Opportunities for Planning to Support and Enhance Urban Food Production in New Zealand

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The security of food provision has implications for community resilience and sustainability, yet is often subsidiary to traditional planning focuses, such as infrastructure and key service provision. New Zealand’s population is increasingly urbanized, with food supplies predominantly sourced from outlying rural areas or through international trade. Extending opportunities for urban food production has been suggested as a way to improve urban sustainability, resilience and local food security. There has been minimal research on urban food production initiatives in New Zealand, and even less on how planning processes interact with such initiatives. This thesis examines current examples of urban food production in order to identify opportunities for planning and local councils to support and enhance urban food production in New Zealand.

Applying a qualitative case study approach to Nelson, Dunedin and Waitakere, thirty-two key informants involved in urban food production at a community, institution, or council level were interviewed about their experiences. The results identified that objectives motivating urban food production coincide with several of the community outcomes established by local councils; that local councils currently facilitate urban food production in a number of ways; but that some barriers to urban food production also stem from local council practice. Drawing on suggestions from urban food producers, identified barriers, existing good practices, and international literature, eleven recommendations for local councils were generated. These recommendations address macro level, planning or structural level, and specific micro level projects, and suggest opportunities for planning to support and enhance food production in urban areas. The knowledge gained through this research contributes to an under-researched field. It also helps to inform and suggest steps forward in improving support for urban food production, contributing to knowledge regarding sustainability issues and urban New Zealand areas.
…this thesis is dedicated to positive change
in a world full of opportunity…
Acknowledgements (insert colour)
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Introduction

1.1. Introduction

Planners aim to improve community welfare and achieve broad social objectives such as health, accessibility and amenability, through addressing physical elements of place (American Planning Association, 2009; Howe, 2001; Rohe, 2009). In the New Zealand context, planning is described as “concerned with the design, function and quality of cities, regions, towns and natural environments” (The New Zealand Planning Institute, 2009: n.p.). Urban sustainability theories are becoming increasingly popular in planning literature. They are a response to problems associated with urbanisation, and frequently include elements of urban food production (Mendes et al., 2008). Despite scholars such as Pothukuchi and Kaufman (1999) identifying an important role for both planning and municipal authorities in urban food systems, food issues receive limited attention from these bodies, particularly in industrialised Western nations (Howe and Wheeler, 1999).

The importance of good governance and planning tools for improving local food systems and food security are highlighted by Ingram et al. (2008) and Koont (2009). Additionally, while much planning work is reactive, Newman et al. (2009) and Lang (1999) suggest it is important to take a proactive and progressive approach towards food security, establishing resilient, sustainable and functioning systems well before a crisis situation. There is scant research exploring how New Zealand planning processes interact with urban food production. Through looking at examples and lessons from current urban food production in New Zealand, this research aims to
increase knowledge on how planning, within its relevant frameworks such as local councils, can support and enhance local food production in urban New Zealand communities. Such knowledge is intended as a contribution towards making New Zealand cities more sustainable and resilient.

1.2. Food Security: Global Theory to Local Practice

Food security was defined by the United Nations Food and Agriculture Organisation (FAO) (2006:1) at the 1996 World Food Summit in Rome, as when:

all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Measuring and assessing the food security of a community, as defined above, is a complex and difficult process based on current and future variables (Maxwell et al., 2008). Food security has been seen as a lack of hunger (Erickson, 2008; World Bank, 2006; Rush et al., 2007), as an environmentally and socially sustainable food supply (Vitousek, 1997; Lezberg, 1999; Maxwell and Wiebe, 1999), a human right (Riches, 1999; Food and Agriculture Organisation, 1998), and as an equity, power and welfare issue (Johnson and Baker, 2005; Mowbray, 2007). However, all food security is underpinned by, or is the outcome of an effective food system – “a system including elements of food production, processing, packaging and distribution [or access], as well as retailing and consuming food” (Ingram, et al., 2008:9; see also Ericksen, 2008). For the purposes of this thesis, food security is defined as by the FAO, above, with additional concepts of sustainability and social justice, as suggested by Bellows and Hamm (2002). It is therefore: “when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (FAO, 2006:1), through a sustainable and socially just food system.

The problems associated with insecure access to food are not new, but in 1974 the World Food Conference in Rome focused global attention declaring a “common
responsibility of the international community to abolish hunger” (Aziz, 2002). Historically in the Western world, economic recessions, world wars, international contamination scares and pandemics have generated examples and highlighted the importance of strengthening and diversifying factors contributing towards food security. More recently environmental concerns and Barling et al.’s (2008:13) “new fundamentals”, including climate change, energy scarcity, population growth, and water supply, are raising the profile of current food system weaknesses, highlighting potential drawbacks to heavy reliance on centralised and international food supplies.

Current food system limitations, along with internationally recognised global food crises, a responsibility to prevent and alleviate hunger, and the ‘human right’ to food, have emphasised the importance of generating food security at a local scale. Norberg-Hodge et al. (2002:99), suggest food security can be significantly increased through “shifting towards the local”, and advocate for local food production. Additional benefits attributed to local food production activities, including social, environmental, health, and economic gains are also important (Baker, 2004; Irvine, et al., 1999). Local food production can be developed while still maintaining international systems, thereby diversifying food provision (Norberg-Hodge et al., 2002:99). Diversification is seen here as an increased range of food production and procurement methods available to a community, therefore reducing local vulnerability by offering alternatives alongside the dominant food systems, strengthening local resilience to external shocks and increasing community autonomy in the areas of food production, processing, distribution and access (Newman et al., 2009; Hopkins, 2008; Heller and Keoleian, 2002).

1.3. The Research
Research by Ingram et al. (2008) and Ericksen (2008) suggests that food system components range from issues around production right through to consumption. This thesis focuses on production as it is one starting point of the food system, and receives little attention in urban areas. For the purposes of this research, urban food production is defined as the production of vegetables, fruit, nuts and berries, within the local council jurisdiction boundary. The urban food production initiatives
included in this study were community, institution and local council activities. Community level activities were initiatives undertaken both formally and informally by a group that had been created for the purpose of urban food production. Institution level activities were initiatives undertaken within a formal community whose primary activity was not urban food production, for example a school, church or retirement village. Local council level activities considered were urban food production initiatives undertaken specifically by the local council itself.

A qualitative approach was taken to elicit the experiences of urban food production in three New Zealand research locations, namely Waitakere, Nelson and Dunedin (discussed below). Primary data was collected through field visits in June and July 2009. Data was obtained through site visits to areas where urban food production was taking place and interviews with individuals involved or interested in such initiatives. Data collection was focused on addressing four research objectives, listed below, and sought to establish a comprehensive picture of the types of urban food production undertaken within the research locations and the issues they faced, and to identify successful practice examples. In summary, the research sought to:

1. Identify what urban food production initiatives are currently undertaken in the research locations;
2. Identify motivations and facilitative elements, as well as the barriers to urban food production;
3. Consider how local councils are currently supporting or inhibiting urban food production initiatives;
4. Generate key recommendations for local councils as to how planning can contribute to foster urban food production in New Zealand.

Data was collected from three separate locations, but it was analysed around key themes and common experiences, rather than around specific experiences connected to each location. The locations were selected in order to represent a diversity of experiences and contexts throughout New Zealand, and the resulting recommendations apply to New Zealand urban food production as a whole. As Figure 1 demonstrates, the four research objectives built upon each other to address the principal aim of the thesis, which is to identify how planning can support and enhance
urban food production in New Zealand. Overall, this thesis intends to contribute to improved planning practice in this area and towards the generation of urban environments throughout New Zealand where food production is a viable option.

![Diagram illustrating how the four research objectives lead to the thesis aim.](image)

**Figure 1**: Diagram illustrating how the four research objectives lead to the thesis aim.

In addressing research objective 1, urban food production initiatives currently undertaken at these three levels - community, institution and local council - are identified in each of the research locations. This initial characterising of urban food production sets out the foundations and parameters of the study. It identifies the different ways urban food production is being expressed in the research locations’ context and who is involved. Recommendations produced at the end of this study are based upon information from the experiences of these identified urban food
production activities, and inform how local councils, in these three urban centres and around New Zealand, can better support them.

Under research objective 2, the motivations and experiences of current urban food production initiatives in the research locations are identified. This distinguishes enabling and inhibiting factors, as well as features that encourage or restrict the forms urban food production takes. Identifying motivations and facilitative elements demonstrates potential inroads for planning support nationwide, and also clarifies the inspiration behind urban food production. Therefore, support appropriate for the desired outcomes can be recommended. Identifying current barriers highlights problems that planning could address. Research objective 3 also closely examines the experiences of urban food production initiatives, with a specific focus on the interface between initiatives, local council frameworks and planning contexts. Local council and planning documents are also analysed. Research objectives 2 and 3 allow identification of areas where planning support may be appropriate, as well as current gaps in planning support. This information also allows the recommendations to concentrate on existing problem areas and to prioritise particularly unsupported issues, as well as looking forward for future support opportunities.

Finally, research objective 4 calls for the development of recommendations. The recommendations arise from challenges and successful experiences of urban food initiatives in the research locations, and the international literature, as well as from interviewees’ own recommended changes. Combined with an understanding of local council frameworks and planning tools, these recommendations identify how planning could play a role in addressing current issues and shaping positive change for urban food production in the New Zealand context.

1.4. The New Zealand Context
New Zealand’s geographic isolation leaves the country vulnerable to several identified weaknesses of centralised international food systems. Because of this vulnerability, adopting a proactive planning approach to addressing potential food supply problems is particularly important. Planning in New Zealand is primarily
undertaken through local government, as set out in the Local Government Act 2002 (LGA) and the Resource Management Act 1991 (RMA), both of which have a sustainability focus. The RMA is known for its endorsement of sustainable management, but Freeman and Buck (2002) point out that it notably overlooks urban areas. The LGA also addresses sustainability, as identified by Heron (2006:444), who suggests the 2002 version resulted from a debate on government involvement with sustainability, concluding “everything that local government does must be sustainable”. The purpose of local government, under Section 10 of the LGA (2002) is:

(a) to enable democratic local decision-making and action by, and on behalf of, communities; and

(b) to promote the social, economic, environmental, and cultural well-being of communities, in the present and for the future.

Similar to international understanding of planning roles, local government in New Zealand, especially under Section 10(b), has the ability and potentially the responsibility to support sustainable activities such as urban food production, to achieve its purpose as set out in national legislation. There are two types of local government in New Zealand: regional councils, and territorial councils. The responsibilities of territorial councils and regional councils as described by Local Government New Zealand (2008), are presented in Table 1.

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1 Territorial councils include city, district, and unitary councils (Local Government New Zealand, 2008)
**Table 1:** Responsibilities of territorial and regional councils (Source: Local Government New Zealand, 2008)

<table>
<thead>
<tr>
<th>Territorial Councils</th>
<th>Regional Councils</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Community well-being and development</td>
<td>• Resource management (quality of water, soil, coastal planning etc)</td>
</tr>
<tr>
<td>• Environmental health and safety (including building control, civil defence, and environmental health matters)</td>
<td>• Biosecurity control of regional plant and animal pests</td>
</tr>
<tr>
<td>• Infrastructure (roading and transport, sewerage, water/stormwater)</td>
<td>• River management, flood control and mitigation of erosion</td>
</tr>
<tr>
<td>• Recreation and culture</td>
<td>• Regional land transport planning and contracting of passenger services</td>
</tr>
<tr>
<td>• Resource management including land use planning and development control</td>
<td>• Civil defence (natural disasters, marine oil spill)</td>
</tr>
</tbody>
</table>

In defining urban areas in New Zealand, Statistics New Zealand (2009b, n.p.) classifies “main urban areas” as having “a large urban area centred on a city or major urban centre … with a minimum population of 30,000”. A city, defined by the Local Government Act (2002), has a minimum population of 50,000 and is predominantly urban in character. According to Statistics New Zealand (2009a) New Zealand’s population is increasingly urbanised, and current literature suggests urban food production has potential to contribute significantly towards urban sustainability; therefore an urban focus has been undertaken by this research.

Since the jurisdiction of territorial councils (hereafter referred to as local councils) most directly addresses city and urban areas, these are the local government bodies focused on in this research. To achieve the research objectives, a qualitative case study approach was selected, gathering data from three urban research locations, namely Waitakere, Nelson and Dunedin. These specific research locations were selected to help capture a wide variety of experiences gathered from diverse contexts.

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2 See: Local Government Act 2002, Schedule 3, Part 1, Subpart 1, Number 7 (a), (b) and (c).

3 Statics New Zealand (2009) figures suggest 72 per cent of New Zealand’s population lives in 16 ‘main urban areas’.
As detailed below, Waitakere and Dunedin are, by definition, ‘cities’, while Nelson is considered a ‘main urban area’. There is diversity amongst the geographical location, size of population and urban area, as well as demographic and council approach of each location. In selecting these locations a broad representation of the opportunities present in diverse New Zealand contexts was sought. Because the aim is for nationwide recommendations, this research does not analyse each location’s experience in relation to their individual context, but instead in relation to potential for New Zealand-wide application of planning support for urban food production. The relative geographical positions of the research locations can be seen in Figure 2, and their individual contexts are now summarised.

### 1.4.1. Waitakere City

Waitakere, located in the north-east of the North Island, is one of eight districts making up Auckland. The Waitakere District is 367 square kilometres, approximately one third of which is urban (Waitakere City Council, 2009). Local landscapes include coastlines and mountain ranges with both urban and horticultural land in between fed by numerous rivers and streams running from the Waitakere Ranges. Its soil is high in clay, making fertility low, and climatically Waitakere receives a high 1,200-2,000mm per year of rain (Waitakere City Council Plan, 2007).

Te Kawerau a Maki and Ngati Whatua are the tangata whenua\(^4\) of Waitakere City, who traditionally considered the area plentiful in food (Waitakere City Council Plan, 2007). One area in particular, Ohapoko, was known as a gardening area (Waitakere City Council Plan, 2007). Since European settlement, Waitakere history has included horticulture, and areas such as Oratia were at one time known as the ‘fruit bowl of Auckland’ (Waitakere City Council, 2009c:6).

Waitakere currently has a population in excess of 186,000 (Statistics New Zealand, 2009c), making it the fifth largest city in New Zealand. 13.1% of Waitakere’s population is Māori. Waitakere City Council adopted an eco-city strategy in 1993, inspired by the Rio de Janeiro sustainability conference in Brazil (Magee, 1996; Māori Dictionary, 2009).

\(^4\) Tangata whenua translates to ‘people of the land’ (Māori Dictionary, 2009).
Laituri, 1999). The eco-city is guided under a visioning document called the Greenprint, which forms a framework around sustainable city values and development (Waitakere City Council, 2009). It is through this, as well as a number of city-wide sustainability initiatives such as the Green Network tool and the collaborative restoration and community development ‘Project Twin Streams’ that Waitakere has gained the reputation of a progressive, sustainable city (Heron, 2006).

1.4.2. Nelson

Nelson is located at the top of the South Island. It covers 443 square kilometres. (New Zealand Department of International Affairs, 2009) and is situated on the coast. 39.28 square kilometres of this area are urban (Nelson City Council, 2009). Forming a backdrop to the city are ‘hinterlands’ of hills and valleys. These have been farmed in the past and while both dairy and sheep farming are still important to the area, exotic forestry has also been developed (Nelson City Council, 2006). The Nelson City Council (2009) also notes that Nelson region is one of the sunniest in New Zealand, and has an annual rainfall of 942mm per year.

There are six iwi in the Nelson area. These are Nga-ti Kuia, Nga-ti Ra-rua, Nga-ti Tama, Te Atiawa, Nga-ti Koata, and Nga-ti Toa Rangatira, and as in Waitakere, traditional gardens are commented on, especially along the river flats (Nelson City Council, 2009a). Currently the New Zealand Ministry for Agriculture and Forestry (2009: n.p.) considers Nelson and neighbouring Marlborough the “second most important horticultural region” in New Zealand.

Statistics New Zealand (2009c) gives the population of Nelson District as 42,888. It is therefore not a city by the LGA (2002) definition, but still a ‘main urban area’. 8.7% of Nelson’s population is Māori. Nelson City Council is one of the few unitary councils in New Zealand, meaning it undertakes the tasks of both regional and territorial councils. Nelson City Council (2009b) policy and plans include a sustainability policy, ratified in June 2008, recognising sustainability as a council value, and one of Nelson’s desired community outcomes is protection of productive

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5 One translation of iwi is ‘tribe’ (Māori Dictionary, 2009).
land and minimisation of waste and pollution to achieve, amongst other things, healthy soils.

1.4.3. Dunedin

Dunedin is located on the south-eastern coast of New Zealand’s South Island and its city district, as stated in the 2004 Dunedin City District Plan, covers 3,340 square kilometres. As would be expected from such a large area, the city’s landscapes are extremely diverse, from coastal areas to plains, to “hilly uplands” (Dunedin City Council, 2004:26). While the total city district area is large, the urban area covers approximately only 71 square kilometres. 94% of the population lives in this metropolitan centre based around the Otago Harbour which is contained by a 2.2 square kilometre town belt reserve (Dunedin City Council, 2004). There are a stated 15,000 hectares of “high class soils” in Dunedin City with the area most known for its quality land being the Taieri Plain, also the location of one of Dunedin’s major watercourses (Dunedin City Council, 2004:31,32). While some areas of the city receive upwards of 1400mm of rain per year, others receive as little as 500mm (Dunedin City Council, 2004).

The local iwi of Dunedin is Kai Tahu, considered to have manawhenua over the region (Dunedin City Council, 2004). As with the other two research locations, the District Plan comments on early food production, in this case the “first [European] farm in Otago”, established by the whaler John Jones (Dunedin City Council, 2004:27). Dunedin has a well-documented history of horticultural activities dating back to this time (Shaw, 2000)

Statistics New Zealand (2009c) states Dunedin has a population upward of 111,000, 6.4% of whom are Māori. Dunedin’s council is a City Council, whose first desired community outcome listed by the New Zealand Department of Internal Affairs (2009, n.p.) website is a “wealthy community”. The Dunedin Community Plan (Dunedin City Council, 2009) also suggests sustainability is of importance, and there is a sustainability section in the Dunedin City District Plan (Section 4).

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6 One translation of Manawhenua is ‘territorial rights’ (Māori Dictionary, 2009).
1.5. The Thesis
After this introduction, Chapter 2 presents a comprehensive analysis of the relevant international literature on urban food production and planning. The methodology and means by which the primary data were collected are detailed in Chapter 3. The thesis then turns to presentation and discussion of results found in the New Zealand research locations. These are combined and analysed according to the research objectives.

Chapter 4 characterises urban food production identified in the research locations, as instigated by communities, institutions and local councils. It addresses research
objective 1, and discusses the context from which experiences of urban food production were drawn. Chapter 5 looks at motivations, support and barriers for urban food production, while Chapter 6 looks specifically at the support and barriers associated with local councils. In addressing the final research objective 4, Chapter 7 draws together the study findings to present and discuss recommendations. Chapter 8 concludes the thesis, summing up the main findings as well as identifying both limitations and future research possibilities.

Together, these chapters answer the aim of the thesis by identifying how planning can best support and enhance urban food production in New Zealand. In doing so they contribute to knowledge of how planning can help New Zealand cities become more sustainable, more resilient, and overall better places, in line with the objectives of planning practice, described at the start of this chapter. This knowledge will sit within the theoretical context and previous studies on this subject, which are reviewed and discussed in the following literature chapter along with literature exploring international urban food production initiative experiences, as well as examples of planning involvement.
2

Literature Review

2.1. Introduction
Cities and gardens provide two necessities of human wellbeing – shelter and food – while at the same time representing the often perceived conflict between provision and consumption (Garnett, 1996). This literature review examines international debates, knowledge, and research on urban food production. It also identifies major themes on why and how planning and local governments may contribute to this process. Together, these elements inform analysis of the New Zealand context later in this thesis, and contribute towards generating knowledge of how planning can support and enhance urban food production in New Zealand.

This chapter first addresses how urban planning theories consider urban food production. Section 2.2 covers city planning and design theories, which are increasingly adopting sustainability and ecological approaches and often advocate urban food production (Mendes et al., 2008). Sustainable city theories are shown as a response to the global trend of increasing urbanisation and the problems associated with urban areas. Urban systems and their potential problems are discussed in relation to food-systems, identifying differing views on positive and negative aspects of current global food-systems. Literature on health, equity, environmental protection, and local resilience inform key arguments, and these perspectives are compared with theories of localisation and its benefits, as urban food production is essentially growing food locally for urban areas.
Diverse examples of urban food production can be found amongst academic literature and planning practice reports, and are discussed in section 2.3. Research on urban food production is reviewed, analysing types of initiatives as well as common experiences. Planning’s involvement with urban food production is central to this thesis, and understood to be frequently undertaken through local council or municipal authorities. Planning theory is addressed in the initial stages of this chapter; however, Pinderhughes (2004) identifies a practice-theory gap, suggesting that despite a theoretical shift towards sustainability, planning practitioners continue to perpetrate unsustainable systems. Therefore, after considering urban food production initiatives, section 2.3 looks more closely at literature on the interactions between planning practice and these initiatives. From within this debate Pothukuchi (2004) highlights a perceived deficit of activity and interest around urban food systems, from both governance and planning sectors, suggesting food issues are not prioritised in urban planning practice. This literature review details the international context regarding urban food production and planning. The international experiences and knowledge in the literature, along with identified gaps, lay the foundations for further research on New Zealand experiences and potential for planning involvement and support for urban food production.

2.2. Planning Sustainable Cities and Food
Planning is concerned with both place and people. This is indicated by the description of planning by the American Planning Association (2009:n.p) as a means to “improve the welfare of people and their communities [through] creating more convenient, equitable, healthful, efficient and attractive places for present and future generations”. However, planning systems are diverse, affected by local contexts of culture, geography, history and government structures, meaning planning is not uniformly expressed (Kaufman and Escuin, 2000). Planning can range from physical management of natural resources and the built environment (Daniels, 2009), to community development and visioning activities (Howe, 2001), as well as a legislative and regulatory role (Talen, 2009; Peterson, 2009). Planning was defined in its broadest sense for this literature review, and all forms of planning linked in the literature to urban food production were considered relevant.
Planning for urban places, a role described by Girardet (2008:1) as “[creating] spatial structures that satisfy the needs of city people”, is increasingly important. Urbanisation is escalating and already over half the world’s population live in cities (Pinderhugyes, 2004; Leitmann, 1999; Newman et al., 2008). Definitions of ‘urban’ and ‘city’ in the literature are numerous; and a discussion by Geyer (2008) covered definitions based on physical structure and systems, population base, and social structure and institutions. Defining factors of social and collective behaviour are also given by Writh (1938). As with literature on ‘planning’, ‘urban’ has been approached broadly, incorporating literature drawing on a range of ‘urban’ and ‘city’ definitions. Cities, in their current state, are sometimes seen as the “remains of a rapidly passing industrial era” (Daniels, 2008:11), and a leading source of environmental problems, from pollution to over consumption (Leitmann, 1999). Others, however, see cities as places of opportunity and innovation (Birch and Wachter, 2008; Newman, et al., 2009).

In addressing problems, as well as in seizing opportunities, theoretical solutions to urban issues have been generated, including multiple ‘sustainable’ city theories. Emerging in the early 1990’s, sustainable city theories are suggested by Wheeler (2000) as the first real consideration of sustainability in terms of urban development. Beatley (2009) lists Ernest Callenbach, Richard Register, and Paolo Soleri as visionaries, planners, artists and architects who have pioneered the concept of ‘urban sustainability’. Sustainability planning issues identified by Daniels (2009:187) are “minimising waste and pollution, conserve[ing] natural resources, and reflecting the carrying capacity of ecosystems”. A key mechanism for incorporating sustainability into local city planning is Agenda 21, a strategy for locally implementing urban sustainability, generated through the 1992 United Nations Conference on Environment and Development (UNCED) (Riddell, 2004). Berke et al. (2000) also determine that national legislation from several countries, including New Zealand, focuses local planning around key principles of sustainability.

Reinforcing why urban sustainability is important, Girardet (2008:3) quotes the director of the UNCED, Maurice Strong, as stating: “the battle to ensure that our
planet remains a hospitable and sustainable home for the human species will be won or lost in the major urban areas.” Concepts such as the ‘eco-city’ (Register, 2006), the resilient city (Newman et al., 2009) and others aiming at ‘greening’ cities have become popular, suggesting ways cities can facilitate sustainable development. Sustainable development, as described by Newman et al. (2009:7), “recognises there are limits in the local, regional, and global systems within which cities fit”. Beatley (2000:6) also addresses the concept of limits, stating: “cities that strive to live within their ecological limits … acknowledge their connections with and impacts on other cities and communities and the larger planet”. This supports Maurice Strong’s assertion that cities have a vital role to play in maintaining a life-supporting planet. In pursuing sustainable development, the arguments above suggest research on urban areas and sustainable development is crucial, and have prompted an urban focus for this thesis.

