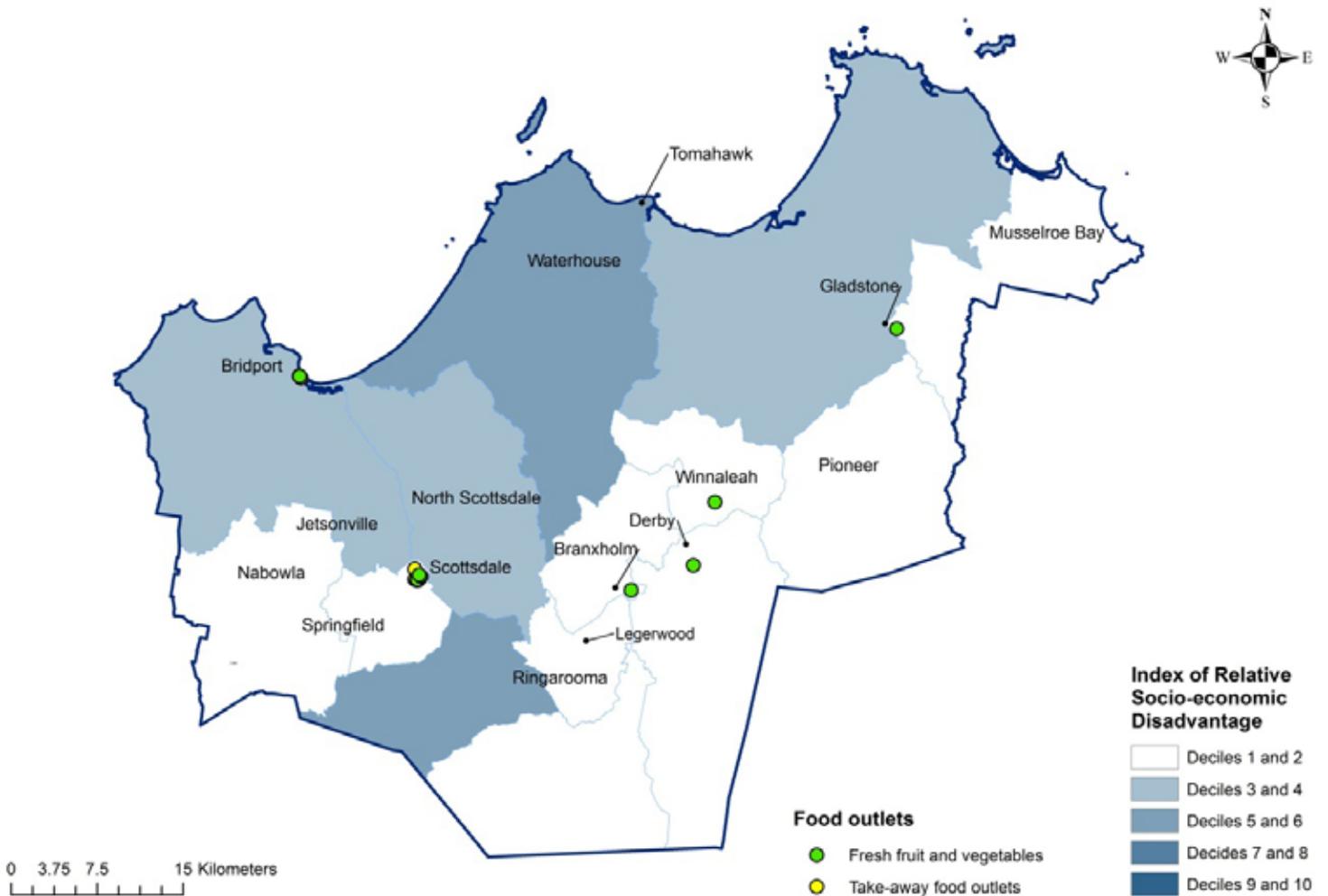
Sources: TFOAT survey, LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012), SEIFA Index (ABS, 2008a).



Map 12: A comparison of the distribution of take-away food outlets and food outlets offering at least 90% of Tasmanian healthy food basket items (including fruit and vegetable outlets) in Dorset municipality with Index of Relative Socio-economic Disadvantage

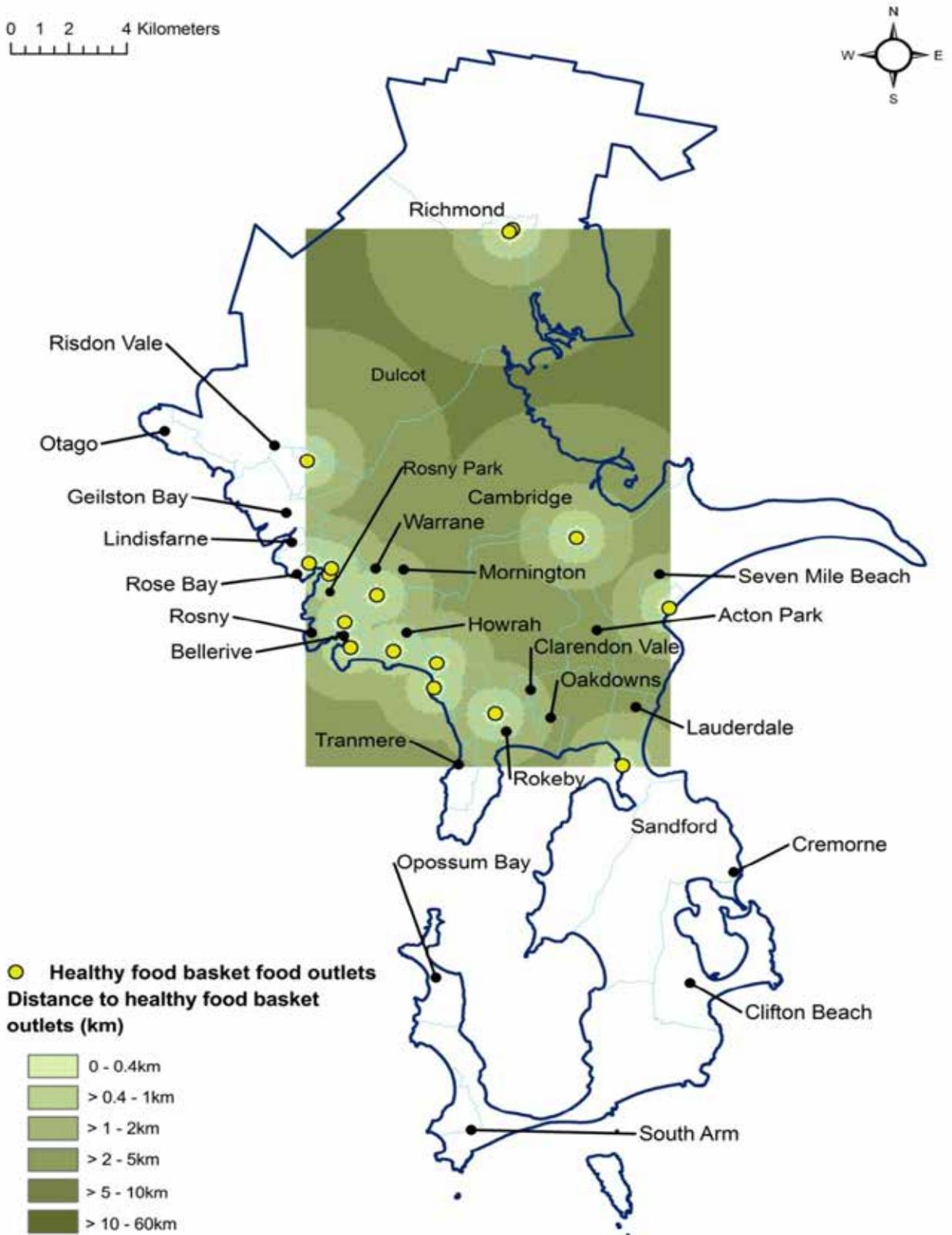
Note: Some food outlets may be obscured.

Sources: TFOAT survey, LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012), SEIFA Index (ABS, 2008a).



Map 13: Access to food outlets stocking 90% (40 – 44 items) of the healthy food basket by travel distance in Clarence