Urban food production is one of many aspects considered in literature on sustainable cities, as it has potential to address issues of food security, health, community and economic development, self-reliance and biodiversity (Norberg-Hodge et al., 2002; Newman et al., 2009; Register, 2006; Girardet, 2008; Colding et al., 2006). These are all areas which fall within the broad remit of ‘planning’, and seeing planners as part of the urban food processes is something implicit in Newman et al. (2009:141)’s suggestion that “a sustainable local and regional food-system can be helped along… by local planning and policy”. How planning theories on urban food production as a means to sustainable development play out in practice is addressed in the final section of this chapter. But first, the following section identifies debates and theories on sustainable and unsustainable urban food systems.

2.2.1. Urban Food Issues.
Mintz (2006) and Johansson (2008) understand the Western urban food system to have stemmed from industrialisation. They see it as a system intertwined with the current economic and capitalist systems, and with hugely intensified production, transportation and consumption. Girardet (2008), meanwhile, suggests that while urban agriculture is well-represented historically and globally, Western urban areas do not generally produce significant amounts of food. Consequently food concerns have
focused on access and income for purchasing food grown elsewhere, rather than on local urban production (Ruel et al., 1998; Ericksen, 2008). Anderson (1991) and Phillips (2006) assert that this generates a producer-consumer gap which, along with globalization, has increasingly commoditised food; urban populations increasingly purchase food with wages rather than partake in production. As the system currently stands, Miller (2008:126) argues it is unsustainable, dependant on artificial support such as “transport [and other] subsidies [and] tax cuts”. Heller and Keoleian (2003) also consider the current system does not achieve sustainability criteria and therefore change is necessary.

Within the current urban food-system there are few formalised alternatives to participating in non-market based food procurement. This is viewed by Riches (1997) as a major feature undermining food access ‘rights’, and one which must be addressed. In many countries it is governments which ultimately represent accountability for societal equity, including minimum food access (Kjellstrom and Mercado, 2008). Urban food production in cities, generating local food for urban areas, creates an alternative food procurement option. This is advocated by Smit and Nasr (1992), who present it as a means to address food insecurity, in addition to other problematic urban issues such as waste and environmental degradation. Urban food production is often described as urban agriculture, and consists of a range of agricultural activities taking place in urban areas. It is described by Mougeot (2006:4) as:

…the growing, processing, and distribution of food and non-food plant and tree crops and the raising of livestock, directly for the urban market, both within and on the fringe of an urban area.

The way issues are defined, according to Eisinger (1998), demonstrates how they are seen. It also conceptualises what is being defined, which in turn helps with addressing associated problems (Poppendieck, 1994). This thesis does not focus directly on urban food security, yet urban food production is believed to address food security in several ways. Multiple problems associated with current urban food systems, as well as the benefits associated with local food production in urban areas
Chapter 2: Literature Review

relate to the issue of food insecurity. The literature on food systems and food security is vast and stems from a number of disciplines; it also frequently overlaps with urban food production literature, and warrants further discussion.

Given its broad disciplinary base, multiple defining features of urban food insecurity have been identified. Food insecurity has been seen as to: a shortfall of technology and innovation (Leizberg, 1999), a failure of ethical and human rights (Riches, 1999; Pothukuchi, 2004), and a result of poverty and inequality (Miller, 2008; Brown, 2004; Eisinger, 1998). It has also been constructed in association with concepts of health and nutrition (Fegan, 2007; Rush et al., 2007) as well as sustainability, ecological and environmental issues (Maxwell and Wiebe, 1999; Fairholm, 1998). A frequently cited concept of food security is that given by the United Nations Food and Agriculture Organisation (FAO) (2006:1) as when:

all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Additional concepts of sustainability and social justice, are suggested by Bellows and Hamm (2002) and could expand the FAO’s definition to end with: ‘…through a sustainable and socially just food system’. One outcome of this thesis is to identify the current alternative methods of urban food procurement and suggest how planning can support and enhance them, therefore contributing towards urban food security and urban sustainability in New Zealand.

Given that definitions and concepts surrounding food security come from both global and local contexts, it is not surprising that a broad range of solutions to food issues have also been generated. These range from market-based solutions to development policies. However, equity and health considerations especially are offered as building blocks for so called local and community approaches to food issues (Johnson and Baker, 2005). Such thinking perhaps represents a shift away from globalisation and centralisation and towards decentralisation and localisation. Local production is seen as a means of empowering and giving food supply control to local consumers, and
incorporates elements of participatory approaches, social justice and human rights (Anderson and Cook, 1999). Urban food production is one example of local food production, and literature on ‘localisation’ is reviewed below. Localised approaches offer potential solutions to the problems associated with current urban food-systems. These are presented along with additional benefits identified with growing food locally in urban areas.

2.2.2. Localisation as an Urban Solution

Localisation is an essential component of urban food production, in that urban food production incorporates production in areas where the food will be consumed. A shift to localism addresses several problematic issues raised with the current globalised food system in the literature, as well as generating direct benefits, as discussed below. Yet, localisation is not visualised in a homogeneous way and it is acknowledged that flaws have been identified by critics who feel the local approach is overestimated. This section ends by linking local food production approaches to problems identified with current urban food systems. This summarises a debate in the literature on the potential of localised food production to address a broad range of urban issues, and gives grounds for an analysis of how urban food production could benefit New Zealand’s cities.

When discussing local food production, it is raised that the concept of ‘local’ is envisaged in a variety of ways (Feagan, 2007), ranging from a physical spatial depiction to a socio-political one, and Anderson and Cook (1999) acknowledge ‘local’ can be a highly confusing term. Several concepts have emerged to help define what could be considered ‘local’ in regard to food production. One model is the ‘100-mile diet’, where food eaten is produced within a 100 mile\(^7\) radius of the consumer (see Smith and MacKinnon, 2007). Another is the concept of a local ‘foodshed’ (Starr et al., 2003). Developed from the image of a ‘watershed’, the foodshed is described by Kloppenburg et al. (1996:37) as Arthur Getz’s theory of “the local food-systems carrying capacity”, drawing a physical boundary around local food, based on place. Giving consumers a comprehensible position within their food-system is one benefit

\(^{7}\) 100 miles is the equivalent of 161 kilometres.
which Miller (2008) feels these ‘local’ concepts accomplish, re-linking consumers with elements of production. A more traditional term relating to food and local regions is the French ‘terroir’, meaning ‘area of terrain… [whose features impart] distinctive qualities to food products’ (Barham, 2003:131). Such features are believed to include people and culture, but again focus on the elements of local place and physical food origin.

Concepts of local food production are generally associated with rural settings. There is a gap in the literature regarding how such concepts may fit the urban scene, a scene constructed as a place of consumption rather than production. It is relevant then that, as explored in this thesis, questions are asked around ‘if’ and ‘how’ local food production is motivated, undertaken and supported in New Zealand’s urban areas. This addresses the gap in urban research on how concepts of local food production fit into urban environments.

Fegan (2007:24) suggests that a shift towards local level food production can address a lack of sustainability in the current food system by increasing: “decentralisation, democratisation [and] self sufficiency…”, however, not all arguments promote local food production as necessary, better, or even possible. Hilts et al. (2008) give the example that more energy is expended growing local tomatoes in the Canadian winter than importing them, while Borne and Purcill (2006:195) caution about a “local trap” where local food production is perceived, without contextualisation, as inherently better. Similarly, DuPuis and Goodman (2005) question what they identify as a local idyll, suggesting the associated attributes of empowerment and environmental sustainability might not always be realised. These are valid arguments and caution that concepts must be grounded in appropriate research. Yet in the context of community food assessment Pothukuchi (2004) asserts that many local food-systems do have potential to contribute towards sustainable development in urban areas. Norberg-Hodge et al. (2002) also argue that local production can be conducted alongside current food-systems, filling niches where appropriate and beneficial.
2.2.3. Localism and Current Urban Food Systems

Food production, transportation and consumption in their current forms are identified as having potential to create a food supply problem (Farnworth, 2008:1; Johansson, 2008). Evidence of climate change, decreasing energy supplies, ecosystem changes and resource depletion in an increasingly populated world, has stimulated “local innovations [which] are providing new models” and foodsystems with potential to prevent damage as well as generate greater suitability in the changing environment (Farnworth, 2008:2). There has been little research on local innovations currently underway in New Zealand’s urban areas which address foodsystem issues, an area this thesis will contribute towards. Local food alternatives are acknowledged to take many forms, but Imbruce (2006:164) observes that, at least theoretically, many “share a political agenda for ecological sustainability, economic viability and social justice”. Imbruce suggests ecological, economic and social elements, these form the ‘triple bottom line’ approach of sustainability planning and environmental assessment (see Hacking and Guthrie, 2007). They also frame the current problem areas identified in the urban foodsystem (see Table 2). These problem areas, which many local food systems are considered to address, are now discussed.

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<td>-Poverty and Health</td>
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Table 2: Issues addressed by local food production, divided into the triple bottom line categories.

Health and Poverty

Discussions around food issues are frequently undertaken through a lens of nutrition and health. Health practitioners promote and research benefits associated with locally grown food, diet changes brought by gardening activities, and general urban health benefits from participating in local food production schemes. Poverty is also a theme running through the literature and has been correlated with food-related poor health and nutrition (Olson, 1999). This is perhaps especially relevant in Western industrialised nations, where current market-systems and monetary economies are
suggested by Miller (2008) to dominate food distribution and access. Providing locally grown food, especially in urban areas, has been found to benefit food access, and therefore potentially health, especially for poorer people. One example is through increased “non-market reciprocity and redistribution economies”, such as swapping and sharing food produce within a community (Morton et al., 2008:107; True Consulting Group, 2007). Pothukuchi (2004) argues that current poor consumer choice is a significant contributing factor towards ill-health. Local food production initiatives, such as gardening, are a potential means to directly and indirectly improve food choices and related health impacts. Centralised food-systems can also carry health risks in that issues such as localised contamination have potential to become widespread, although there are also arguments that centralised market systems maintain higher and more regulated standards than can be achieved through local systems (see Josling, et al, 2004; Black, 2005; Katz, 2006).

**Community**

Community building and neighbourhood vitality have been generated through localised food production initiatives (Pothukuchi, 2004). Mintz (2006:9) argues that a sense of community is missing from the present centralised food system, which lacks the “social interaction that underlies and sustains” traditional food-related activities. Local food movements frequently advocate centering food processes around local people and grounding them in communities, giving participants significance and control within their food systems (Miller, 2008). Localising the food system is also claimed by Pothukuchi (2004) to result in community empowerment and food activities orientated around a community’s own goals and needs. Pothukuchi also emphasises, however, that while local systems develop local contribution and control, they should represent just one among many approaches to food security and community development, supplementing not replacing existing approaches and state support.

**Environment and Sustainability**

Environmental concerns are held especially by those adopting a sustainability approach, and affect all elements of agriculture and food sustainability from production to consumption (Gregory, et al., 2005; Vitousek, et al., 1997). Regarded
by Ericksen (2008) and Pothukuchi (2004) as triggering significant change, environmental impacts are seen to be generated by, as well as affecting the future of, food system activities. Currently, the global food system is considered unsustainable, especially with its emphasis on consumption and tendency to “over-use natural resources and degrade ecosystems” (Johansson, 2008:56; Mintz, 2006). Miller (2008), for example, identifies increasingly concerning issues as: water, climate change, peak oil, pollution and contamination, biosecurity and genetic engineering. Several of these concerns overlap those coined the “new fundamentals” by Barling et al. (2008:13). The new fundamentals consist of ten vital elements of current food systems, which must be maintained or amended if a sustainable food future is to be achieved. Water is one example where degradation of this wider environmental input upon which food production depends can critically affect the food supply. Brown (2004:191) finds it alarming “how quickly water shortages can translate into food shortages”.

Feagan (2007) argues that through local food production, because it inhabits a specific place, communities are more likely to take accountability, responsibility, and guardianship for the environment. He highlights that a bioregional theory approach sees the world in terms of its ecology, and local food production seen through this lens can highlight “environmental well-being” in a specific place (Ibid, 2007:32). Currently, failure to address environmental problems generated through our food systems causes problems world wide. As Pothukuchi (2004:258) states “all of society bears the costs of such externalities produced by the current food system.”

Energy
Unsustainable reliance on limited fossil fuel by current food systems for production, processing and distribution has also been raised as a topic of concern (Vancouver Food Policy Council, 2007). According to Mintz (2008) current systems have evolved from an abundance of artificially cheap fuel, while both Brown (2004) and Newman et al. (2009) point to a predicted future with less fuel availability, resulting in rising food prices amongst other costs and effects. Pothukuchi (2004) links the high energy consumption of current food systems with potential environmental degradation. Ingram et al. (2008:5) identify two challenges raised by high energy
reliance, namely the need to “[develop new] food production systems” able to address problematic issues embedded in the current food-system, and to take a multidisciplinary approach encouraging food security to be addressed as a whole. As the current high energy consumption relates, in part, to the transportation of food both between and within countries, localised food production is felt to address this issue (see Pimentel and Pimentel, 2008).

Supply and Demand
Supply and demand are two elements which currently dominate the global, market-driven food supply. Miller (2008:116) comments that structurally the current food system “depends on the principle of scarcity to operate”, therefore the value of food is attributed to and maintained by controlling the quantity of food supply available. However, at a global level supply is not always easy to control. Brown (2004:180) refers to traditionally exporting areas producing a significantly lower food harvest as a result of uncontrollable changes, such as climate change, water scarcity, or disease, and states:

…the world may be moving into a period dominated not by surpluses but by shortages… the issue becomes not exporters’ access to markets, but importers’ access to supplies.

Poor harvest is seen as the first result in a sequence of events down the supply chain with devastating effects at the consumption end, especially for those totally reliant on an external food supply. Simply put, the current food system appears to place many eggs in the one basket.

Supplier and consumer links are also feared to be decreasing, substituted by middle-(wo)men. Under the current system, Pothukuchi (2004) argues that knowledge, and hence control, of food production is decreasing. In addition, the turnover time between supply and demand, as a result of cheap transportation, is short. This has proved to be problematic should strikes, not least a civil emergency, develop, leaving urban populations with a limited food supply (see Cavinato, 2004). A shift towards local food production and a diversity of food supply alternatives is felt to create a
more direct link between producer and consumer (Feagan, 2007), allowing for more localised, even individualised, control and planning regarding food supply and demand.

**Commercial Roles and Externalisation of Power**

The literature also describes the development of a powerful commercial sector and its effects on the food system. Commercialism is suggested to result from food becoming a commodity as much as a necessity; in this context Anderson (1991:20) describes a commodity as “something which is produced to be sold”. Commercialism is felt to become an issue when it overlaps with civil rights and public interest.

Waples (2008), in considering the role of existing free trade agreements in the global food system, notes a shift in power not only away from communities, but also from governments. This view is reinforced by Pothukuchi’s (2004:358) examination of the ‘food economy’, finding that “the global food system places enormous power and resources in the hands of a few”. There is concern that under trade agreements the focus shifts from serving the nation’s best interests, to serving commercial trade interests; from providing food to supporting an economy, making it difficult for governments and policy makers to adopt “precautionary principle[s]” (Waples, 2008:28). Farnworth et al. (2008) see danger in lack of input from both national governments and communities regarding choices presented through the commercial food system. They cite Berdegue and Reardon’s remark that the “playing field” odds are extremely against small players (Ibid, 2008:1). Addressing this same issue, Miller (2008) gives examples of local cooperatives forming, where small players with combined strength find it easier to survive.

Anderson and Cook (1999) note that localised food production increases community power, by giving supply control to internal users, not external controllers. They consider this to bring the focus back to food issues and community needs over economic gains. Building on Foucault’s work on power, by bringing together two sets of knowledge (supply and demand), Miller (2008:158) looks at how the current system works on division of knowledge, commenting that the “delusions of supply
and demand are reinforced by secrets and ignorance, and a general lack of knowledge about where food comes from”.

Both Pothukuchi (2004) and Miller (2008) feel that responses to food-system problems need to be multidisciplinary and integrated. This relates to the diverse areas the food system covers from production to consumption, and the numerous elements which are affected by food, from health through to environmental sustainability. While solutions at the local level are addressing global issues, these global issues are uniquely manifest in diverse local communities, meaning diverse and individual local solutions must be part of the change. Miller (2008:126) recognises there is an inherent “difficulty [in] transferring a model from one cultural context to another”. Therefore, local planning can play a crucial part in contributing towards a tailored food system, in contrast to the current ‘one size fits all’ market economy approach to food. This is why identifying how local councils and planning can support urban food production initiatives in the specific New Zealand context is important. While models identified through international research have much to offer and can be adapted, research is needed to understand the New Zealand context and to identify how such models may be best altered to fit with New Zealand’s unique frameworks, environments and concerns.

Miller (2008:123) gives the opinion that good examples show models where “a structure… is organised loosely enough to allow people’s power and creativity to bubble to the surface”, and to “observe …diversity as a strategy in itself”. Rather than replacing current food systems, local food production can be used as a means of adding to, diversifying and therefore strengthening them (Pothukuchi, 2004; Norberg-Hodge et al., 2002). Throughout the literature, there are many examples of urban food production being undertaken alongside globally dominant food systems. Such examples, and the international experiences of urban food production, are discussed in the following section.
2.3. Urban Food Production

From both the global north and the global south, there are many examples of food production in urban areas. This section covers existing research and experiences from three categories of urban food production initiatives – community, institution and council. Specific initiatives identified within these categories included: community gardens, institutional gardens (such as those in schools), and council-directed activities such as allotment garden provision and edible landscaping. Selection of these three categories was guided by international literature demonstrating that initiatives undertaken at these levels were frequently utilised by or interacted with planning and municipality bodies, making them particularly relevant for this thesis’ focus on how planning could support and enhance urban food production. Each category is addressed, identifying key types of urban food production as well as reasons behind their emergence, and problems they encountered. The diversity of experience demonstrated in the literature highlighted a need to identify the unique characteristics of New Zealand’s urban food production, in order to generate appropriate recommendations for effective planning support in the New Zealand context. Research questions were therefore developed to identify the types of urban food production, support and barriers experienced, and interactions between urban food production and local councils.

Urban food production literature focuses on two contrasting settings, namely developing and Western contexts. A large body of literature addresses ‘development’ theories and is directed at the ‘Third World’ (see International Food Policy Research Institute, 2009; United Nations Food and Agriculture Organisation, 2009; Rosset, 2006). However, this review has concentrated on the growing body of literature on urban food production in Western contexts. In addition, historical examples from industrialised countries of large scale urban food production were identified. The most common of these included government-sponsored food production during the Great Depression, and ‘victory’ or ‘relief gardens’ at the time of the two world wars (Kurtz, 2005; Fairholm, 1998:20). While not strictly Western, Cuba also offers examples of extensive urban food production supported by government planning. Cuba’s experience is described by Koont (2009:44) as “one of the most successful examples of urban agriculture in the world”. For Cuba, extensive urban food
production was triggered in 1989 when the Soviet Union collapse halted provision of mass agricultural products, including oil, as well as by an earlier blockade by the United States (Koont, 2009; Altieri, et al., 1999). Such forms and experiences of urban food production at community, institutional and local council levels are looked at in detail in the following section.

2.3.1. **Community Urban Food Production**

Community gardens are a relatively common form of urban food production and are well represented in the literature. Community gardens are diverse and Armstrong (2000) notes that organisation structures do not follow one single model. However, gardens generally consist of a collective effort to grow food in a common space, with shared basic resources such as land and water (Fairholm, 1998). Increasingly, as additional benefits are identified, community development and intentional design elements are also included as garden foci (Saldivar-Tanaka and Krasny, 2004). Community garden stakeholders are frequently portrayed as volunteer labourers, coordinating individuals or bodies, and private or public land providers (Armstrong, 2000). For some, the term ‘community garden’ refers to grassroots gardens, rather than government-sponsored gardens such as those which operated during the Great Depression and the two world wars (Lawson, 2005; Fairholm, 1998); others such as Armstrong (2000) also class government-sponsored gardens as a form of community garden.

Community gardens can provide for a geographical neighbourhood, or key interest communities, or they can target specific demographics. As a result, the objectives, philosophies and motivation behind gardens can be hugely diverse including political, environmental, resource access, pleasure, and health aspects (Armstrong, 2000; Baker, 2004). Further positive outcomes identified in the literature are control over food sources, addressing food insecurity, income savings, increased exercise, producing cultural food unobtainable commercially, increased neighbourhood and community cohesion, and the sharing of education, knowledge, produce, and resources including tools and seeds (Miller, 2008; Baker, 2004; Armstrong, 2000).
Baker (2004) and Glover (2003) suggest community gardens can impact and transform urban space and landscapes, and address urban social issues. By the same token, gardens can be affected by these landscapes, issues and diversities as well. Political elements associated with community gardens include using gardens as a form of place and community “shaping” (Barker, 2004:305), as well as general community empowerment and development (Armstrong, 2000). Gardens have also been used to transform neglected urban areas, and to enhance the value of areas surrounding them (Baker, 2004). Waste conversion, in the form of compost (Fairholm, 1998) points to another way in which community gardens positively connect with council services such as waste removal.

Literature on community gardens comes from a wide range of disciplines, including health and wellbeing, urban planning, environment, community, economics and development (Baker, 2004). It is felt that community garden numbers are increasing in urban areas, becoming a visible sign of the food system, and that their presence contributes to the overall food security of an area (Baker, 2004; Fairholm, 1998). In addition, this changing scene requires flexibility from all those involved, as challenges grow and change with its evolution. This raised the question, presented through research objective 1, of whether community gardens or other community level initiatives were present and increasing in New Zealand’s urban areas. Problems faced by community gardens were also conspicuous in the literature. While these are specific to local context and the different situations of community garden groups, common key barriers are discussed below. This in turn raised the question, addressed by research objective 2, as to what barriers and experiences are held by community gardens in the New Zealand context.

Accessing land for cultivation is perhaps the most common barrier described in literature on community gardens, along with an ongoing threat generated by insecure tenure arrangements (Armstrong, 2000; Kaufman and Bailkey, 2000). Barker (2004:306) argues that one of the main land issues stems from community garden users having to constantly defend and protect their use of “prime development land”, as well as needing to fight for municipality permission to use urban plots of land for food production in the first place. Kaufman and Bailkey (2000) suggest private land
owners, including councils, view community gardening as a temporary land use until a suitable economically profitable use emerges or, as asserted by Doolittle (2004), they are assigned to marginal-quality land. Kaufman and Bailkey (2000:58) also point to an “inefficient management of vacant land in cities”, with councils lacking coordination over what, how and by whom lots can be used, making the process of establishing a garden a long and difficult process.

Kaufman and Bailkey (2000) highlight the issue of contaminated land, especially when undertaking ‘brown fields’ garden development on previously used land. Prior uses may have left waste and harmful residues in the soil, potentially hazardous to consumers (Altieri et al., 1999). Using raised beds, or other means of replacing the original soil, is one way community gardens have moved around this issue (Kaufman and Bailkey, 2000). Such solutions often require funds and resources however, which are areas noted by Baker (2004) and Fairholm (1998) as problematic for community garden initiatives as well as for councils themselves. Budgetary constraints often prevent council from helping initiatives, even when they are sympathetic to them (Fairholm, 1998). Problems obtaining resources such as “water, tools, soil, and plant and building materials”, were raised by Saldivar-Tanaka and Krasny (2004:405), and resourcing ongoing maintenance was a barrier noted by Baker (2004). Maintenance was an especially problematic area in public spaces, when the responsibility for specific maintenance tasks is not set out. Such task setting calls for leadership and coordination, another area identified in the literature as problematic for community gardens.

Problems were experienced in finding suitable leadership and coordinators for projects, especially as they may take a long time to get off the ground. Baker (2004) notes the success of gardens with suitable committees, coordination, mediation and liaison personnel able to develop strong partnerships between stakeholders and other affected parties. Saldivar-Tanaka and Krasny (2004) researched the difficulties of groups undertaking garden establishment without strong leadership, and found them more vulnerable to loss of land lease. Fairholm (1998:9), in case studies of Canadian gardens, identifies the benefits of having garden representatives at the municipal level. Poor leadership by councils as a whole was identified by Fairholm (1998), who
commented on restrictive policies and issues with poorly coordinated and ‘fragmented’ municipal support. Suggested solutions lie in having one government department designated responsible. Municipal support is an issue for many community gardens, and the literature reinforces the impression that “local [government] leadership” and support is lacking (Kaufman and Bailkey, 2000:58).

The lack of durability resulting from poor leadership also pertained to participation issues identified in the literature. Obtaining and maintaining community participation was an ongoing challenge for community gardens (Saldivar-Tanaka and Krasny, 2004). Baker (2004) identifies geographical, political, and cultural barriers to participation, especially given that community gardens can have quite specific objectives, and perhaps not all-encompassing ones. Internal politics, conflicts, communication and organisational issues can be a struggle for gardens incorporating a wide range of participants and philosophies. The establishment of rules, protocols and policies is one solution to issues of internal conflict (Baker, 2004). Participation was also felt to be reduced as a result of persistent vandalism. Vandalism is an issue faced by some community gardens, especially urban gardens, and solutions such as fencing did not appear overly successful (Armstrong, 2000). Other gardens were concerned about theft and damage to tools, facilities, signs and produce, as well as littering and degradation of the site (Saldivar-Tanaka and Krasny, 2004; Kaufman and Bailkey, 2000). Many of these features identified in literature discussing community gardens were also common in literature addressing examples of urban food production in institutions, as can be seen in the following section.