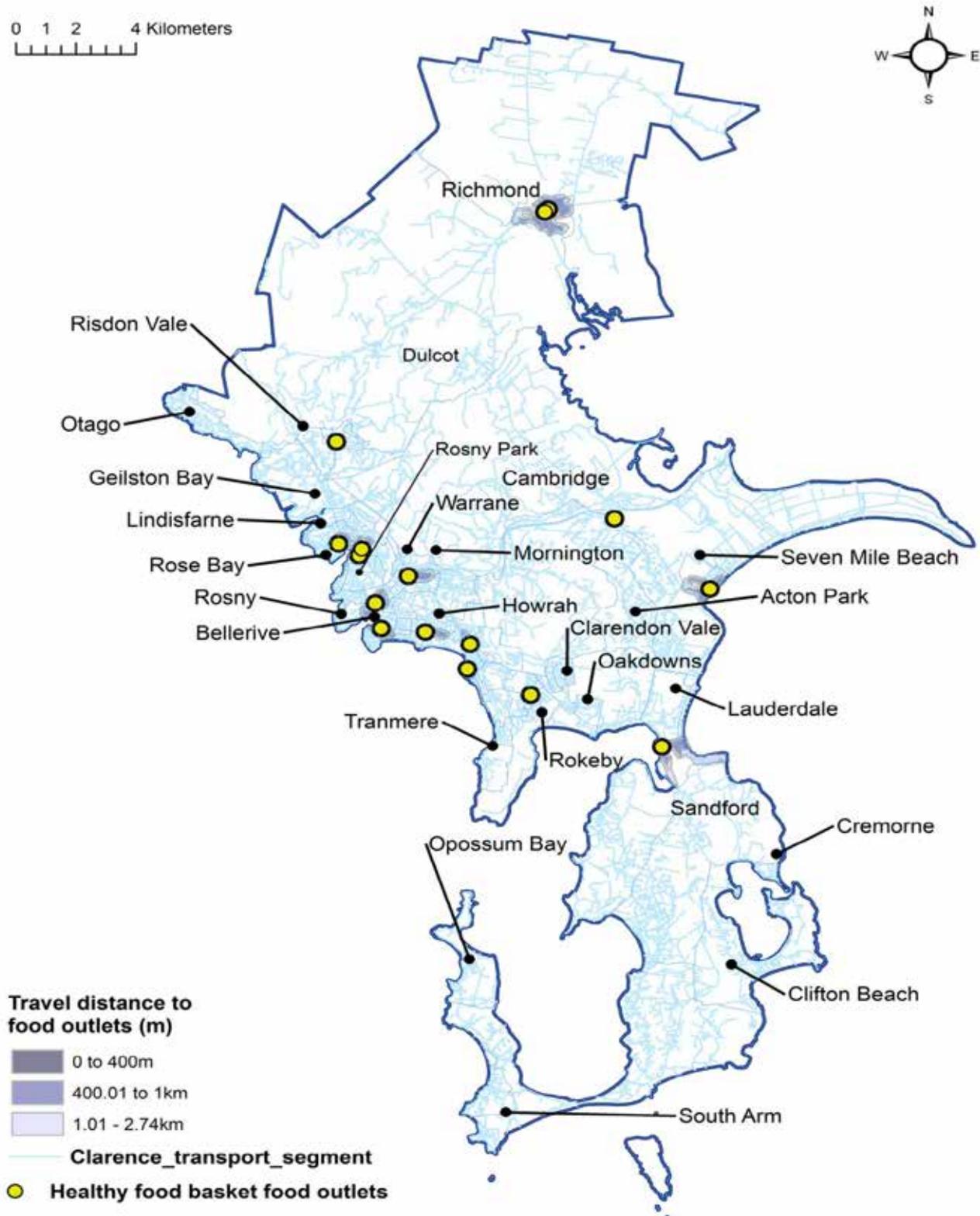
Note: Some food outlets may be obscured. Sources: TFOAT survey, Transport layer (DPIPWE, n.d.), LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012).



Map 14: Travel distance to food outlets stocking 90% (40 – 44 items) of the healthy food basket by travel distance in Clarence

Note: Some food outlets may be obscured.

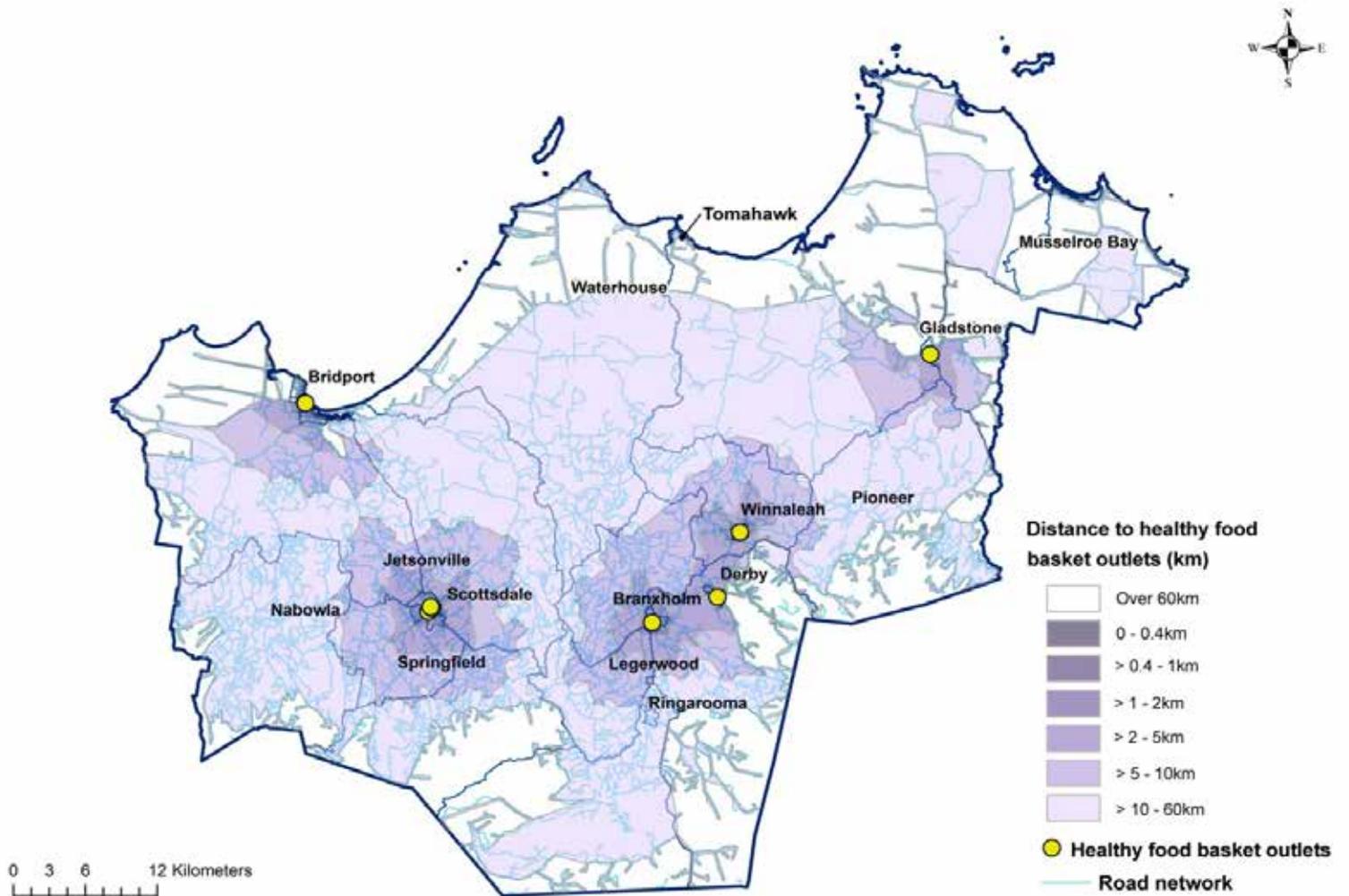
Sources: TFOAT survey, Transport layer (DPIPWE, n.d.), LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012)



Map 15: Access to food outlets stocking 90% (40 – 44 items) of the healthy food basket by travel distance in Dorset municipality

Note: Some food outlets may be obscured.

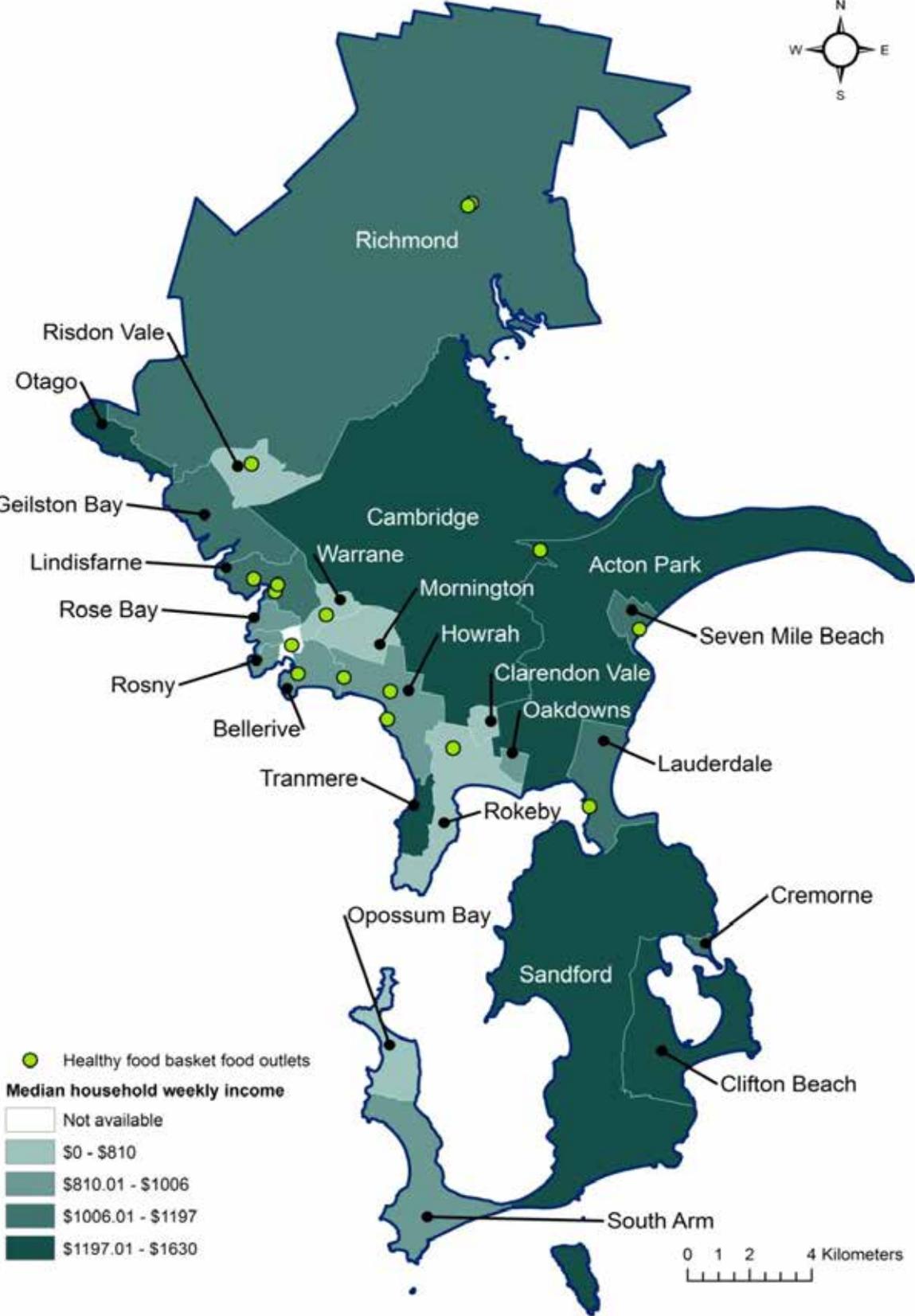
Sources: TFOAT survey, Transport layer (DPIPWE, n.d.), LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012).