2.3.2. Institutional Urban Food Production

Compared with literature on community gardens, much less was available on Western examples of institutional urban food production activities. School gardens were the most commonly discussed and were referred to in academic education literature and environmental literature. Mention of campus food production gardens was noted, but little academic literature discussed the activity directly, the focus being more on addressing campus sustainability as a whole (see Koester et al., 2006; Saskatchewan, 2008). Gardens connected with health institutions focused around healing therapies,
with only brief mention of food production elements (Soderback et al., 2004), while even less was said of retirement institution or church gardening activities.

Kohlstedt (2008) suggests that school gardens have been established since the 1890’s to bridge the gap between classroom and nature in education, as well as because of their flexibility in meeting numerous curriculum needs from geometry to nutrition. Work by Harrison (2008) and Graham et al. (2005) suggests the same is true today, highlighting education around the areas of nutrition, life cycles, and the environment, as well as learning about healthy food. Kohlstedt (2008) suggests school gardens emphasise education more than production, but does link some school gardens with a push to encourage home gardening. This included activities such as developing skills and distributing resources, like seedlings, to plant at home. The key barrier Kohlstedt identified in connection with school gardens was lack of coordination, especially over lengthy school holidays and as a result of busy teachers. However, having a dedicated coordinator along with resource and funding support, such as a coordinator wage, was one solution to this problem (Harrison, 2008). Wider community involvement was also found beneficial.

University food producing gardens were similarly connected with both wider community involvement and sustainable education (Livermore and Midgley, 1998). University gardens were often incorporated as part of a wider shift towards ‘greening’ tertiary campuses (Koester et al., 2006). Carlson (2006) suggests internalised sustainability commitment by tertiary institutions encourages students to undertake initiatives, such as setting up community vegetable gardens on campus.

Other institutions identified in connection with urban food production include health institutions, retirement institutions and faith institutions. Soderback et al.’s (2004) work on healing gardens suggested that food production in gardens has been used in the past by psychiatric hospitals, as a part of rehabilitation. Pollitt and Moriarty (2006) describe allotment gardening in relation to elderly care and dementia, suggesting physical gardening activities are beneficial and should be incorporated into retirement home activities or facilities. Religious connections to food production are linked to early monastic activities (Griswold, 1996), and several recent examples of
faith-based urban food production activities were identified in the literature, mainly addressing issues of poverty and deprivation within parishes. Church networks provided a means to share produce and examples of church-community gardens were given (Hanna and Oh, 2000). One such example is the “Garden o’ feedin”, identified by Lebowitz (2008). This garden fed church members and supplied the church charity pantry for distribution to local families. Madaleno (2004) also indicates the historical role of church bodies in encouraging development of urban allotments for poor families as early as 1901 in France. Despite numerous allusions of institutional urban food production in the literature, discussion of them is scarce, often historical, and frequently occurring only as an aside to discussion of other issues such as sustainability, poverty or health.

2.3.3. Municipality Urban Food Production

In the literature, urban food production undertaken or managed at a local government level mainly consisted of allotment gardening and edible landscaping. Allotment gardening has similarities to community gardening and some cases appeared to overlap. Allotment gardening, however, is generally understood to occur on individual plots in a council-provided urban section, by individuals or families who rent through payment of a small council fee for use of the land (Flavell, 2003). Allotment gardening is identified as the predominant form of urban food production in places such as England, largely on land owned and managed by local government (Howe, 2001). It is not a new phenomenon, given that the 1908 United Kingdom’s Small Holdings and Allotments Act required urban councils to provide land for the creation of allotments (Thorpe, 1970). Howe (2001) found that planning authorities in England still refer to allotments in their development plans. Currently, demand for allotments is high, with long waiting lists of up to 40 years in England (Hopkins, 2008). However, interest in allotments has fluctuated over time (Anderson, 1991), a fluctuation associated by Hough (1989) with availability of leisure time, unemployment levels and early retirement.

Edible landscaping involves intentional council use of food-producing plant varieties to fill the current role of ornamental plantings throughout cities (Beck and Quigley,
Cuba’s examples of edible landscaping provide direct food production in the form of fruit, nuts and berries, and aside from food production, other drivers pushing Cuba’s edible landscaping include environmental and aesthetic benefits (Koont, 2009). Additionally, green matter is used for animal feed and compost, contributing to food production through indirect means. Roberts (2001:30,50) suggests several varieties of herbs, trees and flowers which could be utilised to combine urban “beautification campaigns” with edible landscaping, generating a “cost-effective way to beautify the city” and feed people, which also fits within conventional council activities budgets.

For community, institution, and council levels of food production, perceptions of limited space were frequently a common issue (Howe, 2001). Roberts (2001), however, suggests that small corners of land are abundant and can be successfully utilised, while re-imagining traditional land and space use can also allow incorporation of urban food production. The objectives behind many initiatives were wider than simply food production, including social and community benefits (Wiltshire and Azuma, 2000), education (Graham et al., 2005) and increasing sustainability (Koester et al., 2006). Council initiatives especially were linked with recurring themes of green networks and the importance of open space use for urban sustainability, biodiversity and beauty (Thompson, 2002). The review of urban food production initiatives and experiences also identified how local authorities were involved with community and institutional urban food production. This interaction serves to inform discussion on best practice guides and policy, leading to consideration on where planning practice now, and in the future, fits with urban food production. This approach has been undertaken in the literature, as can be seen below.
2.4. Planning and Local Government

“...the three driving forces behind success for action in life, even in difficult circumstances, are: necessity, possibility and will”

(A Cuban *parcelero*\(^8\), quoted in Koont, 2009:50).

While food security and food systems are finally making the agenda in literature on urban planning (Kaufman, 2004; Pothukuchi, 2004), some would argue it is an issue far from satisfactorily addressed in practice, given food’s prominent role in a functioning society (Pothukuchi and Kaufman, 1999 and 2000; Howe, 2001). Local governments, along with planners and others in a position to make strategic plans, risk assessments and legislation, are “mandated to protect and enhance expansion and development” (Sachs, 1992 in Lezberg, 1999). Both Pothukuchi (2004) and Howe (2001) detail specific areas of training received by planners which equip them well for dealing with issues affecting community food security. However, it seems that until recently this training has been applied to issues of housing, infrastructure, transport, and urban design, while marginalising food-systems (Pothukuchi and Kaufman, 2000). Bourque (2000) suggests preconceived ideas regarding agriculture, held by city leaders, prevent involvement in urban food production, and given the current structure of global food supply this is perhaps not so surprising. As Waples (2008) suggests, politics and power issues are believed to encourage local government bodies and planners away from food system related work.

Other issues with the current food system include the vulnerabilities and insecurities discussed in the first section of this chapter, which suggest a current instability. Kjellstrom and Mercado (2008) consider such vulnerabilities to be crucial issues that need addressing from several angles, including good urban governance and planning. Despite an inherent lack of planning for urban food issues by mainstream planning fields, an increasing number of creative responses are being identified in theory, and some in practice. By looking at how planning currently supports urban food

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\(^8\) One translation of *Parcelero* is “owner of a plot” or “smallholder” (Collins Dictionary Online, 2009, n.p.).
production, areas can be identified where local government could focus their role in relation to urban food production.

In the literature planning support is seen to range from master planning entire urban areas, to participating in maintenance, such as mowing around community gardens. Appropriate local government and planning involvement varies depending on how municipalities define ‘planning’. However, two main prongs of involvement emerge, firstly leadership and secondly response to community requirements. This is a planning dichotomy alluded to by Arendt (1999) when looking at conservation responses to growth: that of proactive or reactive planning approaches. Overall the literature suggests scope for planning to support urban food production through both approaches. In practice, however, a reactive approach appears most commonly used today. Questions have also been raised regarding potentially negative effects associated with involvement in urban food production by local government and planning. These include over-bureaucratisation, and suggest that while potential roles for planning involvement exist, they should not necessarily be applied in all situations.

2.4.1. Current Planning and Local Government Involvement

Literature on urban planning currently has had relatively little food focus, despite a visibly growing interest and concern around food issues (American Planning Association, 2007; Donofrio, 2007). Early planning theorists such as Ebenezer Howard considered urban food production in his garden-city concept (Howard, 1965); however, Howe and Wheeler (1999:13) argue that generally in “advanced industrial nations” there is a lack of food planning. Food issues including urban food production are better covered in the literature in relation to development work aimed at the ‘global south’ (see International Food Policy Research Institute, 2009; United Nations Food and Agriculture Organisation, 2009). Mendes et al. (2008:436) comment on a “dearth of research” when looking at planning involvement with urban food production. This may indicate that while the literature suggests a lack of support, it may not be the case in reality. This thesis will help fill this gap in the research for the local New Zealand context.
Brown (2004:184) suggests this situation may have arisen because historically “excessive production and market surpluses” have prevented food scarcity in the west. However, Allen (1999) and Howe and Wheeler (1999) describe several un-embraced opportunities such as continuing poverty in many cities, as well as crisis situations including war and economic depression, which have forced the spotlight on food security in the recent past. And while a study by Howe (2001:29) found some planners questioned the relevancy of ‘food issues’ in the planning realm, Donofrio (2007:33) comments on historical links between planning and food, stating that “…[food’s] high cost was one of the most pressing urban problems [for planners] of the early twentieth century”. Despite these examples of previous attempts to broach the food security issue, especially in times of need, Eisinger (1998:10) points to a lack of definition of food issues; he feels this “underwrites our collective responses, and reduces the likelihood of policy being formed in relation to the issue”.

Those who do recognise food as an important subject for urban areas call for a multidisciplinary approach. This is not only for what diverse disciplines can bring to urban food issues, but for how they can benefit from activities such as urban food production. Suggested disciplines include health, welfare, environment and resource sectors, transportation and energy, areas not necessarily used to or experienced in working cohesively (Brown, 2004). Indeed, cohesiveness is recognised by Lobe (2005) as a major element that is lacking between the few current directives supporting urban food initiatives. It is clearly stated that planning sectors have a vital role to play as part of a multidisciplinary approach (Pothukuchi, 2004), and planners already adopt multidisciplinary elements as part of a comprehensive approach to other topics in their field (American Planning Association, 2007).

Planning as a discipline is involved in most elements of the urban system, and policies addressing one topic will naturally affect those in another, at least according to general systems theory and ecosystem approaches (Johnston, 2000). As an example, Brown (2004) discusses the role of oil-based transportation modes affecting the cost of food. He states that changing either the food production location, or the transport mode would also affect the food cost – and changing both (say to local food accessed...
via foot or bicycle) has potential to impact several areas: to reduce carbon emissions, affect climate change, and change the power and finances of obtaining food. In this way, planners cannot help but take an important role in planning support for urban food issues, as all of their current work impacts on the system. They are already involved with elements of a larger system which impact directly onto food provision and security, although too often without considering the effects directly in relation to food (The American Planning Association, 2007).

It is therefore argued that urban planning as a discipline must start to take notice of food systems for urban communities (Pothukuchi 2004; Pothukuchi and Kaufman, 2000). Pothukuchi (2004:360) gives several pointers as to why “planers [should] pay more systematic attention to food”: She believes food is a basic human need, and that planning has a central focus on making places meet people’s needs, that food-systems interconnect with communities on several levels (economy, health, environment) where planning also interconnects with them, and that planners are suitably skilled to create and support successful food systems. These include skills such as conceptualising and connecting community and decision-making bodies, spatial analysis, policy creation, leadership and facilitation, and broad interdisciplinary perspectives. The American Planning Association (2007) also highlights that planning and food systems overlap in the interest areas of: local land use; local economy; health; ecological systems; social equity; and indigenous food cultures.

While there is much literature on the positive outcomes of local food production, authors such as Johnson and Baker (2005:314) reinforce that there are “conceptual gaps” which still need to be filled, and which are currently inhibiting food policy and actions. There is some debate as to the best way forward; planning currently impacts the food system simply through its involvement in urban elements such as transport, energy, health and physical infrastructural design. Given its involvement in these key elements, it is suggested in the literature that planning should also be intentionally looking at food issues, and planning’s current impact on them (Pothukuchi, 2004).

As discussed earlier, planning and governance are closely linked. There is a broad debate, not only regarding food issues, concerning the changing role of governance in
a globalising world (Bonanno et al., 1994; Phillips, 2006). Another debate surrounds the question of whether addressing food issues is legitimate at the local government level. Some argue that given that the food system is currently functioning, that it is not a ‘public resource’ (such as air or water) or an area the private sector is failing to invest in, government intervention is unnecessary (The American Planning Association, 2007). However, Bonanno et al. (1994) believe government intervention is appropriate. They suggest that the nation-state’s jurisdiction covers land and property management, powers of regulation, and influence over the “movement of goods… [and] mobilising [of] resources” (Ibid, 1994:3). In addition, the overseeing of economic development and a history of “agricultural producers [turning to the nation-state] to resolve their problems” serve to link governance and food production (Bonanno et al., 1994:8). This suggests that, while frequently presented as economic issues, food issues can indeed fall within the domain of the state, and that good governance from local government, especially of food linked resources, is important.

Local council policy affects local food production, through general policies directed at urban areas, as well as specific policies directed at urban food production. Lobe (2005:6) suggests “a governmental principle, plan or course of action [is] a blueprint to guide planning of specific actions to attain the desired goals or outcomes”. This suggest planners, within a political context, create and amend local policies and plans, and have the ability to both create and integrate support for urban food production. Conducive factors recognised in the literature include: land use policies, taxation systems, land regulations, space provision and zoning, infrastructure development, and local economic development plans (Hilts et al., 2008; Koont, 2009). Current forms of local government and planning support, as identified in literature on the topic of urban food production, identify support brought to urban food production through the involvement of planning bodies, as well as illustrating some of the opportunities for planning contribution.

Rios (2005) and Hilts et al. (2008) identify examples of political willingness to engage with and be open to new ideas and innovative urban food projects. National level guidance, as in Cuba’s National Urban Agriculture Group described by Koont (2009) provides an example of governments providing coordination and building
capacity amongst the community to undertake urban food production. Similar to this, Fegan (2007) and the American Planning Association (2007) comment on the effectiveness of local food council policies which offer guidance and support for urban food production activities. Specific policies and tools supporting urban food production include setting permanent boundaries between prime production land and urban development land, agricultural easements, covenants and zoning (Hilts et al., 2008). Koont (2009) also suggests examples of price fixing, and campaigns to remove stigmas associated with food production, as were used in Cuba, to encourage the purchase of locally produced food. Similarly, local government education projects promoting “ecological sustainability, social responsibility, and the pleasures of eating locally” are further forms of support for urban food production noted by Johnson and Baker (2005:313). The offering of services in kind, such as maintenance provided to local urban food production initiatives by the local municipality, are a further means of practical support currently offered by some councils (Miller, 2008).

Planning involvement documented in the literature appeared mostly reactive, responding to requests for support from communities with initiatives already underway, or in response to identified problems. This is in line with the argument presented by Hall (2000:33) that currently, as a result of privatisation, planning has been perceived as a reactive body: “a routine, unimaginative, bureaucratic regulatory activity generally disliked but regarded as a necessary evil”. While perhaps not always responding in unimaginative ways, urban sustainability activities, including urban food production, are also seen by Daniels (2008:13) as the result of “public-private” collaboration efforts, rather than government initiatives. These reactive portrayals of planning involvement in urban food production contradict Pinderhughes’ (2004) description of planning as a progressive visioning process. While many of the examples above demonstrate reactive planning, there is great potential for advancing urban food production through a proactive approach (Lang, 1999).

2.4.2. Potential For Involvement

It is suggested by Newman et al. (2009) that forward planning, in terms of building resilience amongst urban populations for local food security, should be considered by local government and planning bodies throughout the world. Proactive planning for
Chapter 2: Literature Review

food systems and supply is often illustrated by the example of Cuba, a case study of how planning alternative systems, technologies, polices and practices before a crisis event allows for timely and successful response when needed. As Koont (2009) outlines, before the 1990’s loss of Soviet-supplied agricultural resources, Cuba had suffered an American blockade in the 1970’s which encouraged early thought into import alternatives. Koont (2009) argues this preparation inadvertently facilitated the successful Cuban response to the Soviet-initiated crisis. More recent movements embodying local resilience, such as Transition Towns (see Hopkins, 2008), are also examples of proactive planning, although these are driven at the community level rather than by local government. Thompson (2002) comments on how use of open space in urban areas needs to be reassessed, and better aligned to achieve its needs and potential under new theories such as the ecological city and green networks.

Wheeler (2000) considers that local levels are the most appropriate for an effective change towards urban sustainability. As demonstrated in the literature review a number of urban sustainability theories and frameworks have already been developed, and a number of urban food production initiatives are currently underway at a local level. Given this, Wheeler (2000:133) suggests “the question is how planners, politicians and activities can best develop [sustainability initiatives] or help them succeed”. This research hopes to answer that very question, in relation to local food production initiatives in New Zealand’s urban areas.

2.5. Conclusion
The reviewed literature suggests that urban food production is an important step towards more sustainable urban places. However, it also suggests that despite evident examples of urban food production taking place in Western contexts, comprehensive support is not currently given by planning practice and local authorities. This thesis, therefore, proposes to ascertain how urban food production is expressed and experienced in the New Zealand context. It specifically concerns urban food production undertaken at a community, institutional and council level, as these are suggested to interact with planning and local council bodies. Further, it investigates if the motivations and problems expressed through the literature are also experienced in
Chapter 2: Literature Review

New Zealand examples of urban food production, and how the interactions with planning and local authorities compare internationally. Finally, this thesis outlines how international and local New Zealand experiences show ways in which planning and local councils can support and enhance urban food production.

Sustainable cities are described in the literature as the direction future cities must take in some shape or form. This may be by necessity, as a result of the current problems linked with urban areas, or by the opportunity a growing urbanisation offers for intentional design of the urban ‘utopia’ (Blassingame, 1998). It is no accident that urban food production is currently included as part of urban sustainability theories. Literature on problems generated through the current urban food system signify that a change is required to address multiple issues, including environmental pollution and degradation, resource consumption, health problems, urban food insecurity, and local community disempowerment and deconstruction. Urban food production is a common feature represented in urban sustainability theories, and despite a lack of discussion relating to planning practice, there are multiple examples in the international literature of established initiatives.

Many examples of urban food production initiatives noted in the literature took place without direct planning or local government support. This is despite there being several ways these bodies are shown to be involved, especially in land provision, as well as incidental support and involvement through areas such as water provision. For the most part, planning practice involvement is reactive, not the proactive and visionary approach suggested in sustainable city theories regarding design and provision of urban food production opportunities. Planning and local councils do have the potential to undertake a proactive role in the field of urban food production, and current planning support identified in this review will be compared with support identified in the New Zealand research locations, identifying areas where international models of support could be adopted in New Zealand. The following chapter details the methodological approach and research design used by this thesis to identify how, in the specific New Zealand context, planning and local councils can support and enhance urban food production.
3 Methodology

3.1. Introduction
This chapter details the research approach, techniques and analysis methods used to address the research aim and objectives (see Table 3). The research sought to obtain an in-depth understanding of urban food production experiences in New Zealand through a qualitative approach, and to identify opportunities for planning to support such food production. Three research locations - Dunedin, Nelson and Waitakere - were selected because of their diversity in character as well as their geographical spread throughout New Zealand. In order to obtain multiple perspectives participant observation and thirty-two interviews were undertaken with key informants from a range of institutions, local councils and urban communities. Secondary information was obtained from council plans and policies in each location. There were limitations to the research, despite careful selection of appropriate methods; as Black (2002:1) notes, social science research encounters many variables, “which are often difficult if not impossible to control”. The limitations associated with methods adopted by this research are discussed alongside each method, to show the confines of the research. The chapter concludes with ethical considerations.
Table 3: The aim and objectives of this thesis.

<table>
<thead>
<tr>
<th>Aim</th>
<th>How can planning support and enhance urban food production in urban New Zealand?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 1</td>
<td>What urban food production initiatives are currently undertaken in the research locations?</td>
</tr>
<tr>
<td>Objective 2</td>
<td>What are the motivations and facilitative elements, as well as the barriers to urban food production?</td>
</tr>
<tr>
<td>Objective 3</td>
<td>How is local government currently supporting or inhibiting urban food production initiatives?</td>
</tr>
<tr>
<td>Objective 4</td>
<td>What are key recommendations for local government as to how planning can contribute to and foster urban food production in New Zealand?</td>
</tr>
</tbody>
</table>

3.2. Qualitative Case Study Approach

In order to address the research questions and consider how planning can support and enhance urban food production in New Zealand, a qualitative research approach was applied in three research locations. Guided by the research questions, this thesis attempts to understand and suggest support for urban food production in a New Zealand context, based on areas of need as perceived by urban food producers and local councils. A qualitative approach is best suited to this task, as suggested by Kumar (2005:12), since it can “describe a situation, phenomenon [or] problem”, and by Richards and Morse (2007:30) as a means to “learn from the participants[’]” experiences. Using qualitative methods, such as participant observation and key informant interviews, also has potential to generate data reflecting participants’ own experiences (Bell, 1999). This study aimed to produce a set of nationwide recommendations; therefore, it was important that an in-depth understanding was obtained by the researcher of the complex views, experiences and needs of those undertaking urban food production activities in a number of representative locations.

In order to generate data as applicable as possible to the broader New Zealand context, as well as including experiences generated through diverse circumstances, information was collected from three research locations. Bell (1999:11-12) suggests such a case study technique identifies: a “three dimensional picture”, “unique
features” and “interactive processes… [and] patterns of influence in a context”. The adoption of a case study approach in this research allowed the research aim (see Table 3) to be addressed, as it entailed obtaining a ‘picture’ of urban food production in diverse New Zealand contexts, identifying ‘features’ experienced by those working with urban food production initiatives, and finally the ‘interactive processes’ between council and urban food producers.

3.3. The Research Location Setting

The selected case studies were: Dunedin, Waitakere, and Nelson (see Figure 2, Chapter 1). In selecting these three locations the following were considered: the urban size; geographical location; climate; population demographic; and the policies and orientation of the local council. This was to ensure diverse contexts were included and a wide range of situational experiences were explored for nationwide recommendations.

Involvement with the Centre for Sustainable Cities New Zealand (CSC) also influenced selection of the research locations. The CSC aim to support the development of an interdisciplinary research base from which innovative urban sustainability initiatives can be generated. This support includes scholarship grants, one of which was received for this research. CSC focuses on four locations, Auckland, Wellington, Nelson and Christchurch, therefore two areas (Waitakere and Nelson) were selected in common, in order for this study to directly contribute to the larger body of CSC research.

Defining the study areas within the selected research locations was a difficult task. City Council boundaries were identified, and all initiatives considered were within these boundaries. However, ‘urban’ New Zealand varies dramatically in density and landscape, and often local council jurisdiction covered areas considered ‘rural’. Ultimately, study areas were generated while in the field, based on participants’ involvement in what they considered ‘urban food production’. Initiatives were within areas easily accessible through public transportation or within walking distance from the city or suburban centres and utilised by residents from these centres. In the
interests of confidentiality individual sites have not been identified, however Maps 1-
3 in Appendix 1 highlight the study areas, within the city boundaries, containing all
initiatives considered in each research location.

Results collected from each research location were analysed as one dataset (see
section 3.5) and when presented and discussed specific locations were only
occasionally highlighted. Context is important, but the results focused on key
elements applicable throughout New Zealand with the aim of identifying
opportunities to support urban food production nationwide, rather than assessing
individual councils’ current practice. In addition, the research location communities
were small and participant anonymity was significantly increased through referring to
experiences from the research locations under key themes rather than individual
locations’ experiences (see the following ethics section). There are disadvantages in
this, however, in that some of the detail and significance of experiences may have
been lost through this thematic approach.

A further limitation to adopting a case study approach is that, as experiences are
specific to their location and context, results cannot always be accurately generalised.
In this study there was only scope to look at three case studies, which is a small
representation of the urban areas in New Zealand. However, it is important to look at
how the “case study fits in to the overall picture” (Bell, 1999:11). The insights from
this study, despite it being a small sample, can still constitute a valuable starting point
for addressing planning and local council support for locally-grown produce in New
Zealand’s urban areas, which can be applied nationally.

3.4. Research Techniques
Due to the focus of the research aims, primary data collection took the form of key
informant interviews and participant observation. Supplementary secondary data
including newspaper articles, policies, plans, and food resource materials were also
gathered. The majority of the field research was undertaken during the months of
June and July, in 2009. Approximately ten working days were spent in situ at each
research location, meeting informants and visiting food production initiatives and
councils. Additional interviews were conducted via telephone after the field work, if a face to face interview could not be arranged.

### 3.4.1. Participants

Key informants were defined as people whose knowledge and experiences could help build a detailed picture of urban food production in New Zealand. Representatives with a direct role in food production initiatives from the three different categories (as shown in Table 4) were interviewed. In addition, several interviews were conducted with representatives from local iwi and broader council roles. These representatives were interviewed because their views informed issues of culture, context and specific planning processes or constraints. In the interests of confidentiality additional interviewees were given the closest appropriate category of either ‘community’, ‘institution’ or ‘council’.

Table 4: Categories and Examples of Key Informants Interviewed.

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>Community garden members</td>
</tr>
<tr>
<td></td>
<td>Neighbourhood group members</td>
</tr>
<tr>
<td></td>
<td>Interest group members</td>
</tr>
<tr>
<td></td>
<td>Local iwi</td>
</tr>
<tr>
<td>Institution</td>
<td>School and tertiary education staff</td>
</tr>
<tr>
<td></td>
<td>Church group members</td>
</tr>
<tr>
<td>Council</td>
<td>District council staff</td>
</tr>
<tr>
<td></td>
<td>Councillors</td>
</tr>
</tbody>
</table>

Thirty-two participants informed this study in total and a list of coded informants has been included in Appendix 2. A balance was sought between numbers interviewed from each category of urban food production, as well as each location. This is shown in Table 5.
Chapter 3: Methodology

Table 5: Numbers of Key Informants by Location and Category

<table>
<thead>
<tr>
<th>Category and Location</th>
<th>Nelson</th>
<th>Waitakere</th>
<th>Dunedin</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Council</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Community</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Institution</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Totals</td>
<td>11</td>
<td>10</td>
<td>11</td>
<td>32</td>
</tr>
</tbody>
</table>

Initial key informants were identified through publicly available listings of representatives or contacts for community initiatives (such as community gardens) and council personnel in likely departments. Through talking with these initial informants, their knowledge of similar projects, relevant contacts and recommendations of further study participants were sought. Further participants were selected using a ‘snowball’ technique, whereby initial participants provided information and contacts for other relevant informants, building up a representative sample around the study topic (Davidson and Tolich, 2003).

One limitation, affecting the type of participant included in this research, resulted from the field research occurring in part during school holidays and the tree-planting season. This meant several identified key informants were unavailable for interviews during the data collection period, and were instead interviewed via telephone. While still contributing significantly to the study this may have altered the quality of the interview data, and any non-verbal information went unobserved. Additionally, July is in New Zealand’s winter, meaning many urban food gardens were in a semi-dormant state, or their ‘quiet period’. Therefore, less people were present during site visits. Although this did not affect key informant interviews, it is acknowledged that participant observation would have been different during another season.

One other difficulty was identifying key informants involved in urban food production initiatives which may have been undertaken, but were no longer active at the time of the study. Therefore, results came from either well-established and ongoing examples, or those recently established and still active. Participants were asked about knowledge of other examples, both successful and not, but unless
mentioned by others, it is acknowledged that a further group not represented are initiatives which were established, but are no longer active.

3.4.2. Interviews and Participant Observation

Information was gathered through one-on-one semi-structured interviews. Exact questions were not predetermined, allowing new questions to arise from the conversation. All interviews were structured around three themes: current involvement and experience with urban food production, barriers and facilitative experiences, and elements needing further development or support. The interview question guides used for this research have been included in Appendix 3. The interviews took place at locations convenient for the participant, including work offices, cafés, community gardens and community centres. Each took approximately one hour, and was recorded on a dictaphone.

Participant observation was also undertaken while in the field, as it was deemed important to gain a “holistic understanding” of information in context (Denscombe, 2007:218) and to inform the research objectives. Where possible, interviews for community and institutional initiatives were undertaken at the site of the project or it was visited shortly after. Most initiatives referred to in interviews were visited at least once to contextualise the information, and, where appropriate, participation in community gardening activities and workshops was also undertaken. Sites not visited were generally council initiatives, due to time constraints upon those interviewees.

As the research locations were relatively small geographically, and the interest communities within them were even smaller, a reasonably comprehensive coverage of the types of food production activities undertaken in the community, institutional and council realms was obtained. As noted by Moore (2006), while small numbers such as these do not make a quantitatively significant representation, triangulation and broad coverage of the topic is achievable. Data triangulation, drawing on a range of data sources (Guion, 2002), was undertaken through interviewing multiple representatives from within the same category. In addition several individuals from different categories but working on the same initiatives were interviewed where possible, for example council staff as well as community members. Secondary
information such as district plans and maps were also subject to document analysis helping identify features and aspects highlighted during interviews.

3.4.3. Secondary Sources
The focus of this study, New Zealand urban food production, is also affected by constraints such as District Plan rules, local geography and legislative planning documents. These secondary sources were also considered, to complete understanding of the New Zealand urban context and frameworks within which urban food production was taking place. Along with council documents, newspaper articles and resource materials on urban food production were collected.

3.5. Data Analysis
During the fieldwork period initial interviews from each research location were transcribed, and comments or considerations noted for incorporation into later interviews. Upon fieldwork completion the remaining interview recordings were transcribed, again by the researcher, offering a further chance to become familiar with the data during this process. From here on formatting, and data analysis was undertaken. Davidson and Tolich (2003:154) consider this a three step process: “data reduction, data organisation and data interpretation”.

Raw transcript data was ‘reduced’ through thematic coding. Key themes were generated around the research objectives while sub-themes were identified through international literature as well as emerging from the interview material. Themes and sub-themes were extracted from the interview transcripts along with supportive quotes, and organised as demonstrated in Table 6. This enabled a picture to be built up about the experiences, issues and suggestions from the informants on existing themes from the literature, and new themes from the field. These themes were then structured into a sequence, in order to present patterns and insights which informed each of the objectives and the final aim of the project.
Table 6: Coding example of a key theme: ‘existing council support’.

<table>
<thead>
<tr>
<th>Funding</th>
<th>Theme</th>
<th>Sub-Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quote</strong></td>
<td><strong>K I</strong></td>
<td><strong>Comment</strong></td>
</tr>
<tr>
<td>“…[organisation] they were a natural place to give some money to hire somebody whose job was to support the development. So that’s a grassroots community and home garden support role.”</td>
<td>Council KI :2</td>
<td>Council providing funding for urban food production facilitator role.</td>
</tr>
<tr>
<td>“…the other part of the relationship is actually that they do give us some small grants…”</td>
<td>Community KI :1</td>
<td>Example of grants provided by council given to urban food production initiatives</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Provision</th>
<th>Sub-Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quote</strong></td>
<td><strong>K I</strong></td>
</tr>
<tr>
<td>“…at our present site, and the council has been behind it, the council has provided the land, rent free.”</td>
<td>Community KI :1</td>
</tr>
</tbody>
</table>

3.6. Ethical Considerations

An awareness and consideration of ethical issues associated with social science research allowed, as much as possible, for their mitigation and management while designing, conducting and presenting this research. Collecting and using participant data comes with an ethical responsibility not to mistreat that information, or the informants providing it, for the purpose of the research. In accordance with standard research practice, the project proposal and methods were viewed and passed by the University of Otago Geography Department Ethics Committee, well before participants were sought.

At the outset of contact with research participants the project was explained and participants received a written information sheet (see Appendix 4). Participants were given the opportunity to have any questions answered, and were aware of their right to withdraw from the project at any stage. Contact details for future communication were included as part of this information, to allow participants to obtain answers to
any questions arising after the interview had passed. Participant comfort and perspectives were respected at all times during interviews. Given the small circles within which urban food production is undertaken in New Zealand, care was taken to preserve confidentiality. In producing the thesis this was achieved through selection of non-traceable quotes, omission of place and organisation names, and anonymous referencing (for example: ‘Community-KI:1’ replacing an informant’s name).

The interview technique involved open-ended questions, as discussed earlier in section 3.4.2; however, this raised ethical issues. A lack of predetermined questions allowed each interview to develop differently, and unpredictably. This left open the possibility for interviews to develop along themes potentially making the interviewer or interviewee uncomfortable. Before interviews it was made clear that should this happen, no disadvantage whatsoever would arise if a question remained unanswered, or a train of thought truncated. Finally, personal and identifiable data collected from participants, such as recordings, were destroyed at project completion. One exception to this is the retention of anonymous raw data around which the thesis results were based. These are required, by the University's research policy, to be retained in secure storage for five years before being destroyed. These techniques are to protect participants involved in the research process.

Finally, it is important that my positionality is discussed, as it has influenced this thesis at every stage of its development. I am a planning student and a fourth generation New Zealand gardener, who has been active in the Dunedin urban food production scene for the past seven years. This influenced my decision to research the topic of urban food production and associated planning involvement. My interests and personal motivations to see urban food production develop where possible, have also influenced how I addressed issues such as confidentiality and the presentation of the research findings. I have a desire to see positive change in the area of council support for urban food production, and understand some of the issues and opinions addressed in this thesis may have potential to generate conflict, disrupting hard-worked-for relationships between urban food producers and local councils. In part this has swayed my decision to address the issues raised Thematically rather than by location, in order to generate anonymity and protect relationships between various
participants. It also makes it possible to address negative issues without finger pointing.

Given that this thesis combines my personal interests in planning and urban food production, it influenced how I related to both local council representatives and urban food producers. Rapport with both groups was supported through my sympathies lying with these two areas, although it was especially constructive in my connecting with participants involved in undertaking urban food production. My interest in urban food production has also influenced my presentation of this thesis as one which highlights problems as opportunities, true to the motto ‘vive on espoir’ – to live in hope.

3.7. Conclusion
This chapter has presented details of the research methods used in this research. It justifies why these methods were necessary in order to answer the four research objectives and overall aim, and seeks to provide the reader with an in-depth understanding of any limitations to the ensuing results. A qualitative approach was adopted, as the type of information sought was the detailed experiences of urban food producers in the three representative research locations (Dunedin, Nelson, and Waitakere). Thirty-two interviews were undertaken with informants from community, institutional and council level participants in urban food production. Participant observation was also undertaken, and relevant council plans and policies reviewed. The information was thematically analysed and presented in such a way as to preserve the anonymity of participants. While all care was taken with the study design, there were limitations, which were concentrated around the types of participants interviewed, the time of year field research was undertaken, and the fact that the analysis method did not identify place-specific experiences but instead concentrated on broad themes. The results from this research are now presented and discussed, starting with a chapter characterising the urban food production initiatives currently undertaken in the research locations.
4

Characterising Urban Food Production Initiatives

4.1. Introduction
This chapter analyses the diverse range of urban food production initiatives undertaken in the three research locations. The analysis focuses specifically on activities undertaken by communities, institutions and councils. A comparison is made between urban food production in the case studies with that described in international literature. Results and discussion are presented relative to their category of community, institution or council. Firstly, section 4.2 looks at community initiatives and identifies that while ‘traditional’ forms of community level urban food production activities were undertaken they frequently incorporated elements designed to support individual gardening. This was true of many New Zealand examples, but of few international descriptions.

Section 4.3 considers institutional gardens, most of which were located in school grounds. Additional institutional examples of urban food production included church activities, a retirement village and tertiary institutions. Finally, council initiatives are presented in section 4.4. These consisted mostly of fruit and nut tree planting; other examples commonly found in the literature, such as allotments, were not identified in the three New Zealand research locations. The characterisation of urban food production in the research locations undertaken in this chapter prepares the scene for later chapters looking at producers’ specific experiences.
4.2. **Community Initiatives**

A number of community gardens and community food production activities on private or quasi-private land were identified by participants in each of the research locations. Fairholm (1998) defines community gardens as characterised by collective effort, situated on common land and utilising shared basic resources. Armstrong (2002), however, reinforces the impression that a broad diversity amongst community gardens can be expected. Each research location had at least one well-established community garden fitting Fairholm’s definition. Community gardens were identified as increasingly common in the research locations, with the majority having been established in the last 5–10 years. This trend was also noted by the media, with community gardening activities frequently featuring throughout 2009. A discussion of motivations behind community food production activities, suggesting why they are on the rise, follows in Chapter 5.

In line with Armstrong’s (2002) findings, the community food production initiatives identified in this study were all different in their management, structures and assets. Trusts, committees and links with broader community organisations had been established in order to facilitate organisation, ownership and funding. Where public land was communally worked, the produce was distributed amongst participants, while in some cases plots within a designated public section were given to individual participants to use and harvest from. Propagated plants or excess produce were also grown for sale in some examples, generating income for the gardens. Facilities ranged from nothing but the land itself, to communal work tools, well-established propagation sheds, workshop rooms and water collection systems (see Figure 3). Facilities were often linked with non-gardening community uses such as club workshops and meetings, and several gardens also used the facilities of adjoining community centres, *marae*¹⁰ or schools. In one example quasi-public land was also used, namely the local police station’s backyard.

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¹⁰ One translation of *marae* is a community meeting house. The term can be used to describe the house or hall, as well as its surrounding buildings (Māori Dictionary, 2009).
Chapter 4: Characterising Urban Food Production Initiatives

Figure 3: Photo of a community garden, showing sheds and composting facilities
(Source: personal collection).

Not all community food production activities, however, followed these traditional definitions of community gardening, especially in relation to public land use. Facilitated through the likes of the ‘Out Of Our Own Back Yard’ website (www.ooooby.ning.com), transition town groups, and neighbourhood groups, work on individual properties was undertaken in a community-orientated spirit. Participants’ examples included neighbourhoods getting together to plant or prune on members’ properties, undertaking ‘working bees’ on private sections, and having workshops in people’s gardens. In these examples, instead of splitting produce from communally worked public land, spaces such as the internet were being used as the ‘community hub’ for community supported effort on private properties. These activities were facilitated through gardening groups, email lists or established community gardens. The two different forms of community level urban food production, traditional community gardening and community-facilitated individual gardening activities were mutually supportive, however. Skills learnt communally in community gardens were designed to be applied in individual gardens, as well as individual gardens becoming
places of community learning. This process is described by a community garden facilitator, Community-KI:6:

…[you] come down here [to the community garden] and learn your skills on how to do your sheep mulching, how to plant your seeds and everything, and take it back out into your own garden. There is a lot more of that, come and do the learning, go out into your own garden and then share it with your neighbour. I think that is fantastic, you know, if we can get people doing that and taking, I’d like to see as, eventually, more of a learning place.

This suggests that in the New Zealand research locations community gardening provided elements of teaching and learning as much as a physical space for food production (see Figure 4). In many examples it was the learning and support which was communal, while predominantly the physical gardening was individual or undertaken on an individual’s private land. This is supported by Colding et al. (2006), who identify the specific benefit of pooling and exchanging information, achieved by undertaking gardening activities as a group. In the New Zealand context communal learning but individual gardening could be a reflection of current urban density which, unlike in many international ‘urban’ areas, is low with relatively large average section sizes. As an example, an urban ecological study by Freeman and Buck (2002:162) suggests that “the majority of open space in Dunedin is either privately owned as gardens or is informal open space [and therefore not owned or managed by the local council]”. Participants themselves felt property sections, even in central urban areas, were typically considerably larger than higher density urban centres around the world, as noted by Community-KI:4:

I think there is both a desire to garden communally, like picking a spot where you come together and you either have allotments or you have crops…so it’s a common space, but there’s also a push to grow food at home, but on a community base …people have lots of space in their yard. Most, pretty much everyone has a front or back yard, unless you’re living in an apartment and there’s not that many apartments actually. You know, outside your front or back door is a very convenient place to grow your herbs, there is no point in walking five blocks down the road to pick parsley.

So while community gardening of the more traditional definition was certainly occurring in the case studies, other community efforts to communally support
gardening on private properties had also been established. In the same way, community gardens were seen as places where skills were learnt for use on private property, rather than the more common international expectation of community gardens providing access to scarce available productive land in urban areas (Miller, 2008).

Figure 4: Educational signs in a community garden (Source: personal collection)

Land scarcity, as identified in the literature, also encouraged the development of urban food production on quasi-private land, such as that owned by institutions. Two factors concerning land can be identified here. One issue, identified by Community-KI:10, is a lack of public land available for community activities: “one of the biggest problems, is where is the land for [community gardens]?”, encouraging the development of a number of the institutional initiatives identified in the following section. A second factor is a large supply of private land on residential sections throughout New Zealand’s urban areas, but coupled with what interviewees perceived as a lack of skill, time, and support in utilising that land for urban food production. Therefore, a few traditional community gardens along with new forms of community gardening activities were adopting a facilitative role in overcoming the barriers to
productive use of private sections. The use of quasi-private land, such as that owned or utilised by institutions, was also found in the New Zealand research locations. This chapter now looks at urban food production activities undertaken at an institutional level.

4.3. Institutional Initiatives

School gardens, tertiary education campuses, church projects and a retirement village were identified as ‘institutional’ food production initiatives in the case studies. Institutional food production initiatives differed from community initiatives, in that they were instigated or hosted by a more established community, such as an education facility, faith group or a managed living complex, rather than by people from the community unified by a common interest in food production. In general they appeared to have broader and pre-established member networks, organisational structures, and in some cases more access to resources such as land and volunteers than community level initiatives.

Various school food gardens constituted the majority in this category, with each research location having significant numbers. Kohlstedt (2008) attributes a high historical prevalence of school gardens to a perceived natural education requirement for children, and the flexibility of school gardens for meeting assorted outcomes, including health, community and environmental education. This included art classes, as Figure 5 shows, with children having designed and made scarecrows to protect their seedlings. The range of school gardens in the case studies supports Kohlstedt’s assertion, demonstrating varying sizes and uses, from small educational gardens, to orchards and established plots which students were eating out of as part of cooking and nutrition classes. Many of these, but by no means all, had emerged from involvement in wider programmes such as Enviroschools. The Enviroschool programme aims to “build a network of schools/kura committed to environmental learning, action and creating sustainable communities” (Enviroschools, 2009: n.p.). Schools and tertiary campuses hosting food gardens often had other established environmental education initiatives underway, suggesting food production was part of a wider sustainability movement or awareness in these institutions.
Church institutions were also identified as hosting gardens, and facilitating mentoring or garden establishment programmes for individuals referred from other services, including social welfare and budget advisory groups. As with community gardening initiatives, the focus of church initiatives included supporting individuals to become food producers themselves. A retirement village was also identified as having an established resident garden. This was hosted free of charge on retirement village land and incorporated several systems of gardening. Similar to allotment systems commonly seen overseas (see Fairholm, 1998; Bellows, 2004) a number of residents individually managed private plots and grew food for themselves (see Figure 6). Additionally, communal plots provided fresh food for sale to non-gardening residents, profits going back into garden supplies, while any excess was donated to the on-site cafeteria. Facilities such as composting, worm farming, water collection and irrigation were established on site, and educational activities with the broader community were being considered.
Again as with community initiatives, there was a focus on education, skill sharing and learning amongst food production initiatives in institutions. While educational objectives could be expected within educational institutions, a gardener from the retirement village showed a similar attitude towards sharing with the wider community in the following comment:

...people want to come and see what we are doing [and] they can come and learn from us, because we are prepared to share our knowledge and I think that is very important (Institution-KI:7).

While in New Zealand Ross (2008) gives examples of state support of school gardens from as far back as 1900, institutional gardens were identified as those with the least interaction with planning bodies such as local councils. A lack of current support may be because land use consent for institutional urban food production activities is
generally addressed internally, although council consents were still required for some activities such as erecting water tanks. How this affected facilitative elements, barriers and council support for institutional level urban food production is discussed in Chapters 5 and 6. The discussion now turns to look at urban food production undertaken by New Zealand local councils in the three research locations.

4.3.1. Local Council Initiatives
The only urban food production initiatives directly undertaken by local councils in the research locations were management and planting of fruit and nut trees. This was an initiative undertaken historically by councils, and was an activity considered to take up more space than individuals were willing or able to set aside. Council support for urban food production initiatives was, however, offered to community and institutional level activities in indirect ways, as detailed in Chapter 6. Examples of council-initiated allotments (see Bellows, 2004; Wiltshire and Azuma, 2000; and Crouch, 1989), food policy councils such in Portland and Toronto (City of Portland, 2009; Toronto Food Policy Council, 2009), and municipality-initiated edible landscaping (Beck and Quigley, 2001; Salcone, 2005) identified in the literature were not found in the New Zealand research locations involved in this study.

Along with fruit and nut trees currently being planted by council, productive tree-planting initiatives had also been undertaken historically in some of the research locations. Councils were also assuming responsibility for established trees inherited through orchard remnants on council-purchased land. In some cases, then, councils were maintaining food-producing trees by default. This meant local bodies were both proactively and reactively undertaking urban food production activities in all of the research locations. The more reactive approaches were in some cases undertaken reluctantly, as shown later in this thesis. ‘Accidental’ plantings were observed by key informants, including ornamental coconut palms which produced mini-coconuts, as well as smaller ornamental plantings of herbs in public places on council land and assets. Multiple examples of established trees could be found in larger urban reserves on city outskirts and in designated horticultural parks, due to the space required by some of these species.
However, increasing momentum for deliberate edible plantings was visible in several examples. As Council-KI:6 commented, there was a desire to identify appropriate species to plant in smaller central urban parks and locations closer to city residents:

…[what] we want to move to is having the trees much more accessible to people, closer to home. So there is going to be a lot more planting of fruit and nut trees in what we call our neighbourhood parks.

Council interest in community accessibility to produce was perhaps driven by increasing knowledge regarding health benefits associated with fruit availability. This encouraged councils to consider mechanisms for making such produce accessible and available to urban communities, as described in detail in Chapter 6. It was also realised that space could be an issue for those wanting the benefit of local fruit, resulting in a push for council, owning larger urban plots, to take on this role, as Community-KI:4 describes:

I think there’s a whole push now for fruit trees because when you have a nice mature fruit tree that produces a lot of fruit, you know that could feed a lot of people in a street… and people feel a bit lost with [fruit trees], because some people don’t really have enough space to plant a fruit tree in their yard, or they might have space but they actually don’t want a tree in the middle of their yard that’s going to create shade, so using public space for that is of high interest.

It appeared that while community gardens and institutional gardens provided education as much as space, councils were undertaking forms of urban food production that were more space-demanding. As noted later, fruit and nut trees were also considered to require less maintenance than managing vegetable gardens. Additionally, attitudes of those in council were perceived to be changing, as noted by Council-KI:3, who suggested “Councillors are now accepting as part of subdivisions, you know, fruit trees being planted… so some of those boundaries are starting to be crossed”. Finally, district health boards, in conjunction with councils, had also collaborated to initiate ‘open orchards’. This scheme originated in Southland, and aims to re-establish heritage fruit trees throughout the community as well as the skills to look after, use and benefit from them (South Coast Environment Society, 2009).
One final council initiative observed was Waitakere City Council’s small but healthy vegetable garden directly outside the Civic Centre.

4.4. Conclusion

This chapter has outlined the scope and range of production in the three research locations. Within the three categories considered, urban food production occurred in a range of ways. Community-level gardening was taking on both ‘traditional’ community gardening forms, along with other community activities aimed at supporting and increasing the ability of individuals to produce food on their own private properties. Institutional food production was most common in the form of school gardens although, guided by inspired individuals, examples were occurring in other places of learning such as tertiary campuses. Retirement village and church institution projects were also underway, again with a focus on individual gardening supported by the wider institutions. Finally, council efforts towards urban food production took the form of fruit and nut-producing trees planted and maintained on public lands. Predominantly this was happening in the outskirts of urban areas, but increasingly examples of council staff attempting to locate them more centrally could be seen.

The groups undertaking urban food production were small and well linked. Community gardens occurred on school grounds, facilities were shared between institutions and communities, and councils were supporting community gardens despite not initiating any themselves. The following chapter assesses common motivations, support and barriers identified in the urban food initiatives described above, in part answering the question raised in this chapter regarding why the current forms of urban food production have emerged.
5

Motivations, Support and Barriers

5.1. Introduction
This chapter identifies facilitative elements and barriers to urban food production in the research locations. A diverse range of concerns motivated support. In both the literature and the research locations, urban food production was described as a means to improve health and nutrition (Morton et al., 2008; Armstrong, 2000), to provide educational opportunities (Fairholm, 1998), and to contribute towards community development (Pothukuchi, 2004; Mintz, 2006). It was also utilised as a means to develop local resilience and foster local identity (Miller, 2008; Farnworth, 2008), and support waste minimisation (Smit and Nasr, 1992). Furthermore, inspiration from successful food production projects and other environmental activities was found to raise support for new initiatives.

Motivations behind urban food production are discussed in the first section of this chapter, in order to identify why urban food production is taking particular forms, their uniqueness to the New Zealand settings, and how motivations may be similar to other council-supported activities. Section 5.2 analyses what encouraged food production in the research locations, while section 5.3 looks at barriers experienced by those participating in urban food production. This allows comparison with common barriers and solutions identified in international literature; it also opens into discussion carried on in Chapter 7 around current problem areas or support gaps.
5.2. Facilitative Motivations

Several drivers were identified to be motivating and supporting urban food production initiatives in the research locations. This section discusses the key elements of health, education, community development, local resilience and identity, and finally the role of pilot projects and other successful examples.