Map 16: Population median household weekly income and distribution of healthy food basket outlets in Clarence municipality

Note: Some food outlets may be obscured.

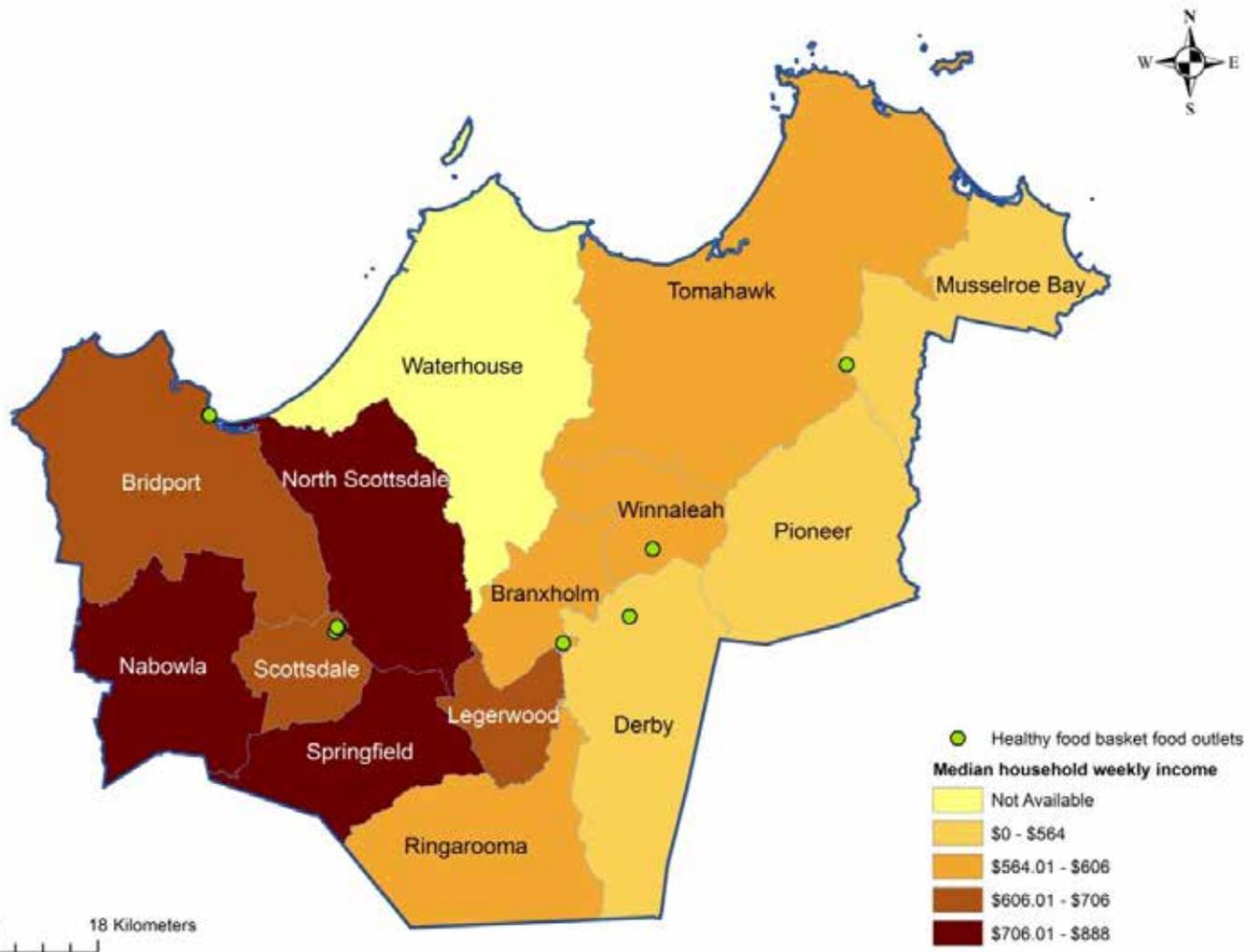
Sources: TFOAT survey, LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012), Population median weekly income (ABS, 2006b).



Map 17: Population median household weekly income and distribution of healthy food basket outlets in Dorset municipality

Note: Some food outlets may be obscured.

Sources: TFOAT survey, LGA digital boundaries (ABS, 2011), Main population centres (GeoScience Australia, 2012), Population median weekly income (ABS, 2006b).



Food Access Research Project Education Report



a fairer world
The Tasmanian Centre for Global Learning

Executive summary

This report details the role of the Tasmanian Centre for Global Learning (the Centre) in the Tasmanian Food Access Research Coalition (TFARC) project.

“The Tasmanian Centre for Global Learning will work with students from high schools in the Clarence local government area. Teachers from the Centre for Global Learning work with educators to integrate active citizenship projects into the curriculum and to help young Tasmanians to create positive change in their communities. It is envisaged that a participatory research project will run over 10 weeks with young people in their high schools. This will be an innovative way to approach health and nutrition education, and studies of society and the environment, through the lens of food access and supply in their local area. Past experience in delivering such programmes has suggested that young people are most readily engaged when projects employ new technologies and multi-media. The research and findings of the young people will be included in the community food assessment report.” Submission for Funding, September 2010, TFARC

Essentially this role involved two components: engaging Rokeby High School students in the food research; and developing education resources that would encourage schools to incorporate food security in the curriculum.

The Centre worked with a small catering class at Rokeby High School, primarily by supporting their teacher but also directly with the students on a number of occasions. The aim was for the students to firstly gain an understanding of the TFARC project, social research principles, and food security as a local and global issue. From this the students were encouraged to develop and carry-out their own research projects on food security.

The project required some adjustment for the special challenges of working with this group



**A week's food for each of three families
in Clarence**

of students, in particular their high rate of absenteeism, and lack of confidence in initiating and driving a project. Perhaps these comments from their teacher best illustrate the issues:

I don't think they grasped how big this project is or really believed that anyone would be interested in what they had to say. I don't think they see their community as special.

It was hard to know what was going to be best for this group. They had good, big, ideas – e.g. the photo journals – but then didn't follow through. They lack self-direction and don't like writing so can't maintain the enthusiasm.

In the end the work undertaken by the class included student and family food journals, a Healthy Living Expo, and a Food Survey. Their results are best judged by the educational value to the students: their increased knowledge of food security and, as a by-product, their understanding of social research.

I think that they did come to an understanding about research and why the survey was being done – that food security is important to their community. (Teacher)

Also in changes in the students' behaviour and the influence they had on others:

I stopped eating unhealthy food and I told Mum and Dad about it and they stopped buying it. (Student)

In our view, as outsiders, the students gained in other ways from their involvement in the project. For those most closely involved we noted an increase in the value they placed on their community and on their own opinions.

The second component of the project has seen the Centre develop a suite of education resources – teacher and student workshops, a web page and a teacher resource list – that will allow us to support and encourage teachers to include food security in the classroom.

A bonus outcome from the project is that Food Justice will be the focus of the Centre's 2013 *Fairer World Festival*, raising awareness of food security as a local and global issue to 1500 Tasmanian school students and their teachers.

What is food security?

People are said to have food security when they have access to sufficient, reliable, nutritious, safe, acceptable and sustainable food. Food poverty is defined as:

The inability to obtain healthy affordable food. This may be because people lack shops in their area or have trouble reaching them. Other factors influencing food access are the availability of a range of healthy goods in local shops, income, transport, fear of crime, knowledge about what constitutes a healthy diet, and the skills to create healthy meals (Sustain 2011).

Just opening a community garden or a fruit and vegetable shop in a neighbourhood won't improve food security if people can't use it, or don't wish to.

What can be done about food security?

A good place to start is a Community Food Assessment. A food assessment is a collaborative and participatory process that examines a broad range of community food issues, so that action can be taken to make a community more food secure.

A Community Food Assessment:

- documents the reality of available food and nutrition knowledge in a specific neighborhood;
- identifies obstacles to eating well; and
- makes recommendations on community-identified and sustainable solutions to overcome them.

These assessments have been extensively undertaken in the United States (US) and increasingly in Australia in order to understand a community's perceptions and experiences of food, health, nutrition, and hunger.

The project and the role of the Tasmanian Centre for Global Learning

In May 2011, Anglicare Tasmania (on behalf of TFARC) contracted the Tasmanian Centre for Global Learning to “work with selected schools in the Clarence municipality to integrate active citizenship projects into the curriculum and help young people to create positive change in their communities, with a focus on food access and supply in the local area”.

The coalition comprises six organisations led by Anglicare Tasmania. The other organisations are the Department of Rural Health (University of Tasmania), School of Human Life Sciences (University of Tasmania), Primary Health North Esk (Department of Health & Human Services), Dorset Council and Clarence Council. The Coalition received funding from the Tasmanian Food Security Council to undertake research on food access in the Dorset and Clarence City municipalities.

The aim of the research project was to identify and improve understanding of food access in the Clarence and Dorset municipalities. This was to be done by seeking an in-depth understanding of issues with food access and supply through both quantitative data and as seen through the eyes of people living in the areas.