5.2.1. Health and Nutrition

The addressing of health and nutrition concerns were common objectives motivating urban food production both in literature reviewed (Howe, 2001) and the research locations investigated. This meant that significant support for urban food production came from local health bodies, in the form of resources and funding. Concern about daily nutrition and wellbeing as well as conditions such as diabetes and obesity were frequently linked to diet and were key problem areas raised by interviewees.

Research into health and nutrition, according to Institution-KI:1, finds that:

…only about 45% of [one case study location’s] residents actually eat their 5+ (fruit and vegetables) a day. The big issue is cost when it comes to fruit and veg, so there’s a big incentive for us to be involved in ways of making it more affordable for people.

Such research was believed to indicate evidence of poor diet and encouraged support for food production projects seeking to improve community access to fruit and vegetables. As Community-KI:4 was moved to comment: “[it is] a serious issue that our nutrition is going downhill”. Community concerns regarding declining nutrition, as the quotes above show, appeared to be a strong motivational factor behind urban food production. Such factors have also been identified internationally, where access to local gardens in urban areas was suggested by Morton et al., (2008) to benefit community health.

Links between poor nutrition and poverty featured strongly in the literature (for example see Chilton and Rose, 2009), with similar connections found in the New Zealand research locations. In Community-KI:4’s case, he felt initiatives were “…trying to target more low income areas, areas that might have poor diet [and] zero gardening knowledge…” . Similarly, District Health Boards (DHBs) initiated and
funded urban food production projects, especially in low decile areas, and often in conjunction with community organisations. Institution-KI:3’s comment illustrates that she felt DHB support in this area was motivated by a need to encourage healthy eating and tackle disease:

…there was an interest [by DHBs] to do that kind of relationship-building between the source of food and what people will eat. Because children and families were getting to be obese, there is diabetes...

Many gardens in schools also sought to improve links between production and food to benefit students’ health and nutrition. Likewise, many planning theories as well as New Zealand councils include concepts of ‘healthy’ amongst their desired community outcomes and objectives (New Zealand Government, 2009). This suggests, at least in theory, that addressing health and wellbeing is a commonality between both local councils and urban food production initiatives. Supporting educational opportunities around healthy eating through gardening activities was also motivated by health objectives. Institution-KI:6 articulated the opinion of several interviewees when she stated:

…a lot of the children eat such rubbish… [We] really wanted it so that we could prepare our food at lunchtime, eventually, so that those kids that have nothing get the benefit of [healthy] food.

It was felt that students, especially those who would not otherwise receive education in such areas, would benefit through education on growing, cooking and eating healthy food. Broader educational objectives were also encouraging the development of urban food production initiatives, as discussed in the next section.

5.2.2. Educational Opportunities
Opportunities for education motivated many individuals and groups to push for urban food production initiatives. Gardens in schools were encouraged as educational opportunities addressing waste management and life skills as well as health and nutrition (see Figure 7). This is important, as it identifies a potential opportunity for councils to become involved, especially around the area of waste minimisation, which
falls within the area of local council responsibility. Regarding life skills Council-KI:6 saw food production in schools as:

…a way of getting children to understand about what life skills are …I think education needs to be about what we need to know, and we need to know how to read, and we need to know how to do maths, and we need to know how to look after ourselves. Learning how to grow food gardens, and how to make soil to nurture those food gardens, I can’t think of anything more important.

This link between food production and school education can be seen both historically and internationally, especially in relation to education on the natural world and environment (Ross, 2008; Kohlstedt, 2008). It was reinforced repeatedly during interviews. Institution-KI:4 stated teachers were “‘shocked’ about students’ lack of knowledge of veggies and where they come from”, and this prompted the establishment of edible gardens in some schools. In many schools with gardens, produce was either taken home by students to their families, or cooked and eaten at school.

![Figure 7: Example of composting in schools (Source: personal collection)](image)
High frequency of urban food production in schools was identified, in a Waitakere survey undertaken by Ecomatters Trust (2009). This found that out of 73 schools, 24 had established vegetable gardens, with a further 26 schools in the planning stages; additionally, 9 schools had fruit trees established, with a further 17 planning planting at the time of the survey. The high number of gardens in schools could perhaps be explained by the perception that school grounds were ideal locations, being areas where learning and knowledge-sharing traditionally take place. Educational gardens were seen as appropriate in this setting along with additional educational activities for both students and the wider community. One informant described an instance of learning materials aimed at adults as well as students, in a community garden based in school grounds. In this example it was “descriptive signs, so that informal learning [could] go on any time people go in” (Community-KI:1).

Outside schools, urban food production was also motivated by educational opportunities. These included supporting communities to overcome a shortage of skills, and to encourage home gardening. Community-KI:4 commented that opportunities for people to learn skills in a community garden context could help overcome a lack of confidence about establishing food production on their own gardens:

[If] you know nothing about gardening, it’s kind of harder to get started sometimes …you think well if I want to do it at home, it’s all by myself and I don’t really know how to start.

This also motivated community, church and other support groups who were aware, like Community-KI:4, that: “there are a few residents on the street who would love to have a garden and they have no idea where to start”. Workshops aimed at supporting food production through community activities exemplified this. One church-based example saw community groups visiting individual homes on a regular basis. Initial visits helped establish a garden bed, and then two more visits covered planting and harvesting. Throughout the process there was a focus on participation, teaching and building community networks, such as reciprocal volunteering, to ensure ongoing assistance and support amongst new gardeners. As the education components of both community and institution initiatives were high, any proposed council support should
enhance and not detract from this. Identifying these motivations behind urban food production, suggest that a degree of independence in production is desired, with potential council support facilitating skills learning, and building the ability of communities to ultimately undertake the task unassisted. These self-sufficient and independence objectives are described city-wide when looking at local resilience in the following section.

5.2.3. Local Resilience, Local Environment and Identity

Several examples were identified of urban food production being inspired by a desire to generate local resilience. This was often linked to environmental concerns, peak oil, excessive energy use and carbon emissions. The importance of caring for and respecting one’s turangawaewae\(^{11}\), issues around local identity, and the importance of place were also felt to influence ideas around urban food production.

Local and community resilience are part of a broader conversation around sustainability, endurance, “adaptation”, and ability to effectively respond to “crisis” (Newman et al., 2009:1). Council-KI:2 found that “conversations around building community resilience through localised food production” were a “primary vehicle for moving [urban food production] forward”, while Community-KI:3 participated in urban food production and the creation of shorter food supply chains to “generally increase the resilience of our community [in case] we have any stress around food supply”. Council-KI:8 commented, “assuming the forecasts are correct, particularly about energy scarcity”, that the high energy consumption and carbon costs associated with food production were a concern. In light of similar information, communities were beginning to think about their current food provision systems, and were encouraged to undertake food production in their local areas. Parallels in the international literature include the development of the Transition Town movement (see Hopkins, 2008), a movement also mentioned by several research interviewees.

Council support for urban food production also addressed local resilience issues in the context of global shortages. Council-KI:9 felt food production support exemplified an

\(^{11}\)Translations of turangawaewae include ‘home ground’, ‘standing ground’, or place where one has right or residence’ (Māori Dictionary, 2009).
active council “response to the end of cheap oil, and climate change concerns and so on” and Council-KI:10 thought this support needed to extend to the strategic levels and “policy framework[s], which then provides the opportunities for urban food production”. This suggested local resilience concerns, at least amongst the community, are already beginning to raise awareness, potentially influencing councils’ long term planning and policy frameworks. Such concerns may be one potential means of generating council support in other locations in New Zealand.

Local food production is considered to be a key aspect in promoting environmental responsibility and guardianship (Fegan, 2007). In the context of this research, native planting initiatives were a starting point for several food production endeavours, such as the “adopt a stream” project. In one example Community-KI:10 explained how “the vegetables [came] later”, but were supported by the same desire to improve and enhance the local area. Māori concepts of kaitiaki12 and turangawaewae were also briefly mentioned as potentially generating and motivating urban food production, as people felt food was linked to their sense of place. Council-KI:2 pondered the following concept:

…if I’m eating food that is grown in my local area, I am a deep part of that ecology, and if I instead consume everything from somewhere else, how can my body resonate with that local area, that turangawaewae, that land? …Food has always been a strong vehicle for bringing people together and identifying who they are.

This suggested a sense of local identity fostered by eating foods grown in local places or mahinga kai13 may be one New Zealand value promoting value in and support for urban food production (see Figure 8). Urban food production was also seen as holding potential to generate strong local identity, something especially important in urban areas, since Mintz (2006) considered community and identity were weak in these areas.

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12 Translations of kaitiaki include ‘custodian’, ‘trustee’ or ‘guardian’ (Māori Dictionary Online, 2009).
13 One translation of mahinga kai is local food gathering sites (Māori Dictionary Online, 2009).
Issues of local control and resistance were also raised. Community-KI:2 said: “we have had a cultural re-colonisation and invasion …if we are growing our own food we are no longer buying into the industrial food system”. This parallels literature on the international Vía Campesina (peasant farming) movement, with control over food linked to sovereignty, and a desire for independence motivating local production (Desmarais, 2008). These concepts relate directly to community strengthening and development.

![Figure 8: Māori cultural elements incorporated into a community garden (Source: personal collection).](image)

5.2.4. Community Development

A concern for community development was found in both literature and the research locations to motivate urban food production. Community development also overlaps with the previously mentioned categories of education, health and wellbeing, and local identity. This diversity of meaning captured by the term ‘community development’ perhaps explains why it was so commonly raised as a reason behind establishing urban food production. Community development issues were illustrated in remarks about employment generation, lifestyle choices, building supportive communities, and responding to community desire.
Some interviewees considered that the Local Government Act 2002 (LGA) justified urban food production, as it contributed to community development, and food access was considered to be a basic community need and therefore important for community wellbeing. Council-KI:9 for instance, felt the Act gave “wide powers to councils [who] are supposed to be worried about the wellbeing of [the] community …how we are actually going to survive as a society”. This suggests councils have the legal power to support such activities. He felt, however, that:

…you need to have a community, also, that is calling for that sort of thing to happen, because councils won’t necessarily provide the leadership without the community demanding it.

Therefore, even with their legal power, councils were seen to be driven by community demands, and council action required a community voice to direct its leadership. While some projects had ‘top-down’ motivation, responding to a perceived need to “get a lot more people…thinking about the source of their food” (Institution-KI:3), Community-KI:1 saw ‘bottom-up’ motivations in an “…interest in learning how to grow food” amongst New Zealand communities. Recent stimuli were also identified, including a recession and high unemployment levels. Council-KI:9 observed that “…people have less money or more time because they are not working as much”, while Community-KI:3 noted initiatives had been developed “to increase people’s employment opportunities, and to provide food to people who need food”. These recent triggers could be seen as raising the profile of urban food production, and are perhaps behind the increasing number of examples amongst the New Zealand research locations, and indeed amongst the international literature.

However, it was not only the question of enabling access to food that motivated projects. An increasing awareness about the importance of community development, or perhaps, as put by Mintz (2006), a noticeable absence of community, is one possible driver behind increasing support for urban food production to assist in the broader development of community. Community-KI:7 felt “[urban production is never] going to grow enough food for a city, but the value is in education”. Others considered “growing our own food creates that sovereignty, that independence, and that resurgence, re-growth of functional community” (Community-KI:2). Still others
suggested “there’s also a real desire with people to connect with their community again, and there’s something about growing food… that connects you with your community” (Community-KI:4). These mentions of the broader benefits of urban food production resonate with observations by Mintz (2006), Miller (2008) and Pothukuchi (2004). Literature on the ‘Slow Food Movement’ (Pietrykowski, 2004; Tam, 2008), and tourism around celebrating and showcasing local and cultural foods also matched the New Zealand experience. Community-KI:1 said:

…we should know that there is nothing that we do that can’t add to our [tourist] appeal, or undermine our appeal, and the food thing, the uniqueness of the experience of being here …when you eat [here], you eat [our] food.

Knowledge of these broader community benefits came from many places, including literature and other successful projects.

5.2.5. Success Stories and Pilots

Urban food production initiatives were frequently inspired by the success of similar earlier endeavours. Interviewees noted New Zealand or overseas initiatives working well, and trial projects or pilots successfully achieving outcomes, while non-food initiatives often encouraged the generation of replica food-focused projects. For example, even when funding was not obtained for long term projects, people were motivated by the desire to “provide good examples that people can see… we won’t have funding for it again probably, but the point was really to use that funding to do demonstration things to show people that it can be done” (Community-KI:3). This motivation included a belief that “[the] more people do it, the more successful good examples there are, [and] the more likelihood there is that other people take it on” (Council-KI:7). Council-KI:7 also felt examples made others aware of the possibilities:

…our parks staff have just gone and done it, they have planted food crops in road reserves, and that has been a really positive thing which has then influenced the desire to include it in the strategic stuff …once it has been proven to be working.
Evidently, successful one-off initiatives triggered projects incorporation at a strategic level which lead to wider implementation. Similarly, Register (2006:338) notes “good examples and policies will build up and capture the imagination”. Within the New Zealand research locations, it was not only successful food production examples: Community development and environmental projects were also motivating food initiatives.

Pressure could be put on pilot projects because they were seen as precedents, and since failure could prevent future initiatives. This was voiced repeatedly, as second chances were considered hard to get: “I really hope that [the community garden] succeeds” commented Community-KI:9 “because [the council] are kind of looking at that as a bit of a test case”. Community-KI:7 had also experienced the council refusing to rent land for a community garden, which prevented the development of her initiative, because “10 years earlier… the [council] had sponsored a community garden… then two years later it was abandoned… Therefore, no community gardens for the rest of eternity in [this area]”. On the other hand a comment by Community-KI:6 suggested even unsuccessful projects could be motivational as there were learning opportunities in all projects: “…we did this and it worked, and we tried this and it didn’t, [at least] people have got something to look at”. There is much to be learnt from both successful and unsuccessful urban food production initiatives. Through identifying the key drivers behind urban food production (summarised in Figure 9) it can be seen that the themes behind urban food production were similar in the New Zealand research locations and the international literature. Objectives held by councils, and supported through legislation such as the Local Government Act 2002 (see section 5.2.5), overlapped frequently with the broader objectives or motivations behind urban food production. In that these two are similar, there is a potential role for collaboration, and it suggests the types of support which may be offered by planning as well as those suitable to the objectives behind different types of urban food production. The next section of this chapter turns to the barriers and setbacks encountered by those undertaking urban food production. Key barriers are explored and compared to those identified in the international literature.
5.3. **Key Barriers**

Key barriers to urban food production initiatives in the research locations were identified, and help to address research objective 2. Along with current support the barriers also influenced the forms urban food production took within the research locations, and identifying them helps explain the parameters within which initiatives develop. Importantly, exploring barriers enables analysis of areas needing further support, which facilitates having them addressed (see Chapter 7). It also allows areas where support is most needed to be identified, and for future support to concentrate on these. Barriers fell into three overlapping categories: physical, human resources and structural, and were similar to those identified in the international literature. It should also be noted that this current chapter excludes council barriers, which are discussed in detail in Chapter 6.

### 5.3.1. **Physical Barriers**

Tangible barriers were categorised as ‘physical’ and, as in the literature, consisted of access to land and finance issues. Three other barriers – vandalism, community
support and physical maintenance – were influenced by both ‘human resource’ and ‘physical’ elements, and are also included in this section.

Land and Space

Access to land was not identified as a barrier by all informants, but those issues which were raised were threefold; competition for use, insecure tenure and quality of available land. Land access was considered more problematic in higher density areas, especially recently through developments and subdivisions, described by Institution-KI:1 as a “big house small section” transition. These areas were seen to have less opportunity for both public and private urban food production. However, areas with space also faced problems because of competition for use. In line with international experiences (see Baker, 2004; Kaufman and Bailkey, 2000), interviewees suggested current prioritisation of ‘empty’ spaces such as parks, sports fields, and economic development land uses was problematic for urban food production. Community-KI:3 suggested perceptions that there were already private spaces for food production contributed towards this: “we don’t have the same population pressure as other places, so there is a perception that everyone has space”. Indeed, space was seen as underutilised instead of absent, and Council-KI:10’s example demonstrates it was not for want of land:

There are definitely parks, you probably know yourself wandering around town, that they are just under-utilised and a wasted opportunity. …[There are opportunities, like] if council purchases strategic sites. But I think in all honesty that we have enough land of our own to actually free up the odd plot.

Open public spaces were not depicted as dispensable, but urban food production was considered notably absent from the allocation use-list for urban public spaces. Planning was very much recognised as key to land access problems, as Council-KI:7 states: “the key [barrier] would be the land, that’s a planning thing”. A lack of mixed use and flexibility was encountered in one example of school open-space per student ratio, and suggests that planning and guidance rules unable to recognise context can be problematic. Institution-KI:3 found:
…we couldn’t do [the fruit tree planting], because the school is just right on the edge with the numbers of children to the numbers of square meters of playground space.

Due to space per person guidelines, for schools and cities alike, empty land available was not always the best for food production. Some sections were too small and therefore problematic for fruit trees, while other currently unused land had previously been landfill, potentially contaminating produce. Still others lacked proximity to their target communities. Additionally, Community-KI:3 raised an interesting point regarding land required by multiple and diverse communities:

…the community garden has quite a large area, and because it’s had such ebbs and flows I think there is a bit of a perception from the council that as long as there is a public space that is devoted to gardening that isn’t constantly thriving already, that there is no need to provide more land.

Not all food-producing groups were homogenous, and space provided to support one initiative was not always appropriate for sharing by everyone, especially when groups took different approaches. Therefore, difficulty in obtaining space when existing community gardens were not ‘full’, made it hard for groups to establish their own initiatives, or to be recognised as having their own objectives, attitudes and methods.

Reviewed literature suggested insecure tenure and short-term leases prevented long term planning and investment in urban food initiatives (Armstrong, 2000; Kaufman and Bailkey, 2000). In the research locations only a few identified this as a problem. There were examples of both formal council land leases, and absence of leases altogether. Those without leases felt that despite not securing tenancy agreements their activities were not threatened, as changes in land use were not likely in the near future and they had good relationships with council. Overall, these results suggest land issues do cause some problems for urban food producers in the research locations. As land overlaps with a key planning area of land management, this is an area where planning and local councils could support urban food production in New Zealand. However, even in cases where land was available, starting up could be problematic due to lack of finance.


**Finances and Resources**

Funding issues presented significant barriers for council, community and institutional initiatives in the research locations, and similar experiences are well documented internationally (see Fairholm, 1998). Funding problems also generated barriers in other areas such as human and physical resources, and project continuity, affecting long term planning. For instance, Community-KI:2 described this issue as a New Zealand-wide problem:

…[the initiative] gets a bit of funding, it loses funding, it picks up funding, it loses funding, and so there is this amazing wave of activity, and then it drops off, because they are just struggling to create funding. So that is a challenge around New Zealand…

Community-KI:10, below, felt that a need to rely on volunteer labour makes it hard to secure funding or establish income-generating projects because volunteer time can be so intermittent. Informants directly linked lack of funding to other barriers such as lack of coordination and facilitation. Key roles were often unpaid and initiatives relied on skilled volunteers’ circumstances allowing time to contribute, for example:

Because we don’t have the substantial funding that is required, it’s difficult to plan ahead, because at any point I may not be able to volunteer. For instance, even taking on a plant order, we might get paid for the plants in a year’s time, but there is no guarantee I will be able to be here for enough time to be able to propagate the plants to secure the income in a year’s time. So we are running behind the ball all the time.

As Community-KI:10 articulates, funding physical resources was as much an issue as human resources. Timber, water tanks, and equipment as well as consents, soil testing and other permissions or preparations were considered costly. Resources, therefore, were a barrier, because funding was a barrier. Community-KI:4 described this: “a lot of people feel like a barrier is the materials and stuff … I could spend $200 on compost [alone]”. Yet Community-KI:3 felt this to be equally a mental problem, preventing projects from getting underway or achieving their aims, since funding was considered essential:
Chapter 5: Motivations, Support and Barriers

Just the concept of money is a barrier, not even the availability of it, but the fact that so often we think that we need it. That can be a barrier, so instead of thinking, how can we do this without money, often the thought is how can we get some money to do this? (Community-KI:3).

Funding was not the only issue linked both with tangible ‘physical’ elements, and ‘human resource’ centred ones. Issues such vandalism, maintenance and community support were examples of these and are discussed in the following section.

Vandalism, Maintenance and Community Support
The barriers of vandalism, maintenance and poor community support were also all influenced by the tangible, physical setting of initiatives, as well as ‘human resource’ related elements. The physical provision of maintenance, both initially and into the future, was a hurdle that had to be overcome. Thoughts that maintenance may not be carried out, or that after initial set-up initiatives would become derelict, prevented permission for some initiatives. Similarly vandalism was both an actual and a perceived barrier, and is also well covered in the international literature (see Saldivar-Tanaka and Krasny, 2004). An initiative’s physical location could make it more prone to vandalism, especially secluded areas not inhabited at night, such as school grounds or dead-end streets. Community-KI:6 observed: “I think because we are in the cul-de-sac, this is where everyone drives down to do what they shouldn’t do”.

Perceptions about potential vandalism were also found as a barrier to establishing initiatives. This deterred some schools from establishing gardens, fearing it would waste resources and attract unwanted attention after hours. This is described by Institution-KI:4:

Lots of examples of worm bins being tipped upside down, things being pulled out of gardens. …[In] certain areas, the next day, someone has been in and they have pulled everything out, just taken them to replant in their own gardens I guess. Sometimes it’s out and out vandalism, they just ride bikes over them, whatever they can.
Such activities disheartened gardeners and damaged resources were expensive to replace and repair. Community support is mentioned shortly in section 5.4 as a potential solution to vandalism, but there were significant barriers to obtaining community support. Differing community ideals of appropriate or aesthetically pleasing land use were problematic and could result in lack of community support. This was thought to hinder support or permission from a higher council level too, as Council-KI:9 conveys: “councils won’t necessarily provide… that leadership without a reasonable amount of community support for the direction it is headed”. In this way, ‘human resource’ elements were considered important, and without them urban food initiatives could run into several barriers.

5.3.2. Human Resources and People-Related Barriers

Barriers which linked to human resources and people are covered in this section. People were considered key to urban food production initiatives, and so lack of ownership, skills, time or conflicting politics generated barriers to urban food production initiatives.

Networking, Ownership, Belonging and Internal Politics

Many groups relied on networks of volunteers and participants, and networking members could be a problem for some groups. Barriers were created by lack of legitimate recognition. Therefore, to obtain leases, funding and other support some groups formed legal trusts, societies and charities, as noted by Community-KI:6: “We’re a registered charity, so you know, I think you’ve got to have some sort of ‘status’ …it’s much easier than if you’re just a group of individuals who think it’s a great idea”. Conversely, forming networks and groups could also provide barriers, if perceived ownership prevented the wider community from becoming involved in places or activities. Networking and reaching out to a wide group of people was difficult for some groups. In order to hear about activities individuals had to belong to a group of some sort, either through being directly involved (as a member), or through being connected to a network of information distribution.

Within such networks, internal politics could be problematic, with different styles and personalities generating “areas of conflict” (Institution-KI:8). These were particularly
visible around ideas of wild versus orderly gardening and an organic approach versus using artificial sprays and fertilisers. Additionally, multiple motivations and therefore objectives could become a barrier, if it meant groups were split or spread too thinly, or disagreed on key issues. This was observed as a common barrier, slowing processes and making council support harder to obtain. Council-KI:6 commented: “I work with a number of community groups …who don’t seem to have their own internal stuff sorted out”. Community-KI:7 said: “I think that a lot of the problems surrounding this are a lack of clear objectives and goals by community groups and others, or a lack of a common language”. There was concern this could also lead to competition between urban food production initiatives as well, although through communication and cooperation it was hoped this would be avoided, as Community-KI:1 notes: “…it’s very easy to say, [they are] going to do what we did. [But] we just have to work out how we work together”. A lack of clear direction also generated problems of motivation and momentum.

Momentum and Time
Getting enough people motivated to participate, long term, in urban food production was a barrier. It was frequently said to result from time constraints for the majority of individuals. This made people reluctant to take responsibility, as Community-KI:4 explains: “I think people are nervous to commit to that, [thinking] ‘I might not have enough time’”, and Community-KI:6: “I think people don’t have a lot of time at the end of the day …if people are working full time, which most people are, you know, it’s finding the time”. Others, like Community-KI:3, observed which groups were more able to participate, and linked it with time available:

[Groups] tend to be made up of parents whose kids aren’t at school yet, and who are at home looking after the kids, older people who have retired, people who are unemployed. It seems to work okay amongst the types of people who have a bit of time on their hands.

Time pressures also made it difficult for organisers to get everyone together to discuss and plan initiatives, often leading to increased pressure on a few motivated individuals. It also encouraged community labour-sharing activities rotating around individual properties, in preference to community gardens, as explained by
Community-KI:9: “I’m not interested in a community garden that I would have to travel any distance to… I’ve got my own garden that I cannot really maintain to the extent that I would like”.