The Centre's role was to support school involvement in the research project by providing information and resources: lesson plans; background information; educational resources on food and nutrition; assistance with project design; mentoring (teachers and students); materials; speakers; and excursions.

Why involve young people?

In the United States young people have played an important role in increasing community knowledge about local food resources.

Obesity and nutrition are growing issues in Australia as they are in all developed western countries. The ongoing health risks and social costs of obesity and poor nutrition are now well known: increased risk of heart disease, diabetes, and hypertension.

Enlisting young people as research participants can be an empowering way for them, not only to learn about food and nutrition, but also to make changes in their lifestyle (food choices) and also in their community (improved access to fresh food sources). Without affordable, near-at-hand, healthy eating options, "expert" advice is hard to follow.

Students might participate by keeping a food diary; surveying classmates; interviewing parents or local health professionals; examining school lunch menus; or mapping fast food outlets, grocery stores, and other food outlets in their neighbourhood. Knowledge can be transmitted and skills improved by presenting their findings in a variety of ways, such as digital media, and public forums.

The Tasmanian Centre for Global Learning (the Centre)

The Centre works with schools and the community for social justice, peace and a sustainable world future. We offer schools a link to the community sector and social justice issues. We do this by providing innovative education programs, professional development for teachers, student workshops, teaching resources, mentoring, and access to networks. Our flagship education program is ruMAD? (Are You Making A Difference?), which we

deliver in Tasmania on behalf of the Foundation for Young Australians.

ruMAD? is a citizenship education framework that empowers students to take responsibility for their learning through an inquiry approach and designed to assist them in developing a deeper understanding of community issues. It was specifically designed to engage students in the learning process and to bring greater equity to the classroom, school and community.

The ruMAD? Program was developed and piloted in Victoria in 2001 by Dr David Zyngier, a lecturer and researcher in the area of student engagement, particularly for at-risk students, and Claire Brunner, a youth facilitator who has worked with young people in forums from juvenile justice to the National Youth Round Table and Youth Summit 2020. Dr Zyngier, a former school principal, challenges educators to look at their teaching practice and how they, and their students, get connected to the real world.

I have found that students most at-risk of failure, from socially, culturally and economically disadvantaged conditions are the least likely to be exposed to intellectually challenging and relevant material. My considerable experience and research has shown that these students are more likely to be engaged through 'productive and reciprocal pedagogies' that draw on students 'real life' concerns and enable them to have more control of their lives and be connected to a more participatory social vision of society. The ruMAD program is firmly grounded and based on these pedagogical understandings. (Dr David Zyngier, Monash University)

Coming from this background ruMAD? provides a teaching platform that is complementary to and has strong synergies with community development principles and social action research methodology. Whilst this food security project did not formally use the ruMAD? Program, it did embrace the principles and philosophy of the program in working with the students.

Rokeby High School project involvement

Since 2009, the Centre has worked with teachers at Rokeby High School supporting implementation of the ruMAD? Program.

The class selected to work on the Food Security project at Rokeby High was a group of ten students from grades 8 to 10 undertaking a

Catering and Child Care unit with teacher Fiona Gillham.

The project required research approval from the Department of Education which was granted on application.

As a first step the teacher was provided with teaching materials on Food Security that she could use with the students to better understand the issue. The most useful of these resources was the *Hungry Planet* kit (see Teacher Resource List at Appendix 4). The kit, available on loan from the Centre's Global Learning Resource Library, includes a collection of 12 posters, *What the World Eats*, each of which shows graphically a week's food for a family from a different country and related health statistics.

Two introductory sessions were run by Centre and Project staff:

- 1 An interactive workshop on the local and global aspects of food security and the Tasmanian Food Access Research Project.
- 2 An introduction to the Tasmanian Food Access Research Survey (then in the pilot phase) and canvassing options for student involvement.
- 3 The teacher then worked with the class to develop projects of interest to the students. The students were most interested in the personal nutrition and weekly budgeting aspects of food. They were also very keen to carry out their own "Food Survey" in the local area. However, there were a number of challenges in this development process, including erratic student attendance at school. According to the teacher the most difficult aspect of the project was:

Trying to get [the students] to input to the process. It was the dynamic of the group: 3 or 4 joined more than half-way through the year.



Unless it was hands-on I couldn't get them to be self-directed.

Four components to the project evolved over a number of months: student food photo journals; family food photo journals; a Healthy Living Expo; and a Food Survey.

STUDENT FOOD JOURNALS

The two journal components (students and families) were inspired by the *What the World Eats* posters. The task for students was to keep a diary of everything they ate and drank for three days and present this in a PowerPoint, poster, report or display.

The student photo journals were the least successful aspect of the program and in the end only two of ten students completed the task. These quotes illustrated the reasons given by the students and teacher.

No one has done them because they're "slackos"; disposable cameras didn't work; most started keeping a record. (Student)

They didn't get into the photo-journals which surprised me. Only 3 put anything on paper.

Rokeby High student's poster of the food she ate over three days

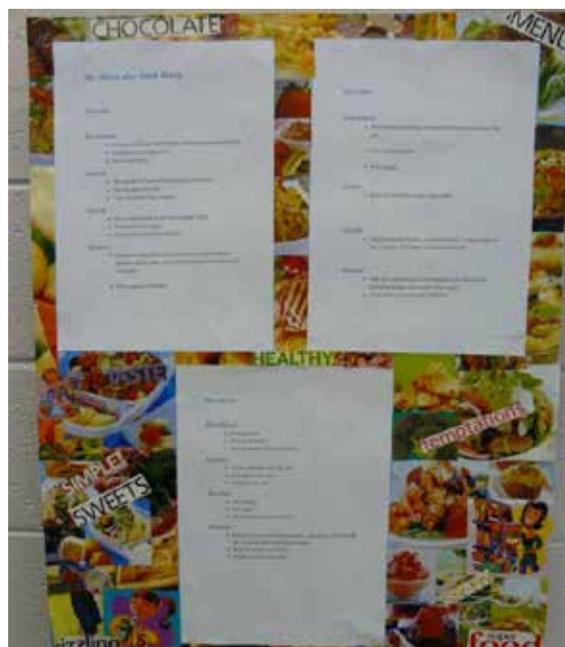


Photo from the *What the World Eats* poster series.

Chad: The Aboubakar family of Bredjijng Camp

Expenditure on food for one week: 685 CFA francs, or \$1.23

One did the journal and came to me and said she was too embarrassed to put it in because of the amount and cost of what she ate. Others may have been embarrassed to put them in because they didn't want us to know how unhealthy their diet is. Others, it was sheer laziness. (Teacher)

FAMILY FOOD JOURNALS

This was a more successful exercise. Four families were recruited to keep a diary of everything they ate and drank for a week and also their shopping receipts. The families came from different locations within Clarence, were of different sizes, and in different income brackets. The aim was to be able to set up a display of each family's weekly food consumption at the Healthy Living Expo (see below).

Three families completed the task and the teacher and students purchased the food to create a visual display (see photos of the displays on the front cover of this report). The photos were to include the families, however, on the day, they were either unable to attend or unwilling to be photographed. None-the-less the graphic displays and the *What the World Eats* posters attracted a great deal of attention at the Expo.

The family journals turned out to be a really good thing to do because the students were all really surprised with the results and were able to compare it to their own journals and got quite a shock at how much their parents spend on food every week. (Teacher)

HEALTHY LIVING EXPO

This is a regular event at Rokeby High School. It is attended by students from the four feeder primary schools (Clarendon Vale, South Arm, Lauderdale and Rokeby) as well as the High School's own students: around 1000 students in total.

The morning of the Expo focuses on sporting activities and the afternoon on a range of other health related activities and displays including: healthy cooking; dental checks; drug and alcohol education; PCYC activities; safe partying; and local health service providers.

The catering teacher and her class are the organisers of this event, which made it an excellent opportunity to highlight the students' work on the Food Security project and also for them to carry out their own food survey.

The Expo was the big thing and brought it into perspective seeing what the younger kids got out of it. And I don't think the students realised how much they learned from doing the Expo, particularly the combination of activities – sport, cooking demonstrations, the play, the family food displays – it brought together all the components of a healthy lifestyle. (Teacher)

CLARENCE MUNICIPALITY STUDENT SURVEY

Prior to the Expo, staff from the Centre had two sessions with the students helping them to develop a Food Survey using the online application SurveyMonkey. This provided an opportunity for the students to discuss how to construct a survey and the use of both closed and open-ended questions.

The group decided that the aim of their survey was to find out more about students' consumption of both fruit and vegetables and take-aways which they hoped would provide some rich data on the eating habits of young people in Clarence for the TFARC researchers.

Rokeby High catering students doing a healthy cooking demonstration at the Healthy Living Expo



Since the respondents ranged in age from 9 to 16 and were to do the survey at the Expo in an activity filled environment, the survey needed to be appealing, easy to understand and quick to complete.

The final questionnaire (see Appendix 1) had just 12 questions and could be completed in around 10 minutes. Students from the catering class set up a booth at the Expo where they could sit with younger students to assist them and also talk about the project. Those who completed the survey were rewarded with a piece of fruit and all went in the draw for a \$50 gift voucher.

On the day there were technical difficulties which reduced the number of surveys that could be completed, so teachers who attended from the feeder schools were later sent the survey link and encouraged to make time in class for their students to complete it. The final result was 85 completed surveys. Twelve of these were removed from the analysis: ten because they were completed by people over 25 (teachers) and two because only the first two questions had been completed. Considering the age of the respondents the 73 remaining surveys were sensibly completed and the full results of these are provided at Appendix 2.

The most common age of respondents was 9 and the average age 10.4. Gender representation was approximately even and all respondents lived in Clarence Municipality, the most represented suburbs being South Arm (19.2%), Clarendon Vale (16.4%), Rokeby (13.7%) and Sandford (12.3%).