Again, this suggests a link to the local context where many urban homes have garden space, a point raised by Council-KI:7: “Community gardens, they are pretty labour intensive, and require a lot of volunteer effort. In New Zealand a lot of people have their own gardens, and that is a lot of extra work”. Council-KI:5 had a similar point, suggesting urban density was not at a level yet where certain urban food production forms could flourish: “you need a certain density of cities to get a certain viable use of community gardens”. Yet while there were examples of time barriers preventing the required volunteers to come forth, other groups had many volunteers, but were lacking the skills and knowledge needed to organise and utilise them all.

*Skills, Knowledge and Coordination*

Despite many motivations for urban food production, there was awareness that people lacked knowledge and skills about gardening, and that therefore confidence was a barrier. As put by Community-KI:6, “a lot of people are terribly afraid they just can’t do it, and they are going to get it wrong …it’s a lack of education”. Compounding this barrier was the difficulty in finding people with skills and the time to share them. This had been identified by Community-KI:3:

> It often seems hard to find people who are willing to come forward and share stuff with people. Certainly the most experienced and knowledgeable food producers tend to be working full time as food producers, and they have no time to do anything else. …It’s really easy to think of workshops that would be good to run, but finding the people who will say oh yeah, I’m happy to put some time into running a workshop, even if it’s a paid opportunity for them [is hard]!

The same had been found through a survey run by Council-KI:2, who noted: “the big issues were skills and people to help run it and organise [community gardens]”. The issue of lack of organisers and “behind the scenes” people who generated “the capacity to mobilise other resources”, such as funding, activities and volunteers, was another barrier identified by Community-KI:3. It was felt that all successful
initiatives needed at least one key person organising it, and “if you didn’t have that person, it wouldn’t survive …[or would] get a little lost” (Community-KI:4). Poor coordination was a barrier since it led to duplication of effort and lack of clear objectives and goals, and projects often lost the motivation to “stick at it” despite numerous obstacles (Community-KI:6). Many of these obstacles were present in the form of structural issues.

5.3.3. Structural Barriers

Structural barriers were not necessarily physical, but were generated through current structures, systems or processes in place. These included world systems, attitudes, resistance to change, and procedural issues local to the research locations. They are described in more detail below and will be linked to the role played by bureaucratic bodies such as local councils.

Commoditisation, Value of Production and Disconnection

Disconnection from nature and food production as part of the process of commoditisation of food was identified as a barrier to urban food production. This had shifted food “away from its cultural element” (Council-KI:2) into a more industrial element, which prevented people from seeing value in food production, supporting it, or getting involved. This shift was perceived at a higher structural level, as Community-KI:1 describes:

> Our lives no longer appear to be bound by seasons, night and day, we can work 24 hours a day, you flick a switch and it’s daylight, and you can go to the supermarket any time we want, and we can buy food from anywhere in the world, any season, and so our connections are not there any more.

It was suggested that this type of change was affecting how people valued their time and food production, given the availability of a cheap commercial food supply. Community-KI:3 summed it up:

> Most people don’t really see the need beyond a bit of recreation or that things are trendy. When you can work, if I worked full time I would make enough money to buy food for me and my family and probably three to four other families in the street. If I spent my time gardening full-time, I wouldn’t be able
to get as much food. So I think a lot of people think, well there is not much point.

That food production was only for recreation and not deemed necessary, is one example of how attitudes played an important role as inhibiting urban food production.

*Attitude and Assumptions*

Attitudes towards food production and associated activities like composting were a barrier, along with people’s assumptions about associated problems. Urban food production was associated with certain types of people by some community members, and such assumptions could lead to negative attitudes towards it. Community-KI:3 describes such a situation:

One local was concerned about having fruit trees planted in the neighbourhood reserve because he was concerned that was going to bring ‘hippies’ and vans to come and live in the reserve

This could prevent community buy-in and support, much needed for successful projects. Narrow-minded outlooks from the community, and also the council (as discussed in Chapter 6), could generate barriers which had to be crossed. Assumptions of how space could and should be used, such as public parks, was raised by Council-KI:7 noting: “expectation[s] that public gardens are for flowers and beauty, [not] like a silver beet patch”. This was also Council-KI:4’s experience:

So it’s getting that attitudinal shift …getting a shift from people who have a mindset about [composting] as being disgusting and awful, to getting them to have that mindset that hey this is just creating the most fantastic soil for your garden. So the barrier might be in people’s heads for that one.

These mental barriers were described as people’s inability to change how they thought about space use, how they perceived activities as positive or negative ones, and who they assumed would be involved in activities. Resistance to change magnified the attitude-associated problems.
Vested Interests and Resistance to Change

Comfort and financial investment in the current food provision system was felt to pose a barrier to alternative food production initiatives. For many, it was felt that getting current urban food production initiatives established required a “a major shift” for much of the community (Council-KI:7). Often change is met with resistance, especially when it affects individual lifestyles. Urban food production could mean the reallocation of public space into productive use, albeit by a portion of the community. For some this could arouse feelings of injustice or resistance, especially if public assets were involved. As Community-KI:3 noted, people can think: “I’ve worked hard to buy my food and why should my rates be [going towards] somebody to have it for free?”. This type of resistance was identified as a barrier faced by urban food production initiatives, both at a practical level – such as getting permission to use public land - as well as when trying to get broader community buy-in and support. Community-KI:1 described the bigger picture:

You know, we are talking about behaviour change, which is the most, a very great need. It is the greatest need, you know how do you persuade people to make different choices in their lives? Not by telling them they must, but persuading, encouraging, incentivising.

However, making different choices needed to be supported by systems which allowed those choices to be easily made. Clumsy and inadequate processes were encountered by many urban food production initiatives.

Process Issues

Working within the council processes was a huge barrier for urban food production, to the extent that some initiatives were deliberately organised to avoid council processes altogether. Many of the groups, as discussed earlier, had minimal available time and relied entirely on volunteers. Processes which were drawn out and difficult, especially for those new to bureaucratic systems, could stop initiatives in their tracks, contributing to what Community-KI:7 considered a “boom and bust” cycle where groups “started off with a burst of activity and then have kind of petered off”. Community-KI:6 noted how hard this made it for groups: “people don’t have a lot of time at the end of the day, and if you’re spending time meeting with [council] …we
know that that is going to be a big processes”. These barriers are discussed in more
detail in Chapter 6.

Figure 10 summarises key barriers discussed in this section, and how they overlap in
the physical-people-system continuum. Each of these barriers is important, especially
if more than one is in play, as Council-KI:3 states:

The potential to be effective is cut down, down, down, down by each one of
these barriers, even though it might not seem like a big barrier, just the fact
that it’s there, cuts down all the time

If local councils are to support and enhance urban food production in New Zealand, it
is important to obtain a holistic picture of the wider issues and barriers, both
associated with council but also within general problem areas. While barriers can
cause problems, many urban food production initiatives are successfully underway.
Both councils and other food initiatives can build on these experiences, which are
discussed in the following chapter.
Figure 10: Key barriers hindering urban food production in the research locations.

5.4. Conclusion

This chapter has discussed first the support and motivations behind urban food production in the New Zealand research locations, and second the barriers. Through identifying the supportive mechanisms for urban food production, the areas of health, education, waste minimisation, community development, local resilience and identity can be seen to drive urban food production. By the same means, urban food production often has these key areas incorporated into its objectives and aims. Many of these areas also overlap with local council and planning objectives, especially waste minimisation, community development, and local resilience, although often not under those headings. By identifying the motivations behind urban food production, the factors behind its development in the New Zealand research locations can be deduced, as well as the areas where local council and planning support could easily assist. Many councils may already be working together with urban food initiatives, or
other sustainability initiatives to achieve the desired outcomes presented in section 5.2 of this chapter. However, for those not already doing so, opportunities and inroads for enhancing urban food production may be found in the discussions around current drivers and support.

Looking at barriers experienced by urban food production identifies areas which planning and local councils may be in a position to assist. Key barriers fall into three categories, namely physical barriers, human resource barriers and systems barriers. Local councils and planners can address multiple barriers from within each category. Council and planning jurisdiction traditionally covers physical land use, and, through education activities, community development and council resources, issues of coordination and skills can be approached (see Chapter 7). System problems are identified as perpetrated by local council and similar bureaucratic bodies, while sustainable policies and theories are beginning to address these issues and affect practice. However, councils represent society at large, and system problems are also failings in the community at large, as much as in the local council which embodies it. Identifying barriers also allows this study to concentrate its recommendations on areas where current problems are occurring. The following chapter looks at support and barriers directly related to local councils and planning in order to further understand facilitative and inhibiting factors experienced by urban food production in the three New Zealand research locations involved in this study.
6.1. Introduction
International examples of local government attitudes to urban food production range from indifference to strong support; there are also examples of council practices generating barriers. This chapter addresses council support and barriers experienced in the New Zealand research locations (objective 3). Support was found to be mostly of a practical nature and was driven by supportive individuals rather than specific council policy. Exceptions included sustainability, waste minimisation and biodiversity policies leading to structural and practical support in these areas. Barriers consisted of negative attitudes, problematic council structure, procedures, policies plans and standards, as well as funding issues. This resulted in initiatives that were frequently community-driven and run, rather than council-driven. Many opportunities to support urban food production undertaken by local level governments overseas had not yet been taken up in the research locations, suggesting there is scope for further local government support in New Zealand.

6.2. Existing Council Support
Local government in the New Zealand research locations was involved in supporting food production initiatives both directly and indirectly. This support took a practical hands-on approach and included individual staff effort, workshops and resource
Chapter 6: Local Government Support and Barriers

generation, specific project funding, and some research activities such as identifying appropriate plant species. Strategic support was generated under broader sustainability, waste minimisation and biodiversity policies, and appeared to guide the types of practical support available. Support was identified as predominantly generated by staff’s voluntary decisions and was not institutionalised, except in one example where a relevant facilitation position had been established. Findings by Pothukuchi (2004), that local government and planning involvement with urban food production is minimal, were similar to these findings from the New Zealand settings. Despite this, the following discussion on current council support demonstrates key ways other councils New Zealand wide could support and enhance urban food production.

6.2.1. Council Staff
Motivated and active council staff were cited as an example of support for urban food production. This applied to those directly employed in facilitator positions as well as sympathetic staff throughout council departments. When talking about urban food production and council involvement, comments about supportive staff were shared: “there are wee pockets of people in the bureaucracy, and amongst the councillors, who care very much about [local food production and sustainability issues]” (Community-KI:1).

These council staff able to take initiative, guided by current council and community objectives, were valued within a system often perceived as bureaucratic and inflexible. As Council-KI:9 explains: “there are a lot of things that can happen despite the councillors, when you get some good staff”. This was despite negative comments about the system, such as: “the process can just seem really long and really really hard” (Community-KI:6). This suggests that when in the hands of supportive council staff, the current council system, despite its perceived problems, can and still does support urban food production.

Staff and urban food producers interacted where initiative activities overlapped with council roles or jurisdictions such as over public land use, community grants and community education (see below). This was a prime opportunity for council support,
and interviewees such as Community-KI:6 knew when they had been fortunate enough to work with supportive council staff: “we’ve got a really good guy who really understands community, so he’s a great advocate for the garden”. Positive staff aided a supportive environment within council, described by Council-KI:8 as “a good council-wide buy-in to many of these values, and an interest in developing initiatives and programmes that support these values”. Staff support was considered beneficial in developing and achieving supportive councils. Such support was not without its issues, however, and was inhibited especially by time constraints. As Council-KI:10 commented: “staff are fairly much maximised at the moment”, which meant, as Council-KI:5 put it: “the work [supportive staff] can do is minimised”.

As well as supporting community food production initiatives, staff activities were evidenced as changing council policy towards supporting edible landscaping. In one example where public fruit tree planting had not yet been initiated through council policy, staff had acted, where appropriate within their remit, and begun the process themselves. Successful outcomes had consequently worked practices into the higher planning levels, as Council-KI:7 describes:

…some of our parks staff have just gone and done it, they have planted food crops in road reserves. And that has been a really positive thing which has then influenced the desire to include it in the strategic stuff.

A comment from Council-KI:1 shows how council staff actions could support an overall shift towards multi-use assets such as parks and hedges as places of food production:

Personally I think it’s something that [council staff] can really drive... A few years ago I put some feijoas in a park because they were really perfect for the application, and apart from the fact that they also provide fruit for the community they were perfect... and I just thought there is some real opportunity here to just slowly get the community interested in this sort of thing and get the councillors interested...
Mixed-use approaches, namely mixing several land uses in the one area (for example production with recreation or residential activities), are gaining popularity amongst planning theorists addressing issues of sustainability (see Grant, 2005), as further discussed in Chapter 7. The above quotes also suggest that despite staff not being directly involved in sustainability or food production roles, there was potential for them to undertake direct supportive action.

Council staff also routinely facilitated forums on a wide range of topics. In several examples staff ran meetings and forums on biodiversity and sustainability, including discussions on food initiatives under the objectives of sustainability and health. This was a means of supporting activities and encouraging wider action, as Council-KI:9 describes:

…we get everyone around the table, and everyone just gets to know everybody, and then work out joint action plans… I think often things will happen outside of the forum, because people have met as a result of that… I think there is also a bit of education happens there as well.

Such council support could help legitimise activities, and lead to consideration or acceptance of urban food production by those who would otherwise not consider it. As the same informant suggests, it helps to “build that respectability”.

No councils involved in this study had designated roles addressing issues of food security and production, although related aspects were sometimes undertaken by council staff as an extra responsibility. However, in one example the council had funded a food and edible garden facilitator, employed through an external sustainability and environmentally focused trust. The parallel council role supported all community environmental activities but Council-KI:3 had found numbers became “way too many to provide the level of support that [she] would like to provide…”, therefore the edible garden facilitator generated “greater capacity, it’s [an] additional someone available”. The edible garden facilitator was also inundated with community interest, and stated, “I’m at the point now where I need a team! I know what’s going on, I’m just one person, and I’m feeling like there is a lot of work to be
done out there” (Community-KI:4). Despite other councils not having such roles, there was high demand on those staff working in similar areas, willing to extend their support to food production activities. Developing or formalising a support role is an opportunity for further council support, as council staff actions were often voluntary and beyond the scope of their job descriptions.

Along with specific facilitators, many diverse council roles formed part of the identified staff support. As Community-KI:1 stated: “you have people on council who are passionate about these things, and we will work in with them where we can”. Council staff were both a form of human resource support, and also a gateway to physical resources, another form of council support discussed in the following section.

6.2.2. Resource Provision

Councils offered several types of resource support. Several community gardens accessed public land through a council lease and had been given access to council-provided services, such as water. Councils had also, in some cases, purchased or generated relevant educational resources including workshop materials and plant lists. Land-use as well as parks and reserve management in urban areas is undertaken for the most part by local councils in New Zealand. However, local councils do not always own all the land they manage, as other owners such as the Department of Conservation as well as private landowners can vest management responsibility in local councils. Councils may be constrained by restrictions put in place by such owners. Examples of public land used for urban food production were therefore an important resource provided, directly or indirectly, by local councils, and this was a key area of council support. Land provision ranged from informal and rent-free agreements to tenure or lease agreements strictly assessed and renewed on an annual basis and including rent and water fees.

Public land appeared to be identified for productive use only at the request of a suitable group, but land provision was seen positively by Community-KI:1 as a sign that “the council has been behind [the activity]”. Council requirements tied to land provision were also evident, as a form of compensating the public resource used and
ensuring that activities benefited the broader public. These included public access to the activity, open membership to the user group, provision of community-wide educational opportunities and, in one example, a share of the produce. Council-KI:3 justified this approach, suggesting:

> It’s a community garden, it’s supported by public funds and public resource in terms of the land… it’s not a private space for you to grow your vegetables, it is public, there needs to be public benefit from it.

While such conditions could be extensive, they were often in line with the broader community development and outreach objectives held by those types of urban food initiatives seeking to undertake production on public land.

Resource materials produced by council departments and linked with urban food production also addressed common objectives between councils and food initiatives. Specific examples included educational resources, and citizen information on non-invasive plants. Preventing cross-pollination with local varieties and identifying potentially invasive exotics was relevant for Council-KI:3 because of experiences with people “…wanting to grow plants that they use in their homeland”. Other resources such as the ‘Create Your Own Eden’ composting project (see www.createyourowneden.org.nz) were nationally produced, then purchased and distributed by councils. Such resources targeted broader issues identified at a strategic policy level, through biodiversity and waste management strategies. This exemplifies how councils can link their support for urban food production into broader objectives and policies. Waste, especially, was an internationally recognised link between urban food production and local councils and policies in the literature (Fairholm, 1998). Work by Beatley (2000) also gives urban food production a role in protecting urban biodiversity, suggesting that planning should recognise and support this opportunity. Educational workshops, as discussed in the following section, were often the outlet for these resources.
6.2.3. Education and Workshops

Along with resources, councils contributed funding and facilitation towards educational programmes and workshops promoting food production. Examples in the research locations included a home gardening mentoring programme, regular sustainability courses, and waste minimisation presentations on composting, bokashi\textsuperscript{14} and worm farming, along with their garden applications.

Sustainability courses covered a broad range of topics, including edible home gardening and community gardening. One council undertook a workshop described by Council-KI:8 as “community coaching… working with people to teach them how to grow food… those people will then have the power to pass those skills on to others in their community”. Councils also ran composting workshops, aiming to reduce landfill waste through teaching alternative disposal methods and again contributing towards waste minimisation objectives. Council-KI:8 described how achieving waste minimisation was closely linked with food production activities:

\ldots diverting organic waste from landfill is another key component of our strategy, and under that heading I have a remit to encourage and develop composting at home. Now one of the offshoots of developing composting at home is you need to encourage people how to use compost which is a natural link with the work we are doing …developing community coaching programmes [for home gardens].

Waste management planning is an identified role for New Zealand local government (Local Government Act 2002, part 12, section 286). As a result, all councils in the research locations included waste minimisation objectives in their planning documents (see: Nelson Waste Management Plan, 2005; Waitakere Solid Waste Management Plan, 2005; and Dunedin City Council Resource Recovery and Waste Minimisation Strategy, 2006). Interestingly, the international literature also linked urban food production with solutions to common urban problems, such as dealing with waste (Smit and Nasr, 1992). As illustrated above, composting activities and\textsuperscript{14} Bokashi, in Japanese means ‘fermented organic matter’ (see \url{http://www.bokashi.co.nz/}). It is an aerobic composting process using micro-organisms to aid material breakdown.
food production were hard to separate in the experiences of those in the New Zealand research locations. Therefore, they were frequently interlinked; basic gardening elements were found in council waste workshops, as well as community food production workshops obtaining council support to address waste reduction objectives. This was described from both a community and a council perspective:

…the home composting project for the City Council, that is budgeted for by the council every year to fulfil their waste minimisation goal, so now we are running free composting and gardening workshops in order to fulfil those goals (Community-KI:3).

If you are going to equip people with composting they need to have ideas for what they are going to do with their compost. So although traditionally council’s environmental education and waste education [are separate] because they are funded from different sources and have different outcomes, in practice we find there is quite a lot of synchronisation between the outcomes. (Council-KI:8).

This provides a good example of how urban food production and councils can be mutually supportive. These examples show how councils in the research locations were supporting education activities and workshops which linked with food production in New Zealand urban areas. Again the supported areas fell within overarching policies of sustainability, biodiversity, and waste minimisation. Collaborating with urban food production initiatives where objectives overlap is one way councils can offer support despite funding and policy constraints. However, as noted below, council funding was already supporting urban food production in some areas.

6.2.4. Funding
Community grants, funding for resource development, and staff and facilitator wages were provided by councils in support of food production initiatives. Urban food production initiators could also apply to council community grants and community board funding, like any other community group. Allocated council budgets also had
some flexibility, allowing contribution towards community initiatives at staff discretion. Council-KI:1 explained that “[staff] may allocate [funding] at the request of residents… towards little projects”. Bigger projects had also been directly funded by councils. In one example, a community garden on public land was addressing constructing a fence in response to persistent vandalism. Council-KI:3 explained that in order to support the group and ensure safety standards were achieved, the council had:

…paid for the framework and [the community are] putting the panels and stuff on. They are weaving those with bamboo. It’s their project, but there are certain responsibilities, like safety, that we have to the wider general public…, therefore we will help and facilitate and support. …We want to make sure that it’s physically sound.

This is another example of council working together with an urban food production initiative to ensure all objectives could be met satisfactorily, and in this particular case, it was the result of a particularly constructive staff member. Locations without supportive staff members found it more difficult to access community funding for such projects, partly because of lack of coordination, skills and knowledge, as identified in Chapter 5 when looking at barriers. Therefore, funding a city-wide food and edible garden facilitator, described earlier under ‘council staff’, demonstrates much-needed support funded by council. Council-KI:2 offers a further perspective on this support, and describes it as a council response to community demand:

We’re getting quite a lot of demand [for community gardening] from a community resilience [angle] and [in] response to the recession …so [the council] has vested money in one of its community organisations, the [relevant] Trust. So that’s a grassroots community and home garden support role… somebody whose job was to support [food production] development.
In light of national level government funding cuts for education and health programmes\textsuperscript{15}, interviewees spoke of the importance of such local government funding. Institution-KI:4 suggested “[local government funding] shows how much support our council has given us, and how they have really got on board”. Funding was, therefore, seen as a gesture of support from local councils for community and institutional food production projects, and the community benefits they can provide.

Even when direct funding support could not be offered, accessing non-council funding could be assisted through council. Council-KI:6 described how this works at his council:

…here at council is a fundraising advisor position. …say if a group was wanting to do organic gardening and they were looking for [funding] sources, one of the ways we could support them is to assist them to find that funding and even assist with putting an application together.

The existence of community grants and support with external grant applications meant that funding could be achieved despite objectives not being directly aligned with the council’s. However, direct funding, as in previous examples of council support, was found to be aligned with broader objectives and strategic directions set out in local policies and plans. Therefore, supportive plans were important in directing council support for urban food production activities.

\textit{6.2.5. Overarching Strategies and Plans}

Strategies, plans and policies are put in place to guide council management and activities. Key plans include the District Plan, required under the Resource Management Act 1991 (part 5, section 72) containing the issues, objectives, policies and rules for land use management and development. Required under the Local Government Act are Annual Plans (section 95), addressing the councils’ proposed spending and activities, and the Long Term Council Community Plan (section 93), addressing the long term vision and community outcomes in relation to council

\textsuperscript{15} In 2009 the National Government announced funding cuts to both the Enviroschools and Healthy Eating Healthy Action programmes (Morris, 2009; Healthy Eating Healthy Action website, 2009).
activities. In addition, an ‘eco-city’ strategy has been adopted in Waitakere, and both Nelson and Dunedin have active sustainability policies. These overarching strategies were seen as supportive and facilitative, generating positive spin-off effects. While plans are a key tool through which councils could support urban food production, this was only in the early stages of utilisation in the New Zealand research locations.

Waitakere City Council adopted an eco-city strategy in 1993, as a Local Agenda 21 strategy. The eco-city strategy is guided by the Greenprint Vision - a framework for linking social, economic and environmental goals (Waitakere City Council, 1999). Environmental frameworks affect how activities are viewed within council, as Council-KI:2 describes:

> You start thinking of that longer term horizon, you start having to think about decreased higher cost energy, decreased access to simple energy… it is about seeing the city as an ecology and thinking about it functioning much more as a lighter footprint on the planet.

Overarching ecological strategies are felt to encourage council openness to ideas promoting sustainability and in line with the eco-city direction. For urban food production initiatives, this included a council more readily prepared to work in with them towards achieving city-wide objectives. This was also felt by council workers, such as Council-KI:3: “what has been so good about it is there has been this purpose, statement of eco-city and sustainability, which is both a destination and a journey”. This was also recognised by staff in the other two councils. Council-KI:10 commented: “it is part of [Waitakere] Council policy isn’t it, and that is through everything. So they are amenable to these things”. This suggested that progressive policies could indeed encourage a degree of support for urban food production.

Nelson and Dunedin have also formally included sustainability within their planning documents. Nelson ratified its sustainability policy in July 2009 (Nelson City Council, 2009), and there is a sustainability section in the Dunedin City District Plan (Section 4). These were considered a helpful, and even necessary, starting point for
implementing activities such as increased urban food production, as Council-KI:8 explains:

[A sustainability policy] reflects an ongoing commitment to developing … a successful and resilient community. [Such policies are] critical …you need really a starting point if you are going to actually modify your practices and start adopting new values. And you need both top down and bottom up. I think the sustainability policy of the council is an example of top down enforcement, which then enables us to build those one to one relationships bottom up to actually start achieving some of those outcomes.

As has been demonstrated, policies and objectives were often what enabled further support from council. Yet while adopting sustainability policies generated support for food initiatives, some felt such policies were simply green-washing and had minimal effect. This correlates with findings from a now ten-year old study by Berke et al. (2000), suggesting that despite having much ‘visionary’ potential, generally sustainability concepts appear superficially applied in the planning practice realm. Sustainability incorporated into New Zealand councils’ plans and policies was suggested by Community-KI:3 as only “starting to have an effect” and “yet to filter right through”. The councils themselves considered many of their plans were relatively ‘neutral’, neither inhibiting nor supporting the development of food production activities in urban areas. Therefore, while policies and plans form the guiding documents for council activities, more is needed to generate actual support for urban food production. Such support currently came from staff activating the potential of plans and taking advantage of such policies, enabling positive effects which would otherwise not have emerged.

Planning and strategic approaches were recognised as powerful areas where support could be further developed, despite some examples of current support. Recommendations for further support follow in Chapter 7. While the above examples show how councils currently support and enable institutional or community initiatives, the following example of edible planting demonstrates direct action taken by councils themselves.
6.2.6. Fruit and Nut Tree Planting

Fruit and nut tree planting was undertaken by councils, as well as being an instance where council supported group or individuals’ planting in public spaces. As discussed in Chapter 4, several councils had a history of planting edible varieties on public land. However, some councils were considering planting fruit and nut trees as a viable development contribution. Under the Local Government Act 2002 (part 8, subpart 5, section 202), development contributions or financial contributions can be utilised to offset the costs associated with city growth, and include provision of reserves and community infrastructure. Therefore, edible public planting could be undertaken for the community by private developers to offset their activities.

Public projects were also given support to plant fruit trees, if requested, as found by the ‘trees for babies’ programme undertaking plantings in public reserves to commemorate births (Waitakere City Council, 2009). This support was in the form of funding, tree maintenance and case-by-case identification of suitable public reserve land - subject to constraints such as available space and current use of the land. While some council informants felt that fruit trees could be a relatively low-maintenance form of food production, and therefore a good thing to provide, develop and encourage, others had reservations regarding fruit trees in public spaces. This is discussed in the second half of this chapter under council barriers.

The preceding sections show how councils have taken up opportunities to support urban food production initiatives. This is summarised below in Table 7. These supportive elements would be available to most councils throughout New Zealand, although as covered in Chapter 7 there are many other opportunities for council support. Existing council barriers were also identified as part of this research, the results of which are discussed in the following section.
Table 7: Current Council Support for Urban Food Production Initiatives.

<table>
<thead>
<tr>
<th>Type of Support</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Council Staff</strong></td>
<td>- Positive council buy-in</td>
</tr>
<tr>
<td></td>
<td>- Actions by individual staff</td>
</tr>
<tr>
<td></td>
<td>- Provision of edible garden facilitator roles</td>
</tr>
<tr>
<td><strong>Education and Workshops</strong></td>
<td>- Educational programmes such as home-gardening mentoring,</td>
</tr>
<tr>
<td></td>
<td>- Sustainability courses</td>
</tr>
<tr>
<td></td>
<td>- Waste minimisation programmes</td>
</tr>
<tr>
<td><strong>Resource Provision</strong></td>
<td>- Development, funding and distribution of resources</td>
</tr>
<tr>
<td></td>
<td>- Provision of land and ‘in-kind’ resources</td>
</tr>
<tr>
<td></td>
<td>- Human resource provision</td>
</tr>
<tr>
<td><strong>Funding</strong></td>
<td>- Funding of facilitators</td>
</tr>
<tr>
<td></td>
<td>- Grants for community groups</td>
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<td></td>
<td>- Funding specific elements of food production initiatives</td>
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<tr>
<td><strong>Overarching Policies and Plans</strong></td>
<td>- Overarching policies such as an eco-city direction, and</td>
</tr>
<tr>
<td></td>
<td>sustainability policies</td>
</tr>
<tr>
<td></td>
<td>- Neutral plans not preventing food production</td>
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<tr>
<td></td>
<td>- Active zoning to protect high class soils in peri-urban areas</td>
</tr>
<tr>
<td><strong>Fruit &amp; Nut Trees</strong></td>
<td>- Fruit and nut tree planting in public spaces</td>
</tr>
</tbody>
</table>

6.3. Existing Council Barriers

To look specifically at the current interaction between council and urban food production, barriers linked with council and council practices have been presented separately from other identified barriers (for which, see Chapter 5). Despite the many ways council staff supported urban food production, barriers were also identified around some staff’s attitude and acceptance of initiatives. Problems were also generated by the council system (structure, procedures, policies and plans), and funding related issues. These are discussed in relation to the barriers and support identified in the literature and their effect on urban food production. This section, in identifying barriers also identifies areas within the council domain that need further support or amendment in order to support and enhance urban food production.
6.3.1. **Attitude**

Attitudes within council towards urban food production initiatives were sometimes negative, with one interviewee describing the situation as “the biggest constraint [being] entirely mental” (Council-KI:3). Specific problems were dated or narrow thinking, lack of flexibility, and a failure to register, prioritise or value initiatives and issues. Informants felt such problems would need to be addressed before councils could support urban food production.

Many informants identified a lack of understanding by council decision-makers regarding the importance of food security issues and urban food production benefits, both now and in the future. As Council-KI:2 notes:

> We face tremendous challenges; I took a …statement to my directors and …I suggested [local food production:] that people know where their food comes from, and he said: ‘well I know where my food comes from, the supermarket’. We tried to tease out of him why actually knowing more about [food production] was becoming more important and he just really didn’t see it, and so that really highlighted to me we had a long way to go… the barrier is understanding, seeing it through a different lens.

Without this common understanding, it was difficult for food production initiatives to gain council support. This constrained council initiatives as much as community initiatives. Lack of awareness amongst those in influential positions was linked to a failure to instigate new developments or approaches. Such problems were linked to outdated perceptions and a reluctance to originate change, as Council-KI:1 describes:

> …people are pretty old school you know, they have got preconceived ideas… it’s really hard to get them to bend, they want to put the same things in, they feel comfortable with that. I think that’s a huge constraint, from within council.
Council-KI:5 attributed part of this to “[a] perception that it is a grassroots practice, the greenies and hippies and all that” something she went on to say could be changed through “branding so it’s not an extreme left activity”. Attitudinal barriers were therefore considered as partly generated by urban food production’s image. Council-KI:9 also observed how presentation of initiatives could affect how comfortable council was in addressing them:

…a lot of it is to do with who the messengers are. I sit on local government and I think if you get some people who are potentially threatening to councillors then you are less likely to have success, but if you’re careful in picking people who the councillors are already familiar with and comfortable with, as the spokespeople, then you can achieve a lot more.

This perhaps suggests a way those involved in food initiatives can themselves encourage council support. It also highlights that addressing barriers of perception and attitude are as important as the projects presented.

While council staff could generate a shift towards planning which supported urban food production, a negative attitude equally affected the type of policies adopted by councils. Council-KI:6 noted that policies were dependent on “what kind of council you’ve got in place, what sort of approach or attitude”. Expectations observed by Council-KI:7 explained how barriers to urban food production could be generated: “[there is an] expectation that public gardens are for flowers and beauty, like a silver beet patch might not quite be - there is an aesthetic thing”.

Yet even for council with generally supportive policies, this did not always mean urban food production initiatives would be supported. This was perhaps partly because of individual approaches. As Council-KI:10 explains: even if ‘there is nothing that actually prevents [urban food production activities in the plan] … it comes back to the reserves department, are they prepared to allow those activities”. It was also felt to be partly because of how food production and environmental activities were valued relative to other activities, such as development. Council-KI:5 felt food-related issues were not always “registered, [even when] we are talking sustainability,
[it] tends to revolve around land use, transportation patterns, energy use, more than how we are feeding ourselves”. Regarding the retention of an urban greenbelt, Council-KI:7 commented “…it’s hard to keep, because it’s pretty valuable land”, and in a different location, Community-KI:3 noted: “often [council] seems to be indifferent …I don’t think that people see [food production] as a priority basically”.

Community-KI:3 went on to offer an explanation for such a lack of prioritisation: that “gardening in public places [is not] seen as being particularly important …because there is no shortage of [private] space. The council thinks if they are interested they should just be doing it at home”. Community-KI:4, however, considered it resulted from council being overworked and faced with multiple priorities: “it takes a lot to run a city, it’s not something I want to do, and there’s a lot of problems and issues out there”.

Unsupportive council attitudes were seen as a huge barrier to urban food production. However, this was being addressed at every opportunity through community and staff advocates attempting to relate urban food production to current areas of priority. As Council-KI:2 explains, she “compartmentalise[s the concepts so her superiors] can bite off chunks …then see the economic development component relative to the land use component…”. Overall, attitudes were considered to be slowly changing to more supportive ones, as it was being demonstrated how urban food production could bring broad benefits and could contribute towards community and council objectives.

6.3.2. Structure
Interviewees identified that councils’ structural characteristics acted as a barrier to urban food production. Little interdepartmental integration and significant compartmentalisation, overstretched staff, a lack of relevant roles, councils adopting a business model, reactive not proactive approaches, and high staff turnover, were key barriers.

As discussed earlier, work around food production issues was voluntary, unrecognised and generally additional to staff’s already fulltime workloads. Therefore, nobody in council was responsible or accountable for urban food production liaison. As stated
by Institution-KI:8 there is “no real department or structure that talks about food…
that’s not in [staff] briefs at all”. This contrasts with international examples of food
policy teams, councils or working groups. The American Planning Association
(2007) suggests over 35 food policy councils affiliated with local governments
emerged in North American between 1997 and 2007. It does, however, support
arguments by Pothukuchi (2004) that currently planning does not adequately address
food issues. The absence in councils of specific roles or responsibilities for food
security and its provision was seen as a barrier, which encouraged the adoption of
minimal effort options. As Council-KI:5 puts it:

You’ve got a community garden on one side of the field and mown grass on
the other, [the] parks and recreation officer most probably wants [to organise]
mown grass. It’s simpler.

Additionally, many councils adopted a business model approach in which time is
money and risks are minimised. This was felt to be negative. As Council-KI:5
explained: “…typically what you have seen is that teams have shrunk, the work they
can do is minimised and there is more accountability…”. She further explained that
this was problematic when combined with a negative attitude: “…it is tricky for a
council to make the decisions with a lack of understanding of the real issues, or
potential in this instance”. Therefore, with risks and time minimised, it was hard to
change the status quo, especially when councils were working within strictly defined
and ‘siloed’ roles.

Councils’ approach to new initiatives in general was also structurally problematic.
Approaches were felt to be generalised and not contextualised: “It’s kind of follow the
rule, rule, rule, without accessing if we should throw the rule book out …it’s not
proactive, it’s reactive” (Council-KI:5). However, a structural approach could also be
beneficial for urban food production, such as with the inclusion of fruit tree policies in
Reserves Management Plans. Council Council-KI:6 explained how this addressed
issues of staff turnover and directional changes: “you know councillors may change
every 3 years and what this lays out is our approach for the next 10 years”. Again,
this relates back to attitude, with structural systems being shown to work both for and against urban food production.

Staff turnover and a lack of consistency in staff dealing with the one issue was another identified structural problem. Community-KI:6 struggled with this lack of consistency and confusion around who in council deals with food production initiatives: “you just get on the phone and start finding out who the person in council is to speak to, but it’s not clear [who]”. Council staff felt this barrier partially resulted from lack of established procedure and clarity around which staff should deal with food production initiatives.

### 6.3.3. Procedure

Procedural barriers identified by this research were uncertain accountability leading to inactivity, councils waiting to react rather than demonstrating leadership, experiences and lessons not being institutionalised and retained, and council processes perceived by communities to be slow, complicated, costly and untailored to their needs.

Despite each area having established community gardens, procedures for dealing with food production activities were not well established. Initiatives on public land had to modify existing lease templates or work with inappropriate ones, as in Community-KI:6’s experience: “[our lease] comes under farming and grazing, which allows gardening”. The barriers this presented were often acknowledged within council, as by Council-KI:6:

> Currently we don’t have a good process in place for how we deal with requests from the community to use public spaces for vegetable gardens… I think even in the next couple of years we will be in a much better position to respond to community desire and say well right, this is what we expect to see from you, if you want us to support it.

Dealing with multiple staff in ‘siloed’ council departments, each time having to re-invent procedures to address the ‘new’ situation, created a feeling that institutional
knowledge regarding food production initiatives and process undertaken in the past was not being retained. Again, Community-KI:6 details his experiences:

I was talking to someone here who was obviously involved in community gardens years and years ago, and was involved in gardens in the city and things, and there is a heap of knowledge, people have done this over and over again and it’s, it sort of gets lost, and then people have to start all over again.

This was frustrating for community groups, and often created a sense of council processes being unnecessarily long, slow, complicated and inappropriate. In many ways, even if overarching policies held supportive objectives, the processes which lead to their enactment were ineffective: “with the LTCCP [Long Term Community Council Plan], the community consultation and the setting of long term objectives for the council …actually mostly doesn’t get fed back down. There is an enormous gap between the strategic level of what is happening [and on the ground]” (Council-KI:3).

6.3.4. Plans, Policies and Standards

Consent processes were expensive for community groups, restrictive standards included occupational health and safety standards, and there was a general lack of provision in District Plans for urban food production activities. Discussion also identified problems with objectives being lost in plan rules, and a general inability to respond to unique situations.

Consents were needed from council planning permission for land use, shed and toilet construction, and water tanks on site, and could be problematic. Schools especially felt water tanks were “a big issue… getting consents for anything here, mean a big headache for schools, and quite expensive” (Institution-KI:4). Not being able to establish much-needed facilities, such as a secure tool shed for equipment and any form of toilets, became a barrier to some activities functioning well. Barriers were identified as policies restricting such developments and difficult consent processes.
One of the ‘primary barriers’ preventing councils further enabling urban food production activities, identified by Council-KI:2, was occupational health and safety, together with liability:

What if they poisoned themselves? What if somebody cuts their toe off while digging in the garden with a spade!? …Every time we have a little incident where someone goes ‘the council didn’t check that…’ we get more dummying down of stuff, we get more fencing, more concreting. …That is the issue, that sense of being responsible. When you’re a contract manager, you don’t want your arse whipped, so you go for the lowest common denominator.

This was felt to the extent that some informants considered the council was best removed from the process altogether, to avoid the problems, described by Council-KI:5 as the “legalistic challenges of trip hazards… the liability, insurance, disclaimers…”. Other policies around how public areas must be used and set up, such as visibility from the front, generated problems for food production initiatives, and highlighted how well-intended policy was felt to be restrictive and prohibitive for some community groups. However, the earlier example of safety policies leading to council funding a fencing structure to ensure standards were met, demonstrates that, when handled in a creative way, potentially contentious situations can be worked to the benefit of all.

Plans were felt to be neutral in many councils, as described by Council-KI:10: “for the urban area you could argue [urban food production is] not particularly inhibited …I mean I guess it’s not specifically provided for [either]”. In some cases, however, Council-KI:3 explained how he sees some rules and policies as prohibitive towards the very objectives they were supposed to enforce:

…you know what your purpose is, if your process is making it awkward to do that, then you look at your process. Rather than saying, ‘no’ to the purpose, because the process is awkward. So, yeah, it’s purely one of people coming into the job and setting out something that’s easy for them to run, and then
denying many of the potentially good purposes, or the uses, because it simply
doesn’t fit with the way they administer it.

Again this is linked to staff attitude, although she did acknowledge that it is not
always simply a negative attitude, but more a lack of awareness: “…because of where
they started…they don’t see it working the other way”. Inflexibility within plans was
seen as a barrier in this way. Plans also allocated little if any budget money which
could be directed towards urban food production.

6.3.5. Funding
Lack of allocated budget and grant consistency reduced the ability of food initiatives
to receive funding. Additionally, councils were considered to be under funded, with
many projects competing for minimal funds. Many of these issues link with
previously-mentioned barriers such as competition with development, attitude, and
lack of prioritisation of food issues within council.

Requirements around which types of groups could receive funding, access to public
space, and council support could be barriers. In some cases this had necessitated the
creation of a legal entity, a trust or an incorporated body, justified by the need to
know that a group was serious, stable and demonstrating organisation. Some
community groups found this a barrier, especially if they were small, voluntary and
lacking legal skills and prior funding. Grants and funding availability were often
sporadic: “it might be available for one year, and the next year it might not” (Council-
KI:6). This had a negative effect on projects and job security.

Lack of funding was often linked with a lack of allocation. Perhaps due to how urban
food production is valued, other projects were prioritised: “you end up competing
with all the other options of spending ratepayers’ money. Which is a straight political
process really” (Council-KI:6). One interviewee commented “I don’t think anyone
would deny [urban food production projects are] great to have, but it comes down to:
okay, we can have this or we could have three of those” (Council-KI:5). Lack of
council wealth overall was a barrier; however, Community-KI:3 pointed out: “when I
talk to council I try to point out that they don’t need to spend any more money, they
just need to spend what they are already in a more intelligent way”. The barriers discussed above are summarised in Table 8, and demonstrate how council-linked areas generated problems for some urban food production initiatives.

Table 8: Council Related Urban Food Production Barriers.

<table>
<thead>
<tr>
<th>Type of Barrier</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>Lack of understanding, old school thinking, narrow-mindedness, resisting change, failure to prioritise or value food issues, and feeling threatened</td>
</tr>
<tr>
<td>Structure</td>
<td>Council ‘silos’ and lack of integration, lack of relevant roles and responsibility, staff overstretched, business model, reactive not proactive and minimal effort approach, staff turnover</td>
</tr>
<tr>
<td>Procedure</td>
<td>Accountability, responding to ideas not initiating them, lack of institutional knowledge and tailored procedure, slow complicated processes</td>
</tr>
<tr>
<td>Policies, Plans and Standards</td>
<td>Consent process, occupational health and safety, objectives lost in the rules, lack of provision in plans, restrictive standards</td>
</tr>
<tr>
<td>Funding</td>
<td>Competition for funding, lack of allocated budget, lack of consistency, quality of spending and not all groups accepted as funding receivers</td>
</tr>
</tbody>
</table>

6.4. Conclusion

Urban food production activities had experienced both support and barriers associated with local councils in each of the research locations. While the likes of plans and policies could offer support, what appeared more important was support generated by staff, who ultimately enabled activities or implemented or plans in a supportive way (or not). However, staff could be constrained by the parameters set by planning documents. The many examples of support show that councils can and do play a role in supporting urban food production, especially in areas of grants and funding, land-use and management. In addition, urban food production currently supports council
objectives, such as waste minimisation and sustainability. There is scope to expand this support, as well as address the barriers to enhance the support available for urban food production from local governments. This is discussed in the following chapter, which synthesises the experiences of urban food production currently taking place, taking note of the barriers faced, as well as the support that is given. This approach generates recommendations that can be adopted at a local government level throughout New Zealand.
Planning Opportunities and Recommendations

Planners solve today's problems and prepare for tomorrow's challenges.
(The New Zealand Planning Institute, 2009: n.p.)

7.1. Introduction
This chapter addresses the fourth and final research objective by presenting key recommendations on how planning in New Zealand can support and enhance urban food production. The recommendations arise from an analysis of the literature, research data, and specific recommendations identified by interviewees. Each recommendation is presented with a discussion, identifying how it will address current barriers or gaps and how it builds on current experiences of support or good practice. Of the numerous potential recommendations devised from this research, those considered to have the most potential, as well as having wide application within the New Zealand planning and local council frameworks, were selected. Outside of local councils, there are other planning mechanisms which could support and enhance urban food production, such as national standards or policies. However, local government is targeted in this thesis as the framework within which planning directly affecting urban areas in New Zealand could be undertaken. As mentioned in Chapter 1, local government is also a key framework which undertakes both planning and public land management, guided by three major enactments, namely the Resource
Chapter 7: Planning Opportunities and Recommendations


These recommendations are presented in a three-tiered approach, depicted in Figure 11. Section 7.2 addresses issues at the macro-level. These recommendations speak to perspective, approach and outlook shifts which are required to allow flexibility and support for many sustainable alternatives, including urban food production. The first recommendation is not a prescriptive recommendation. It responds to experiences of urban food producers’ interaction with local councils when presenting ideas and visions, as well as the desire to see councils taking initiative in this area. There are many potential paths to achieving macro-level change, but however they occur these subtle changes do need to be undertaken to enable effective support at a more tangible planning and strategic level. As Wheeler (2000:133) sees the issue, it is about “how a context can be created in which metropolitan sustainability planning can occur, rather than on specific techniques or policy directions”.

Wheeler’s comment is also reflected in the planning and strategic level recommendations in section 7.3, some of which are less prescriptive than others. These recommendations identify a range of opportunities that could be taken up by local councils in New Zealand to support urban food production. Several of the planning and strategic level recommendations could equally apply to projects other than urban food production, but are necessary to enable action at the project or micro-level. The micro-level recommendations, presented in section 7.4, are prescriptive and consist of specific projects. They address identified problems, needs or opportunities directly, and if adopted by local councils throughout New Zealand they will directly support and enhance urban food production initiatives. It is important, however, that such projects are nested within the recommended higher level changes, if an actual shift towards overall support is to be achieved.
7.2. Change at the ‘Big Picture’ Level

One need identified by this research is for New Zealand’s local councils to address current awareness gaps regarding urban food production as an option. This is tied to the overall ‘attitude’ of local council and planning approaches, and is perhaps the hardest recommendation to address, being so complex. In many instances sustainability has been integrated into local government policy, but so far it has been frustratingly ineffective in practice (Berke et al., 2000). As Garvin (2008:60) comments: “…all these efforts have resulted in an overly narrow, even miserly, view of greening of our environment… largely reactive and conservative”. From the perspective of New Zealand urban food producers and as evidenced in this study, a deeper awareness and understanding is needed in order to develop new ways of seeing and thinking about urban food production, as with sustainability in general. Current issues of narrow thinking and a lack of flexibility in approach were emphasised, along with a need for local councils to recognise the power and vision they have the potential to generate. There was a desire to see local councils proactively embodying their theoretical role of generating better places for communities, not simply maintaining the status quo or reacting to problems.
The outcomes and objectives being addressed by urban food production in the research locations were in line with generally held council objectives, including building happier, healthier and stronger communities in a sustainable way (New Zealand Government Department of Internal Affairs, 2009). By means of the Local Government Act 2002 (LGA) and Long Term Community Council Plans (addressed under section 93 of the LGA), council support is encouraged for the above-mentioned objectives and outcomes. Yet, despite the potential for support, numerous barriers were experienced to gaining council support for urban food production activities. While some physical barriers are difficult to overcome given council constraints, Council-KI:3 describes how even simple council acceptance can be a huge form of support:

If [a group] wants to do something and it fits with the [city objectives], then the answer is automatically yes. That doesn’t mean that there is a lot of resource or time support available for it, but what I have found is that if communities are given the green light, given the mandate, given the permission to use the resources that they can make available, that they can find, that’s actually 70% of the battle for them…

Several changes at the ‘big picture’ level were suggested to address this problem, from the need to adopt “concept plans” and sustainability “thinking” (Council-KI:5), to the adoption of a “new model” of approach (Council-KI:12). Facilitating discussion, celebrating successful experiences, and ‘mainstreaming’ urban food production were all given as tangible means of stimulating the desired paradigm shift. Viewing things as opportunities was also suggested, for example thinking of what urban food production can do for a city. As Council-KI:5 commented, it is good for cities to have “lots of cards in the hand”. Council-KI:3 referred to a need for including “dreamers”, not just planners, in planning roles; those with the capacity for “out of the box” thinking and keeping multiple paths open to achieve the ultimate objective of community wellbeing both now and in the future. The issue goes deeper than just generating a policy: it is about the approach and attitude such policies represent. The first recommendation is therefore, that councils address the current lack of understanding and diffident approach surrounding sustainability opportunities such as urban food production.
Chapter 7: Planning Opportunities and Recommendations

7.3. Planning and Strategic Support
There are specific activities and tools, identified at a planning and strategic level, which this research suggests councils could apply to support urban food production in New Zealand. These propose the development and adaptation of appropriate overarching policies generating enabling environments for sustainability initiatives, and undertaking a style of planning that addresses opportunities present now as well as keeping options open for the future. The recommendations also endorse offering support in kind for urban food production projects and adopting an advocacy role on behalf of their communities. Change at a planning and strategic level is suggested by Howe (2001) as important for enabling change at a practical and project level.

7.3.1. Overarching Policies and Plans.
Adopting sustainability policies into district planning documents, or, as in Waitakere, utilising a green network approach, enabled support to be generated for urban food production when combined with supportive council staff. Council-KI:8 saw his council’s sustainability policy as “a starting point”, necessary if councils “are going to actually modify [council] practices and start adopting new values”. Overarching policies and plans can be a statement of intent, visionary documents or frameworks for action. Wheeler (2000:137) suggests that visionary plans are a “traditional strategy …dating back to the City Beautiful movement” utilised to direct urban development. This was also considered by Council-KI:3, in that, backed by policy or plans with a clear sustainability purpose, “…staff members can say, here’s an idea and it fits with that purpose, it fits with that direction we are trying to head”. She saw it as a shift from attempting to “administer” an area, to trying to encourage sustainable development. Council-KI:2 saw overarching policies and strategies as a means to “integrate [food issues] into our planning processes and think about land use, how we govern the city, how we make space available”. This indicated a much more holistic approach, guided by a big picture policy, plan or strategy.

While problems with overarching sustainability approaches were identified by interviewees, these addressed their use as ‘green-wash’, and not the policies themselves. The adoption of overarching policies and plans which support urban food production and the associated objectives has the potential to enable more direct
support, such as funding, in-kind support and resources. Also important would be developing indicators to monitor implementation, progress and plan effectiveness. The second recommendation is, therefore, that councils incorporate into their plans and overarching policies support for local sustainability initiatives such as urban food production.