Breakfast for respondents the morning of the survey had overwhelmingly been home-cooked (93.2%), prepared by the student (63.0%) or a parent/relative (24.7%) and comprised either cereal (47.9%) or bread/toast (32.9%).

Tea the night before was generally home-cooked (87.7%) and prepared by a parent/relative (75.3%). There was a surprising diversity in meals, the most popular being red meat based (21.9%), noodles/pasta (12.3%) and fish (9.6%).

Lunch was generally either home-cooked (61.6%), and prepared by a parent/relative (52.1%) or the student (28.8%), with sandwiches/rolls/wraps being the staple for most students (61.6%).

The consumption of take-aways was surprisingly low for most meals: breakfast (1.4%), lunch (6.8%) and tea (9.6%). Perhaps the most encouraging result was the number of students who had eaten at least one serve

of fruit (72.5%) or two or more serves of fruit (41.3%) in the last 24 hours, compared to those eating at least one snack bar (28.8%) or two or more snack bars (6.3%).

Comments by students on their eating habits showed a reasonable level of thought about their diets:

I am very petercler about I eat

okay some times and other times healthy!

I love eating fruit but at the same i like eating fatning food to!

I try hard to have a healthy diet.

I eat grapes and apples

I am healthy.

its better to eat healthy foods

I ike helthy foods because I ike playing sports and having a helthy life stile and I ave aloveing of being helthy

POST PROJECT INTERVIEWS

A post-project interview session was held with the students and teacher to debrief and record their comments about participation in the project. The interviews were recorded and a summary transcript is provided at Appendix 3.

All 10 students were present for the interview however: two had only just returned to school after non-attendance for some time and were not willing to participate in the discussion; one who usually participates was angry at being there as she had been called in from another class and did not participate in the discussion; and two others indicated that they did not want to speak, but did eventually put in an occasional word.

Student responses to the question, "Has [involvement in the project] changed your feelings about what you eat? Or what you actually do eat?" were the most interesting:

Yes, I stopped eating unhealthy food and I told mum and dad about it and they stopped buying it. That's since the Expo. Like lots and lots of chips and lemonade and stuff. We just have lots and lots of fruit now.

It's changed me, but me in particular and not my family. If they go out and buy take-away, I stay home and cook something, because I can't stand take-away anymore. My sister sometimes stays home with me.

No, I don't eat much junk food.

No, I don't think my diet's healthy but I don't care. But I do eat healthy sometimes.

No, it hasn't changed me too much, because some foods are too good to give up. But I do eat healthy sometimes.

No, because we eat good food and don't eat much junk, although we have been lately because we've moved in to a new house and it's all we can afford now – junk food – the cheaper the better. We eat half in half good.

No, don't care.

Also the response of one student to the question, “Do you think that you've had an effect on anyone else?”

I had an effect on the family but some people in my family aren't very happy with it. My sister was a vegetarian but I've conned her, kind of into eating meat, because it's part of a healthy diet and she's eating less take-away.

The student and teacher responses in Appendix 3 are worth reading in detail and some extracts are used in the Conclusion below to illustrate learnings and issues from the project.

Other educational outcomes from the project

Due to the small size of the class involved in the project at Rokeby High it was decided to broaden the educational focus. In consultation with Anglicare Tasmania the following three components were added:

- 1 A training session for the four newly appointed TFARC researchers, introducing them to the global aspects of food security. This engaging training session is now available to teachers and other interested community members.
- 2 Creation of a “Food Security” page on the Centre's youth website. This can be viewed at youth.afaierworld.org/global/food.html. The Centre's youth website provides recommended links on a range of social justice issues specifically for young Tasmanians. The pages are intended as a starting point for students undertaking research and include on-line multimedia resources, local and global contacts.
- 3 Development of a Teacher Resource List on Food Security to complement the Centre's resource lists on other social justice issues. These lists provide descriptions of the best

resources available from our Global Learning Resource Library or on the internet. The Food Security Teacher Resource List is shown at Appendix 4.

As a result of the Centre's heightened awareness of Food Security as a local and global issue it was also decided to develop a student workshop. This was done as a joint undertaking with Oxfam Australia and incorporated materials from their Grow campaign (see www.oxfam.org.au/explore/grow-home). The Food Security Workshop, delivered jointly by the Centre and Oxfam Australia, was trialed at the Kids 4 Kids Conference (www.sustainableschools.tas.edu.au/kids4kids) at the University of Tasmania on 16 November 2011. The feedback from the workshop was very positive and the Food Security workshop is now advertised to schools alongside the Centre's other student workshops.

The Centre has subsequently decided that “Food Justice” will be the theme of its next *Fairer World Festival*. The Festival is the Centre's signature event and the largest youth social justice event in Tasmania. The 2011 Festival attracted over 1400 students from 52 schools over 4 days and won the Hobart City Council 2012 Australia Day Community Event of the Year.

Conclusion: issues and lessons from the project

The following extracts from the post-project interview provide a useful summary of what the teacher believes the students learned from the project and also the issues of their involvement.

What students learned:

The family journals turned out to be a really good thing to do because the students were all really surprised with the results and were able to compare it to their own journals and got quite a shock at how much their parents spend on food every week.

The Expo was the big thing and brought it into perspective seeing what the younger kids got out of it. And I don't think the students realised how much they learned from doing the Expo, particularly the combination of activities – sport, cooking demonstrations, the play, the family food displays – it brought together all the components of a healthy lifestyle.

Nutrition perhaps, although I think most of this community knows what is healthy and what's not, but they make their choices based on convenience or cost rather than health. The kids are teenagers and can be defiant and difficult

and the parents find it easier to give in.

I think that they did come to an understanding about research and why the survey was being done – that food security is important to their community. I think they got an idea of how complex research is – that it takes a lot of work. None of them would see it as a career – too much writing.

There's probably two or three of the ten who'd like to take it further and that it's made a real difference to.

Issues of involvement in the project:

Dynamics of the class and the high absenteeism rate.

Timeframe: I only see them twice a week at the end of the week – and we miss so many Fridays.

They chose to be in the group and to do the food security project – although there were only 6 in the class then.

They did miss their cooking and then some didn't come.

It was hard to know what was going to be best for this group. They had good, big, ideas – e.g. the photo journals – but then didn't follow through. They lack self-direction and don't like writing so can't maintain the enthusiasm.

I think I'd ask for more definite direction as to where we were going. I got frustrated at one stage about how I was going to engage these kids or what direction the project managers wanted us to go. In some ways, with this group, it would have been better for us to have a clearer direction i.e. being told "we would like you to research this" would have been so much easier.

It's very hard to engage them and get them to come up with something important. It's such a broad area it was hard to decide which direction to go. This is what we did in the end with the Food Survey. I think that's teenagers. It was a big daunting task.

I don't think they grasped how big this project is or really believed that anyone would be interested in what they had to say. I don't think they see their community as special.

It was different to the normal ruMAD? Project as we couldn't pick the purpose – that made it difficult to engage them.

I think it's important for them to get the report and see that they have done something useful.

This project conformed to our ongoing experience of working with schools and young people, perhaps best summarised as: challenging but worth it. Communication, time and differing expectations are always difficult gaps to bridge and this project was typical in that regard.

The teacher's comments highlight the difficulties in a program philosophy that values students' opinions and allows for self-direction when this is not commonly their experience of school.

The project might have been strengthened by working with a number of teachers and classes however this was not a viable option with the resources available to the school or the Centre.

The resources developed by the Centre – the adult and student workshops, the web page, and the teacher resource list – as well as our greater understanding of food justice will enable us to continue promoting Food Security as a local and global issue and supporting Tasmanian teachers in tackling the topic in their classrooms.

We are also looking forward to sharing this understanding and further promoting the issue at the 2013 *Fairer World Festival*.

References

Sustain 2011 'What is food poverty?' accessed 16/3/2011, <www.sustainweb.org/foodaccess/what_is_food_poverty>

More information

Detailed information about the Centre and ruMAD? in Tasmania can be found at www.afairerworld.org.

A detailed history of the Program at Rokeby High can be found at www.afairerworld.org/Current_projects/rokeby.html

What the World Eats posters (without the statistics) can be viewed at www.amusingplanet.com/2010/07/hungry-planet-what-world-eats-by-peter.html

Appendix 1: Food Security Survey of students in Clarence Municipality

[SURVEY PREVIEW MODE] Rokeby Healthy Living and Lifestyle Expo Surv... Page 1 of 3

Rokeby Healthy Living and Lifestyle Expo Survey

Exit this survey

***1. How old are you?**

Other (please specify)

***2. Are you a girl or a boy?**

Girl

Boy

***3. Where do you live?**

Acton Park

Clarendon Vale

Clifton Beach

Cremorne

Glebe Hill

Lauderdale

Oakdowns

Opossum Bay

Roches Beach

Rokeby

Sandford

South Arm

Other (please specify)

***4. Was your breakfast today:**

Home-cooked?

Take-away?

At a restaurant?

Other (please specify)

***5. For breakfast today:**

What did you have?

Who made it?

***6. Was your tea last night:**

Home-cooked?

^

http://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_T... 17/03/2012

Take-away?

- At a restaurant?
- Other (please specify)

*** 7. For tea last night:**

What did you have?

Who made it?

*** 8. Was your lunch yesterday:**

- Home-cooked?
- Take-away?
- At a restaurant?

Other (please specify)

*** 9. For lunch yesterday:**

What did you have?

Who made it?

10. How many of each of the following snacks have you had since lunch time yesterday? Do not include the food you've already told us about in the questions above.

Fresh fruit	<input type="text"/>
Nuts/seeds	<input type="text"/>
Dried fruit	<input type="text"/>
Soft drink	<input type="text"/>
Cordial	<input type="text"/>
Chips/crisps	<input type="text"/>
Snack/chocolate bar	<input type="text"/>
Lollies	<input type="text"/>
Sweet biscuit	<input type="text"/>
Cake/doughnut	<input type="text"/>
Cheese	<input type="text"/>

Noodles

Other

*** 11. Do you think the food and drink you've had since lunch yesterday was good for you? (Have you had a healthy diet in the last 24 hours?)**

- Yes
- No

12. Write here any comments you have about what you eat.

Done

Powered by **SurveyMonkey**
Create your own [free online survey](#) now!

Appendix 2: Results of Food Security Survey of students in Clarence Municipality

Question 1: How old are you?		
Answer Options	Response Percent	Response Count
8	5.5%	4
9	49.3%	36
10	13.7%	10
11	11.0%	8
12	2.7%	2
13	2.7%	2
14	6.8%	5
15	5.5%	4
16	2.7%	2
	100.0%	73

Q 2: Are you a girl or a boy?		
Answer Options	Response Percent	Response Count
Girl	50.7%	37
Boy	49.3%	36
	100.0%	73

Q 3. Where do you live?		
Answer Options	Response Percent	Response Count
Acton Park	11.0%	8
Clarendon Vale	16.4%	12
Clifton Beach	4.1%	3
Cremorne	0.0%	0
Glebe Hill	0.0%	0
Lauderdale	5.5%	4
Oakdowns	9.6%	7
Opossum Bay	6.8%	5
Roches Beach	1.4%	1
Rokeby	13.7%	10
Sandford	12.3%	9
South Arm	19.2%	14
	100.0%	73

Q 4. Was your breakfast today:		
Answer Options	Response Percent	Response Count
Home-cooked?	93.2%	68
Take-away?	1.4%	1
At a restaurant?	0.0%	0
No breakfast	5.5%	4
	100.0%	73

Q 5. What did you have for breakfast?		
Answer Options	Response Percent	Response Count
Cereal	47.9%	35
Bread/toast	32.9%	24
Nothing	8.2%	6
Other	11.0%	8
	100.0%	73

Q 5. Who made it?		
Answer Options	Response Percent	Response Count
Me	63.0%	46
Parent/relative	24.7%	18
Did not eat	8.2%	6
Other	4.1%	3
	100.0%	73

Q 6. Was your tea last night:		
Answer Options	Response Percent	Response Count
Home-cooked?	87.7%	64
Take-away?	9.6%	7
At a restaurant?	1.4%	1
Other (please specify)	1.4%	1
	100.0%	73

Q 7. What did you have for tea last night?		
Answer Options	Response Percent	Response Count
Noodles/pasta	12.3%	9
Red meat	21.9%	16
Chicken	11.0%	8
Fish	9.6%	7
Veggies	8.2%	6
Take-away: MacDonalds	4.1%	3
Take-away: Kentucky Fried Chicken	2.7%	2
Take-away: other	5.5%	4
Other	24.7%	18
	100.0%	73

Q 7. Who made it?		
Answer Options	Response Percent	Response Count
Me	6.8%	5
Parent/relative	75.3%	55
Take-away	12.3%	9
Other	5.5%	4
	100.0%	73

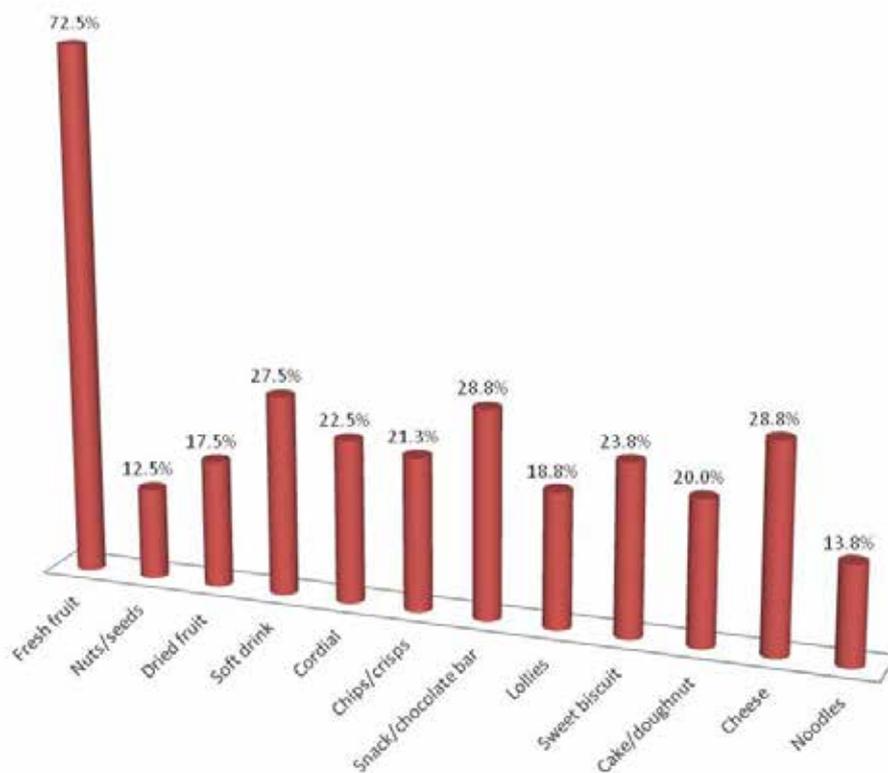
Q 8. Was your lunch yesterday:		
Answer Options	Response Percent	Response Count
Home-cooked?	89.0%	65
Take-away?	5.5%	4
At a restaurant?	0.0%	0
Nothing	5.5%	4
	100.0%	73

Q 9. What did you have for lunch yesterday?		
Answer Options	Response Percent	Response Count
Sandwich/roll/wrap	61.6%	45
Chips	2.7%	2
Other	23.3%	17
Take-away	6.8%	5
Nothing	5.5%	4
	100.0%	73

Q 9. Who made it?		
Answer Options	Response Percent	Response Count
Me	28.8%	21
Parent/relative	52.1%	38
Take-away/school canteen	6.8%	5
Didn't eat	5.5%	4
Other	6.8%	5
	100.0%	73

Q 10. How many of each of the following snacks have you had since lunch time yesterday? Do not include the food you've already told us about in the questions above.		
Answer Options	Response Percent	Response Count
Fresh fruit	72.5%	58
Nuts/seeds	12.5%	10
Dried fruit	17.5%	14
Soft drink	27.5%	22
Cordial	22.5%	18
Chips/crisps	21.3%	17
Snack/chocolate bar	28.8%	23
Lollies	18.8%	15
Sweet biscuit	23.8%	19
Cake/doughnut	20.0%	16
Cheese	28.8%	23
Noodles	13.8%	11
		80

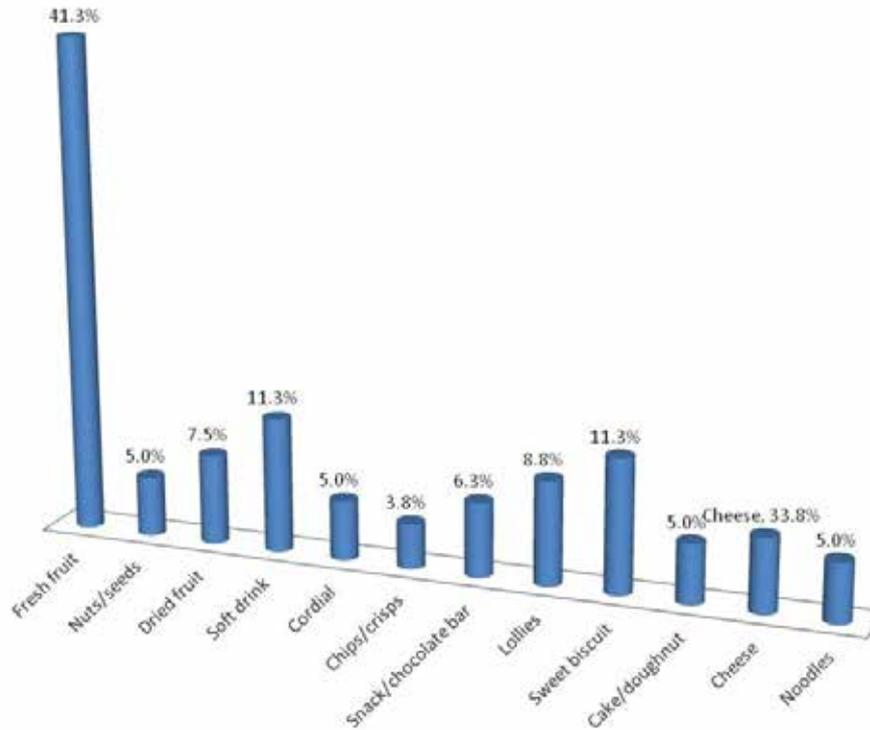
Percentage of respondents who ate at least one serve of these snacks in the previous 24 hours



Q 10. How many of each of the following snacks have you had since lunch time yesterday? Do not include the food you've already told us about in the questions above.

Answer Options	Response Percent	2 or more of this snack
Fresh fruit	41.3%	33
Nuts/seeds	5.0%	4
Dried fruit	7.5%	6
Soft drink	11.3%	9
Cordial	5.0%	4
Chips/crisps	3.8%	3
Snack/chocolate bar	6.3%	5
Lollies	8.8%	7
Sweet biscuit	11.3%	9
Cake/doughnut	5.0%	4
Cheese	6.3%	5
Noodles	5.0%	4
Other	0.0%	
		80

Percentage of respondents who ate more than one serve of these snacks in the previous 24 hours



Q 11. Do you think the food and drink you've had since lunch yesterday was good for you? (Have you had a healthy diet in the last 24 hours?)

Answer Options	Response Percent	Response Count
Yes	74.7%	56
No	25.3%	19
	100.0%	75

Q 12. Write here any comments you have about what you eat.

okay some times and other times healthy!
i think i did well
I love eating fruit but at the same i like eating fatning food to!
I try hard to have a healthy diet.
I'm good.
I eat grapes and apples
I am healthy.
they are nice and sweet but not good for your amune system.
its better to eat healthy foods
The fruit was yummy.
I eat well.
they are nice but not good at all.....
they are nice but not good
bad and good

i am healthy
I' am very petercler about I eat
I ike helthy foods because I ike playing sports and having a helthy life stile and I ave aloveing of being helthy
I licke healthy food
It is better than eating junk food !
its all right what i eat.
i dont no what to eat.....
i don-t like sugur stuff and i only like water and i hate chocolate and all that stuff
i had some un-healthy and some healthy
i eat fruit every day and i eat some sweets sometimes
i have good foods
Fish is yum!
I always home maked my food.
It is yummy.
Didn't eat.
I eat good most of the time.
I eat well.
I also had water
I try to eat healthy as much as possible.
I eat lots of lollies and fruit to
I only eat fruit and vegis and noodles.
I AM HEALY
i love fruit and vegies and i love sport
I love my fruit and vegies and im very sporty
I have eaten some bad and good food but I barely eat anything all day every day.
Al right
gluten free food/ almost no junk food
in luv 2 eat apple,orange
It was a good essay
i don't eat lollies that much
none :D
varity of fruits and vegetables, a long with snack like loolies and stuff.
I eat alot of bad food



Appendix 3: Focus Interview with Rokeby High students and teacher at the end of the project

Friday December 16, Rokeby High

All 10 students were present for the interview however: two had only just returned to school after non-attendance for some time and were not willing to participate in the discussion; one who usually participates was angry at being there as she had been called in from another class and did not participate in the discussion; and two others indicated that they did not want to speak, but did eventually put in an occasional word.

REQUIREMENTS: LAPTOP WITH SOUND RECORDER.

Aim: To nurture an open and safe environment in order to elicit students honest ideas and opinions about their involvement in the Food Security Project this year.

INTRODUCE PURPOSE OF THE INTERVIEW:

Thanks students for participating in the project this year.

So that we can improve what we do, it's useful for us to know what worked and what didn't, what you enjoyed and what you didn't. Best way to do this is to ask you.

Also, the project was funded by the Tasmanian Govt (through Food Security Council). They are interested in knowing how useful their money has been to achieving their aims.

The research project aims to identify and improve understanding of food access in the Clarence and Dorset municipalities. It will do this by seeking an in-depth understanding of issues with food access and supply through both

quantitative data and as seen through the eyes of people living in the areas.

GROUND RULES

- YOU TO DO THE TALKING
- THERE ARE NO RIGHT OR WRONG ANSWERS
- WHAT IS SAID IN THIS ROOM STAYS HERE
- WE WILL BE RECORDING THE SESSION (we want to capture everything you have to say, but names will not be included in the transcript.)

WARM-UP

Test sound recorder around the group.
do, ra, me, fa, so, la, te, do

3 favourite ethnic foods: time whole group response.

REVIEW ALL THE THINGS THEY DID AS PART OF THE PROJECT

- 1 Research with Ms Gillham on food security, looked at Hungry Planet posters etc.
Generally there was not great recall of this by the students except from the posters i.e. what different people in the world eat.
- 2 Workshop with Jeremy & Helen on:
 - Food & water game: Good recall of this game.
 - Watched Miniature Earth: Some recall: about people from other countries, it was sad.
 - Brainstormed reasons for hunger/poor nutrition locally & globally: Very good recall of reasons for hunger.
 - Learned about the MDGs: One girl remembers well and could recall MDG 1. Reasonable recall of who, why, timeframe.

- 3 Session with Ann Hughes from Anglicare and Helen:
Looked at the pilot survey to be done in the community: Remember looking at/doing pilot survey.
- 4 Personal food photo journal: No one has done them because they're "slackos"; disposable cameras didn't work; most started keeping a record.
One girl wouldn't submit her journal because after doing it she was embarrassed by how much she ate and how much it cost.
- 5 Family photo journals: Good recall of what they did and why.
- 6 Healthy Living & Lifestyle Expo: It was interesting, played different kinds of sports, took young kids around to different things, ate a healthy lunch, played games; the display of family journals was interesting to people.
- 7 Food survey:
 - Worked with Jeremy to design the survey: Still getting more people to do this.
 - Surveyed students at the Expo: Technical issues doing the survey on the day.

STUDENT QUESTIONS

Now we have just 7 questions to ask about the project and everyone will have a chance to respond to each question.

What was the best thing about the project?
What did you most enjoy? Find most interesting?

Getting experience with the younger kids [at the Expo] and showing them around.

The play at the Expo [by four grade 7 kids: a comedy involving vegetables!] – it was really fun.

The healthy cooking demonstration.

The family food displays, because it was really interesting to see how different.

Organising the Expo.

What parts did you least enjoy?

It was all pretty fun.

Missing out on cooking, which we would have been doing otherwise.

The writing work instead of getting out and doing stuff.

What would you tell your family about this project?
Your friends?

I told my family about the Second Bite and the other organisations.

Some families already knew it all as they are involved with the community centre etc.

"I don't tell them nothing."

I told my dad about the idance activity at the Expo – that was really fun.

What have you learned? What sticks in your mind about food security?

It's surprising how much people spend on junk food in a week. [Family photo journal.]

About different countries spending different amounts of money on food. [Food & Water game]

Has it changed your feelings about what you eat?
Or what you actually eat?

Yes, I stopped eating unhealthy food and I told mum and dad about it and they stopped buying it. That's since the Expo. Like lots and lots of chips and lemonade and stuff. We just have lots and lots of fruit now.

It's changed me, but me in particular and not my family. If they go out and buy take-away, I stay home and cook something, because I can't stand take-away anymore. My sister sometimes stays home with me.

No, I don't eat much junk food.

No, I don't think my diet's healthy but I don't care. But I do eat healthy sometimes.

No, it hasn't changed me too much, because some foods are too good to give up. But I do eat healthy sometimes.

No, because we eat good food and don't eat much junk, although we have been lately because we've moved in to a new house and it's all we can afford now – junk food – the cheaper the better. We eat half in half good.

No, don't care.

Do you think that you've had an effect on anyone else? Friends? Family? Others?

I had an effect on the family but some people in my family aren't very happy with it. My sister was a vegetarian but I've conned her, kind of into eating meat, because it's part of a healthy diet and she's eating less take-away.

Maybe on the younger children who came to the Expo.

Is there anything else you would like to say about your involvement in the Food Security Project?

I quite enjoyed the game because it was a good way for us to learn about other countries and what they spend their money on and what they can afford [Food game]

It was good organising the Expo.

Thank you for being a part of the project, your honesty and participation.

TEACHER INTERVIEW

(Note: before questions review project activities per 4 above.)

Which learning activities do you think were the most effective? And why?

The [Food] game was great to give them a broader perspective.

It was really difficult to find things to motivate this group.

The family journals turned out to be a really good thing to do because the students were all really surprised with the results and were able to compare it to their own journals and got quite a shock at how much their parents spend on food every week.

The Expo was the big thing and brought it into perspective seeing what the younger kids got out of it. And I don't think the students realised how much they learned from doing the Expo, particularly the combination of activities – sport, cooking demonstrations, the play, the family food displays – it brought together all the components of a healthy lifestyle.

I think it would have been really valuable to do a cost breakdown on cooking a hamburger etc. compared to buying it as a take-away.

Which were the least effective? And why?

Trying to get them to input to the process. It was the dynamic of the group. 3 or 4 joined more than half-way through the year. Unless it was hands-on, I couldn't get them to be self-directed.

That was really hard work.

They didn't get into the photo-journals which surprised me. Only 3 put anything on paper.

One did the journal and came to me and said she was too embarrassed to put it in because of the amount and cost of what she ate.

Others may have been embarrassed to put them in because they didn't want us to know how unhealthy their diet is.

Others, it was sheer laziness.

What do you think that the students have learned from this project? On food security? On personal nutrition? About their community? About the world? About research? Other?

Nutrition perhaps, although I think most of this community knows what is healthy and what's not, but they make their choices based on convenience or cost rather than health.

The kids are teenagers and can be defiant and difficult and the parents find it easier to give in.

I think you'll find big differences between the surveys from the different primary schools as they are in very different socio-economic areas.

I think that they did come to an understanding about research and why the survey was being done – that food security is important to their community. I think they got an idea of how complex research is – that it takes a lot of work. None of them would see it as a career – too much writing.

There's probably two or three of the ten who'd like to take it further and that it's made a real difference to.

What were the biggest barriers/issues for you? Resources, people, admin, time...

Dynamics of the class and the high absenteeism rate.

Timeframe: I only see them twice a week at the end of the week – and we miss so many Fridays.

They chose to be in the group and to do the food security project – although there were only 6 in the class then.

They did miss their cooking and then some didn't come.

What were the best/most useful things? Resources, people, admin, time...

The resources were good, but probably more than I needed confused me a bit as to which direction

to lead them in, because I did have to lead them because they wouldn't make their own choice.

It was hard to know what was going to be best for this group. They had good, big, ideas – e.g. the photo journals – but then didn't follow through. They lack self-direction and don't like writing so can't maintain the enthusiasm.

In the brainstorm they showed a good knowledge of the issues but when it comes to them writing anything.

What have been the benefits from participating in this project: For you as a teacher? For the students? For the school?

For the school it showed the community that we're proactive with the community.

Some of the students got really positive feedback. Others learned how difficult it is.

I got a lot out of it. I really enjoyed the family journals – it was very interesting.

Is there anything else you would like to say about your involvement in the Food Security Project?

I think I'd ask for more definite direction as to where we were going. I got frustrated at one stage about how I was going to engage these kids or what direction the project managers wanted us to go. In some ways, with this group, it would have been better for us to have a clearer direction i.e. being told "we would like you to research this" would have been so much easier.

It's very hard to engage them and get them to come up with something important. It's such a broad area it was hard to decide which direction to go.

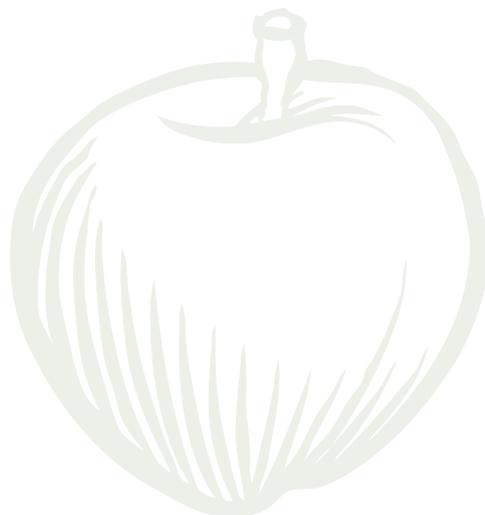
This is what we did in the end with the Food Survey. I think that's teenagers. It was a big daunting task.

I don't think they grasped how big this project is or really believed that anyone would be interested in what they had to say. I don't think they see their community as special.

It was different to the normal ruMAD? Project as we couldn't pick the purpose – that made it difficult to engage them.

I think it's important for them to get the report and see that they have done something useful.

Thank you for being a part of the project, your honesty and participation.



Appendix 4: Teacher Resource List



a fairer world
The Tasmanian Centre for Global Learning

Food Security Teaching Resources

TCGL recommend the following resources as being some of the best that are currently available from our library and on the internet (March 2012).

(P) primary (S) secondary

Books and Kits

(P) *The World in a Supermarket Bag* [Booklet] (n.d.) Oxfam

An activity for 7-11 year olds which demonstrates the global diversity of the origins of the food on our supermarket shelves.

(P) *One Hen: How One Small Loan Made a Big Difference* [Text] Smith Milway, K (2008) Kids Can Press

The story of a West African boy who receives a small loan to buy a hen, and takes flight as an entrepreneur. This children's book is supported by a comprehensive website [One Hen: microfinance for kids](#) which contains a variety of interactive activities and lesson plans.

(P) *The Whole World Cake* [Kit] Lewis, W. (1994) UNICEF

A teaching resource for use with 8 to 11 year olds about where our food comes from. It can be used very flexibly, from a brief look at the basic ingredients through to examining the people (farmers) and the issues they face. The kit includes background information, teaching activities and posters/photographs.

(P) *The Little Cooks: recipes from around the world for boys and girls* [Text] (1994) Christian Aid

Beautifully presented recipes from 32 different countries.

(P) *The Challenge of Hunger* [Kit] (1993) World Vision

A group discussion activity about the reality of hunger and what can be done about it.

(P) *Food first curriculum: An integrated curriculum for Grade 6* [Text] Rubin, L. (1984) San Francisco: Institute for Food and Development Policy

The aim of this book is to help students learn about the paths of the different foods they eat, the causes of hunger and how they can take action. While the resource is dated, it provides a variety of good activities to engage students in the topic and encourage critical thinking skills. It is primarily aimed at grade 6 students, but modifications are included for grades 4-5 and 7-8.

(P/S) *Hungry Planet: What the World Eats* [Kit] Menzel, P & D'Aluisio, F (2008) Tricycle Press

This kit is one of the best resources we've seen and can be used across the curriculum. It includes a hardcover book, twelve posters and a curriculum guide. The book presents a photographic study of families from around the world, revealing what people eat during the course of one week. Each family's profile includes a detailed description of their weekly food purchases; photographs of the family at home, at market, and in their community; and a portrait of the entire family surrounded by a week's worth of groceries. The comprehensive curriculum guide includes critical thinking questions, writing prompts, activities, reading strategies, and a PowerPoint presentation.

(P/S) *Global Poverty and the Millennium Development Goals: an education kit* [Kit] (2010) Tasmanian Centre for Global Learning & Bahay Tuluyan

This kit contains four easy and fun simulation workshops (including all materials needed, discussion and extension activities) illustrating the difficulties many children and adults in developing countries face. The workshop focusing on accessing nutritious food and safe water is suitable for Grades 3 to 12.

(P/S) *Dust* [Text] Thompson, C. (2007) Sydney: ABC Books

This book, short listed for the Children's Book Council of Australia Awards Picture Book

of the Year – 2008, has multiple illustrators. Inspired by the 2005 famine in Niger Africa, it is a simple story that, combined with the illustrations, provides opportunities for discussion on the effects of poverty. It is recommended for upper primary and secondary students only, due to the confronting nature of some of the images.

(P/S) *A “silent tsunami”: Global food security in the 21st century* [Text] Smith, R. (2008) Global Education Project

This 32 page resource for middle school students investigates the issue of food security, equity and sustainability. It explores questions about the issues behind food security, distribution of food and the impact of rising prices, increasing populations and demand for energy. Informative and well set out, with varied and interesting activities.

(P/S) *Food for all* [Text] Wildy, M. & Smith, F. (2008) Global Education Project

A useful resource, this book introduces teachers to factors contributing to food security for all people, particularly the 852 million who are unable to obtain an adequate supply of food throughout the year. It includes background information and a wide variety of teaching activities across all learning areas.

(P/S) *Get Connected: Global Food Crisis* [Booklet] (2009) World Vision

Designed specifically for Australian upper-primary and lower secondary classes, this is an excellent resource containing information, case studies and simple classroom activities. Supplementary resources for this issue are available at [World Vision](#).

(P/S) *World Feast Game* [Kit] (2002) Global Education Centre

A simulation activity for primary and middle school students, which aims to: illustrate how trading relationships can work for and against different countries in the world; explore relationships between resources of a country and that country’s ability to feed its people; and encourage students to question injustices in the world and to analyse the causes.

(P/S) *The Food Book* [Text] (1990) New Internationalist

An introduction to the foods of the world, the cultures and the people behind them, this book includes 250 recipes from Africa, Asia, Latin America and the Middle East.

(P/S) *Food Security: a compilation of teaching activities* [File] TCGL

A variety of teaching activities & lesson plans which focus on food. Activities cover the curriculum areas of science, history, English and maths.

(S) *Global Issues: Global Food Crisis* [Magazine] (2008) Global Education Centre

Teaching activities and ideas for action.

(S) *Go Global: Global perspectives in the secondary classroom* [Text] Triolo, R. (2000) Curriculum Corporation

Chapter 2 – Food for all: food security

Detailed activities and ideas for secondary students.

(S) *Southern Perspectives on Development: Distribution of People and Resources* [Text] Renton, L (1996) Development Education Project

Teaching and student activities which focus on food supply and distribution. Upper secondary.

(S) *Ending Hunger: How far can we go?* [Booklet] Duncan, B. (2005) Australian Catholic Social Justice Council

Reference paper which argues that extreme poverty is preventable, while documenting the challenges facing the wealthy nations if they are prepared to work towards their stated goal.

CD-ROMS and DVDs

(P) *Developing Global Citizens* [CD ROM] Global Education Project, 2010

Unit: Food for all?

This teaching unit has been developed for Grade 5 and 6 students and includes detailed activities, focus questions, country fact files and worksheets. Teacher notes are provided, including an assessment rubric.

(P/S) *Eat Well Grow Well Communities* [DVD] Eat Well Tasmania, 2010

The DVD and accompanying online manual aims to empower communities to establish and maintain school and community gardens; inspire community groups, schools, local and state governments to initiate, drive and support

garden programs and educate people on the benefits of growing their own food.

Games

The Farming Game (n.d.) Oxfam

This game is designed to show the dangers faced by farmers worldwide and the risks that must be taken to ensure survival. Upper primary/secondary.

Periodicals

While periodicals are not for loan, TCGL can find and scan/photocopy articles of interest.

Posters

The TCGL library has a range of posters on food, including the stunning Hungry Planet series: a set of 12 posters showing families in their homes with a week's worth of food displayed around them.

Online teaching resources

A Fairer World Youth
youth.afaairerworld.org/global/food.html

A safe site to send your students to research issues. Provides links to a variety of multimedia including films and interactive games.

World Food Programme
www.wfp.org/students-and-teachers/classroom-activities

Information and classroom activities for primary and secondary students.

British Red Cross
www.redcross.org.uk/What-we-do/Teaching-resources/Teacher-briefings

Covers the background, modern relevance and significance to students, plus lesson ideas and activities.

Hunger Notes
www.worldhunger.org

Fact sheets, quizzes, downloadable posters.

Global Education
www.globaleducation.edna.edu.au/globaled/go/pid/177

Food security information and teaching activities for primary and secondary.

Feeding Minds Fighting Hunger
www.feedingminds.org/fmfh/home/en/

Lesson ideas for primary and secondary teachers, along with general information, maps and definitions.

Free Rice
www.freerice.com

Student participation in the numerous quizzes assists the World Food Programme.

One Hen: Microfinance for Kids
onehen.opportunity.org

Information and teaching resources based on the book *One Hen: How One Small Loan Made a Big Difference* (available from our library).

The Good Garden
www.thegoodgarden.org

Information and teaching resources based on the book *The Good Garden: How One Family Went from Hunger to Having Enough*.

Global Gang
learn.christianaid.org.uk

PowerPoints, lesson and presentation ideas.

Oxfam America
actfast.oxfamamerica.org/index.php/events/banquet

Downloadable materials to hold a Hunger Banquet.