7.3.2. **Multi-Use: Land, Funding and Objectives.**

Multi-use and mixed use land planning approaches (see Chapter 6) were recommended by informants and also identified in the literature. A mixed-use approach was seen as an opportunity which could also be applied to funding and objectives. Intensification of urban areas is increasingly becoming a reality as urban populations increase, in New Zealand and elsewhere (Dupuis and Dixion, 2002; Williams, 1999). Several of the research locations were considering future urban-intensification and interviewees anticipated this would generate increased pressure on open space. To address future space demands, as well as current problems in accessing land for urban food production, mixed-use planning of open space was identified as one solution.

Suggestions included intentionally planning for mixed-use early in urban design phases, while others encouraged increased utilisation of current single-use spaces such as recreation parks and walkways. Public urban spaces need to provide a range of services to diverse communities, but multiple use approaches allow uses to be maximised despite limited space. For Community-KI:4, however, mixed use was as much about visibility and community engagement as available space: “the street is quite there in your face… a real community spot”. She felt mixed-use approaches could achieve a number of objectives. Looking at how edible plants could be utilised to serve the same purpose as non-edible landscaping provided one example of how mixed use might be implemented. Institution-KI:8 gave the instance of hedges, suggesting “hazelnuts make a great hedge!” As Roberts (2001:30) argues, current beliefs of “beautiful is beautiful and useful is useful, and never the twain shall meet” prevent useful productive planting in manicured public spaces. Acknowledging that urban land is in high demand, Council-KI:6 saw mixed use as a means of “increasing the uses of the spaces that we have”. The third recommendation, therefore, suggests
councils take opportunities to adopt mixed-use approaches, and include urban food production activities alongside more ‘traditional’ urban space use.

Mixed use of land and resources was one example of how planning could support and enhance food production in urban areas, even if land is in short supply. ‘Mixed use’ of objectives was another means identified by this research. One method currently working, especially with regard to waste minimisation, biodiversity strategies and sustainability objectives was to envisage urban food production as an opportunity to achieve current objectives, then to support it under such objectives. Interviewees saw these opportunities were available, but not always taken up. Council-KI:6 felt “a lot of it is about how council is choosing to meet its community outcomes …there [are] a range of projects and programmes and approaches that you can come up with”.

Urban food production, as demonstrated by looking at the motivations and objectives of current initiatives (see Chapter 5), are frequently in line with council-community objectives. As summarised by Community-KI:1, ultimately the objectives are the same, just phrased differently. She identified common council objectives for cities as the following: “…more gorgeous, more fun, safer, healthier, friendlier, economically sound, [and], you know, robust”.

Urban food production groups clearly aligning their own objectives in the language of council objectives were felt by Council-KI:6 to more easily obtain council support: “what makes things really easy is if a community group comes to you and says we can help you achieve that community outcome …we can do that by doing this. It’s like hallelujah!”.

Similarly, urban food production was regarded in some instances to actually reduce council costs. Therefore, councils could potentially fund initiatives to reduce costs in other areas, such as health, waste, or “carbon footprint[s]” (Community-KI:7). These suggestions looked at ways council input, especially funding but also other resources and support in kind, could be ‘multi-use’, or perhaps more clearly ‘multi-purpose’. As Community-KI:7 went on to say “…if what [urban food production is] doing can help [council], how can [council] help [urban food production]? We can all help each other so that the whole community benefits”. Therefore, if council can identify common objectives (or community groups can identify them for council), support can be directed towards achieving common
objectives via support for urban food production initiatives. The fourth recommendation, therefore, suggests councils identify potential commonalities between urban food production and existing council-community objectives and seek to achieve such objectives through support for urban food production initiatives where appropriate.

Many of the opportunities discussed above were presented as areas for ‘future planning’. This was combined with an impression that urban food issues and current barriers, such as access to land, were likely to increase in the future. Future planning ideas included connecting urban food production with broader urban infrastructure, such as “low impact storm water design[s], so everything is watered” (Council-KI:10), as well as being careful to undertake planning in a way that keeps open and “protects [future] options” (Community-KI:1). In summary, the potential for the principle of mixed use or multi-use is wider than simply land; it can address combining objectives, funding, use and outcomes. Perhaps the clearest example of this is how problems of excessive urban green waste can solve problems of what Community-KI:7 called “compost deficits” within the same city. Therefore, recommendation five suggests that, when designing city services, councils should proactively look at how these can be integrated with the needs of urban food production (such as compost and water).

7.3.3. Urban Food Production Facilitator Positions
Throughout the New Zealand research locations, initiatives that succeeded identified leadership, facilitation and coordination as key elements. At the same time, several barriers clustered around lack of leadership and the associated skills and knowledge. Filling this gap is one way in which local councils can assist urban food production, as well as benefiting themselves through co-management of urban green space, as identified by Colding et al. (2006).

As shown in Chapter 6, examples of council-funded facilitator roles are currently working well. Facilitator positions encouraged networking and knowledge-sharing amongst groups, and allowed the generation of an accessible body of expertise and institutionalised knowledge. Facilitation included specialist skills such as visioning,
seeking funding and resources, and liaising between stakeholders such as local councils, citizens and food production groups. Expertise on council processes and policies directly related to urban food production activities was built up through facilitator roles, helping groups lacking this knowledge. Having one point of contact simplified processes, and addressed barriers generated by confusing council procedure. Colding et al. (2006) also suggest that improved urban green space management can be gained through establishing two-way partnerships between user-groups and municipalities, as could occur through a formalised facilitator. Fairholm (1998) reinforces this, identifying benefits stemming from a facilitative council role, as well as multiple problems associated with lack of council coordination on the issue of urban food production.

It was found that currently council staff were undertaking various facilitation roles in a voluntary capacity. Interviewees suggested this could be because local councils’ jurisdiction overlapped with resources utilised by urban food production activities, because councils were seen to have a leadership responsibility, and also a role in undertaking community partnership building. Council-KI:6 acknowledged that building community partnerships takes time, funding and money:

> building those community partnerships needs a particular amount of resourcing and time to do it properly, otherwise… it leaves [people] feeling quite let down and disappointed.

To avoid a lack of time and responsibility leading to disappointment, having a formal and paid leadership or facilitator position was suggested. Both council and non-council facilitation roles were seen to result in a regular commitment of time, beyond the scope of volunteer positions. However, there were different opinions on whether leadership should come from inside or outside the community, or from local council. Volunteer leadership often came from within groups and displayed much passion and dedication towards projects. Groups with leadership from a facilitator external to their community, however, found it could be beneficial to have neutral mediation, and final decisions were seen as unbiased. Some interviewees expressed trepidation about councils adopting direct facilitation or leadership roles. This concern stemmed from
the potential lack of independence in such a role, and it was felt that financial or information support alone could contribute to less conflicting facilitation.

Interviewees suggested that local councils were in a position to undertake or fund facilitation, coordination, or leadership roles. Given the experiences of current urban food production activities, this thesis found that local councils providing an urban food production facilitation position, or funding one, would help to support and enhance urban food production activities. Recommendation six is, therefore, for the establishment of a council-funded or hosted urban food production facilitator role.

7.3.4. Communicating Constraints, Accountabilities, and Processes

Most interviewees looked at urban food production in a positive light, yet constraints were identified at both council and community levels. Constraints and council processes were not necessarily problematic, but without being clearly identified and communicated, misunderstandings and frustration could result. Councils, therefore, need to undertake clear identification and communication regarding constraints, accountabilities and processes, to enable positive support and interaction with urban food production groups.

Councils work within strict requirements. They are accountable to a broad public sector, as Council-KI:8 explains: “every action we take, someone is going to look at and ask why we have done it”. Guidelines and standards must also be adhered to, and may or may not be obvious to all urban food producers who councils are liaising with. Council staff commented on experiences of urban food production proposals, generated “without a knowledge of some of the requirements, say of parks in terms of sightlines for traffic management” (Council-KI:8). Unless clear explanation of such constraints was undertaken, urban food producers could experience frustration, mistrust, and anger towards councils who, in the producers’ view, were unfairly and unreasonably stalling projects.

Practices which were working well saw good communication and understanding between council and non-council urban food production groups. Constraints were identified, from both sides, and rather than being seen as barriers they were simply
presented as areas where additional time and effort could be required. Council-KI:3 describes how she runs this process:

I run a model whereby… I explain to them what my accountabilities are, what the limits of my accountabilities are and I essentially say to them, if you can make your decisions within those accountabilities, I can say ‘yes’ to everything you want. …And that doesn’t mean that if they want to [do more] that they can’t, it just means we have to go through an additional process

This model had come from several years of experience working with urban food production and other community environmental activities. It highlights the benefits of having identified facilitators who can amass knowledge and experience, and gain good understanding of the relevant processes. Being aware of constraints and accountabilities was also expressed by several informants as a need to communicate expectations. Council KI:6 sees it as councils being confident in adopting their position “to respond to community desire and say well right, this what we expect to see from you, if you want us to support [your project]”, while Community KI-3 saw it as clarity: “[it needs to be] nice and clear to everybody. If [projects] fill certain criteria, then there is no reason why [communities] couldn’t do it”. Part of this clarity included generating definitions relevant to urban food production activities, as suggested by Council-KI:10. Broader council policies have already been discussed; however, one mechanism exemplified by Auckland City Council (2002), and Christchurch City Council (2003), is the development of a Community Gardens Policy. These policies clearly define and state the constraints as well as potential for council support.

The results from this thesis suggest improvements could be gained from an awareness of the constraints within council processes, practices and regulations that relate to urban food production, along with their being intentionally conveyed to urban food production groups interacting with councils. Additionally, as part of becoming aware of these constraints, the generation of clear processes, definitions and systems for approaching urban food production activities within their municipality are suggested. Recommendation seven, therefore, is that through an urban food production policy, or
other methods, local councils: (a) identify and communicate constraints and processes affecting urban food production, and (b) define urban food production activities, as well as minimum criteria for such activities.

The recommendations discussed so far have looked at ‘big picture’ change needed throughout council, as well as planning and strategic activities which this research suggests would encourage planning and local government to support urban food production in New Zealand. The final set of recommendations look at specific tasks which have been identified.

7.4. **Micro-Level Projects**

The following projects address specific issues or barriers identified through this research, or specific recommendations identified by several urban food production initiatives. These micro-level recommendations include the generation of a public land inventory, developing lease templates for urban food production activities, undertaking edible landscaping, and support for the development of community gardens in schools. While these recommendations are specific, and do not necessarily require the recommendations suggested earlier in this chapter, there are significant overlaps. For example, building lease templates would be easier once local definitions of urban food production had been considered, and supporting community gardening in school grounds could be undertaken through the previously-mentioned facilitator position.

7.4.1. **Building a ‘Public Land Inventory’**

Mendes et al. (2008) describe public land inventories used in two North American case studies as a means to link urban agriculture and planning. The results of this research suggest that utilising mapping tools such as geographic information systems (GIS), and the generation of a public land inventory is one planning project with potential to support and enhance urban food production in New Zealand.

A key barrier identified earlier in this thesis was access to appropriate land for urban food production. This is a barrier affecting urban food production internationally, and
can stem from poor municipality management of available land (Kaufman and Bailkey, 2000). Interviewees from the research locations recommended research and mapping tasks could be undertaken by local councils to identify potential sites for urban food production in their municipality. This included identifying unused open spaces, parks and reserves, or those which would be suitable for mixed-use approaches. Council-KI:10 felt it was about how well councils “…know and understand [their] reserves network, …[knowing] there is a piece that isn’t really required for recreation purposes”. Mapping of information such as contaminated soils, hill shade information, as well as degrees of accessibility and hazards, was also suggested. Many councils already have data on soil, topography, hazards and hill shade. Additionally, interviewees identified current council projects, such as heritage tree databases, suggesting similar methods could be utilised to map existing edible trees in public locations, and generate inventories. Mapping projects such as these were linked by Institution-KI:3 with an “urban styled permaculture approach”, something discussed in the literature by Copeman (2007).

Undertaking such exercises could also result in the generation of a “matrix of constraints”, as put by Council-KI:10, which could be applied to any public space to ascertain its suitability for food production. This could be used proactively for council-initiated food production activities, or as a means to identify valuable productive areas worth protecting from future development. It would also have potential to assess land identified by communities requesting permission to establish food production initiatives. Therefore, recommendation eight is the generation of a public land inventory.

**7.4.2. Lease Templates**

Developing appropriate lease templates would greatly assist in the use of public land for urban food production in New Zealand. Several experiences of complicated lease amendments, or working under an inappropriate lease for the desired land use, were identified as barriers. Given that planning deals with land management and tenure, planning services are in a prime position to address this issue, a suggestion supported by the work of Copeman (2007).
This concept of a leasing template could be extended to template systems for dealing with requests for urban food production land in general. It could be undertaken through a person (such as a facilitator), or through a policy (such as a policy on community gardens, clearly stating the relevant steps and processes required). Generating a ‘memorandum of understanding’ is another method suggested by Council-KI:3, describing the specific urban food production activity, and benefits to both parties, and formalising council support. Such systems would address the problem of loss of institutional knowledge, and would allow difficult processes to be identified and simplified. These systems would also help clarify within council how urban food production should be dealt with. Recommendation nine is, therefore, to generate a lease template tailored to urban food production activities on public land.

7.4.3. **Edible Landscaping**

Two of the local councils included in this study had intentional fruit and nut tree planting activities underway. While some barriers were identified, strategies such as careful selection of location, variety, and application made this a viable and beneficial option. Although this meant some research was necessary, fruit and nut tree planting was a direct action councils could contribute to urban food production and required less maintenance than many gardening activities. Given the benefits discussed throughout the literature review, along with the success fruit and nut tree planting has already achieved in New Zealand, planting edible plants is suggested as a way councils can enhance urban food production. Recommendation ten is for councils, where possible, to undertake planting of productive species (such as fruit and nut trees, herbs and berries) through edible landscaping.

7.4.4. **Supporting Community Gardens in Schools**

Community gardens had developed within school grounds in several of the research locations. Given the barriers around public land use, some community groups turned to quasi-public land, such as school yards, as a creative approach to the land problem. Such initiatives were different from institutional school gardens, in that they were generated in partnership with communities outside the school. While school grounds do not fall within planning and local councils’ remit, community development does, and community gardens in this context were felt to be useful in contributing towards
council-community objectives. Council objectives, including education on waste minimisation and sustainability, could be incorporated into such activities, and council could offer in-kind support through staff skill or resources.

Community gardens in schools would not be suitable in all cases, as it would depend on individual schools, as well as on other constraints including geography and size. However, similar contexts could provide space for gardens, such as community centres, police and fire stations, and other land associated with public service. While councils may not immediately be in a position to support urban food production developments on public land directly, there are opportunities to help support alternatives. The benefits from such alternatives can be felt by communities, as well as helping to achieve council objectives. The eleventh recommendation is for councils to consider means of supporting community gardens in school grounds, or other quasi-public space, where appropriate.

The four recommendations in this section look at specific projects which planning, via local government, might consider in order to support and enhance urban food production in New Zealand. They are the last of the recommendations to be covered, for while they are perhaps the most directly tailored to urban food production, they would be most effective when undertaken in the environment provided through the earlier recommendations.

**7.5. Conclusion**

Eleven recommendations are presented in this chapter, which suggest ways that planning, through local councils, can support urban food production. They are presented in three tiers, each overlapping and supporting the other. The first tier addresses the big-picture issues or paradigm shift which is needed in order to support a directional shift towards sustainability in general, within which urban food production falls. This paradigm shift is suggested throughout literature on the subject of sustainable cities, as well as being identified by all categories of interviewees. In order for planning approaches to be utilised in supporting and enhancing urban food production and other urban sustainability developments, this shift must be undertaken.
There is already evidence both in theory and practice that such a change is underway; however, there is still a way to go.

The second tier of recommendations addresses planning tools, approaches or mechanisms, within local councils. The six recommendations are believed to have potential to support and enhance urban food production through setting the overarching policy of councils through plans and visionary exercises. Secondly, adopting a ‘multi-use’ or ‘mixed-use’ approach to planning land, objectives, resources and funding has potential to benefit both councils and urban food producers. A key recommendation at this level is the appointment of an urban food production facilitator, either within council itself or supported by council but managed by an independent body. Such a role is proposed to address current leadership and knowledge issues and assist groups in navigating council processes. It is important council processes are communicated clearly; this is also highlighted with regard to communicating constraints and accountabilities. Achievement of this is recommended through developing a specific urban food production policy, or at least defining key elements of urban food production and the related council support or involvement.

Finally, four recommendations are made at a micro-level. They constitute specific projects believed to offer support for urban food production in New Zealand. The first is to build a public land inventory, which would involve research, auditing and mapping current land availability, use and features. In addition the generation of templates for leasing public land, along with templates or systems formalising council support for urban food production initiatives in general, are recommended. Two examples from the research, fruit tree planting and supporting community gardens in school grounds, are also recommended, as they were effective throughout the research locations as means of supporting and enhancing urban food production in New Zealand. The following page details a summary table of the eleven recommendations (see Table 9).
Table 9: Eleven recommendations for local government support for urban food production.

<table>
<thead>
<tr>
<th>Recommendations</th>
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<tbody>
<tr>
<td><strong>Recommendation 1</strong></td>
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<tr>
<td><strong>Recommendation 2</strong></td>
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<td><strong>Recommendation 3</strong></td>
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<td><strong>Recommendation 4</strong></td>
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<tr>
<td><strong>Recommendation 5</strong></td>
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<tr>
<td><strong>Recommendation 6</strong></td>
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</tbody>
</table>
| **Recommendation 7** | Through an urban food production policy, councils undertake to:  
  (a) Identify and communicate constraints and processes affecting urban food production and  
  (b) Define urban food production activities, as well as minimum criteria for such activities. |
| **Recommendation 8** | Councils generate a public land inventory. |
| **Recommendation 9** | Councils generate a lease template tailored to urban food production activities on public land. |
| **Recommendation 10** | Councils undertake planting of productive species (such as fruit and nut trees) where possible through edible landscaping. |
| **Recommendation 11** | Councils consider supporting community gardens in school grounds where space allows. |

Overall, the recommendations build upon each other and are mutually supportive, from attitudinal changes affecting the effectiveness and likelihood of ongoing support for urban food production, right down to the micro-level projects. The recommendations also display the range of opportunities there are for planning and
local councils to support urban food production. Macro-level changes will enable the creation of a context within “which metropolitan sustainability planning can occur” (Wheeler, 2000). Despite these recommendations being applicable nationwide, each cultural, geographical, social and economic context throughout New Zealand will be unique. Therefore, additional opportunities will be available for support of urban food production and can be identified locally. Individual paths to the overall objective of more sustainable urban places, supported by local council and planning, can be further identified within those local areas. As put by Community-KI:1:

Our task is to spell out where we want to be, excite everyone …you don’t actually have to say how to get there, and people will find their own way.
Conclusion

8.1. Introduction
This research has looked at New Zealand urban food production examples undertaken at community, institution and council level. It was motivated by a growing body of literature on the necessity of urban areas taking a sustainable development path, and by the conviction that urban food production is an important part of this development (see Register, 2006; Girardet, 2008; Newman et al., 2009; Nelson, 2007; Birch and Wachter, 2008). Currently there is a lack of literature on how planning practice and urban food production interact, although suggestions have been asserted that planning roles could and should support and enhance urban food production (see Pothukuchi, 2004). Research and information is lacking on the interaction between New Zealand planning, and planning frameworks such as local government bodies, and urban food production initiatives. This thesis contributes to filling this knowledge gap by looking at the experiences of urban food production in Waitakere, Nelson and Dunedin, and their interaction with local councils.

The aim of this thesis was to identify how planning could support and enhance urban food production in New Zealand. Through analysing the experiences of these three research locations, key areas of potential planning support were identified. These are presented in the form of recommendations which identify opportunities for specific projects and change at a macro level, strategic or policy level, and micro level, and describing how planning and local government could support and enhance urban food production. This chapter concludes the thesis by summarising key findings,
addressing the overall research aim, discussing the limitations of this research, and identifying avenues for future exploration.

8.2. Urban Food Production in the Research Locations

Urban food production initiatives currently undertaken by communities, institutions and local councils were identified in each of the research locations. Community gardens were present in each of the research locations. There is much international literature on community gardens (see Fairholm, 1998; Armstrong, 2002; Kaufman and Bailkey, 2000); however, New Zealand community level initiatives appeared more diverse. Numerous activities took place where communities worked together to educate, distribute information and physically support urban food production at an individual level. Activities included working bees, community planting and workshops. Internationally, community gardens often provide space when land is scarce (Baker, 2004; Miller, 2008). However, in the New Zealand context, comments from interviewees suggest the particular style of community level urban food production activities undertaken could result from the relative abundance of open space on private properties in urban New Zealand, an abundance also noted by Freeman and Buck (2002). This may suggest support for such activities falls outside local councils’ planning remit, which from a narrow perspective mostly deals with public land management. However, Chapter 5 identifies several barriers constraining urban community food production activities which local councils could address, and Chapter 6 presents ways some councils are currently supporting such community activities.

As with community initiatives, institutional urban food production also had a focus on education and knowledge building. Many schools had edible gardens, often in association with the nationwide Enviroschools programme (see Enviroschools, 2009). Faith groups were also hosting gardens in their churchyards as well as running outreach programmes where church communities would together establish gardens in private properties throughout their parish. Other institutions included a retirement village with an established allotment-type system for residents’ food production, and a campus incorporating urban food production as part of a shift towards a more
sustainable ‘living’ campus. These activities were often quite independent of local council support and planning, but nonetheless made up a high proportion of the urban food production activities taking place in the research locations. As seen in Chapter 5, the objectives of community and institution urban food production activities often overlapped with broad council objectives, suggesting there might be scope for mutually beneficial support in this area.

Finally, council-initiated urban food production was found to constitute mainly fruit and nut tree planting. Though frequently mentioned in the international literature, no examples of allotments were found in the New Zealand research locations, perhaps due to perceptions of New Zealand’s current open space, although some interviewees did feel allotments would be appropriate and utilised, especially by rental-property tenants. While fruit and nut trees could be found on council lands, they had not been planted primarily to increase available food, but were more often established trees inherited and managed by councils. This said, discussions with local council staff in each of the research locations indicated that the planting of food-producing trees was a direction many councils were thinking to undertake more intentionally, and had been requested in submissions. Councils were, however, supporting urban food production activities through their support of initiatives undertaken by communities and institutions, as Chapter 6 discussed. Characterising urban food production activities within the three categories demonstrated what types of activities are underway in the New Zealand research locations, and in doing so answered research objective 1. Once identified, these initiatives formed the source of experiences analysed in this thesis. These experiences included what motivated and supported them, as well as the barriers they faced.

8.3. Support and Barriers to Urban Food Production

There were a number of motivations, objectives, or drivers that had inspired the urban food production activities described above. These were in line with the motivations driving the development of urban food production mentioned in the literature. Health and nutrition formed a key area, with urban food production aimed at educating for healthy eating, or at generating a source of healthy, nutritious food. Educational
opportunities extended beyond health issues, however, and covered environmental education, waste minimisation, and education on gardening and food production skills. Community development was another driving force behind the urban food production initiatives identified throughout the research locations, especially for community level initiatives, but also for the institutional initiatives. Urban food production was recognised in the research locations, as well as in the literature (Mintz, 2006; Miller, 2008; Pothukuchi, 2004), as having potential to strengthen community cohesion and resilience, enhance local areas and help to develop local identity and pride. Support and motivation also came from other successful projects. This included urban food production projects from around New Zealand and internationally, as well as non-food environmental projects from which elements or models could be copied. In identifying areas of support, motivation, and the objectives behind urban food production activities in the research locations, it became clear that their objectives were frequently in line with those of the local councils, such as strong supportive communities, sustainable cities and environments, and healthy lifestyles. These objectives are also held by local councils around New Zealand, as can be seen through viewing the nationwide New Zealand community outcomes website (see New Zealand Department of Internal Affairs, 2009).

Barriers were also identified through the experiences of urban food producers, and consisted of physical, human resource and structural barriers. These were problematic areas for producers, and illustrated potential areas for support from local councils and planning. Physical barriers centred on availability of land and space for community activities, and dealing with space-related issues such as vandalism and maintenance. Other physical barriers included obtaining community support and buy-in from the wider neighbourhood or geographical community, and generating funding and resources for activities. Many barriers were linked with human resource issues, such as a lack of coordination and leadership, or lack of available time from those with such skills. A lack of leadership support could lead to other difficulties, such as maintaining momentum, networking and poor internal structure or politics. A final set of barriers were structural, such as barriers internal to current society, business and cultural systems in New Zealand. This category included the likes of undervaluing food, problems associated with extensive commoditisation of food, and the urban
populations’ disconnection from nature and food production. Structural barriers associated with local bureaucracies’ processes, such as local councils, were also raised and will be discussed next.

In addressing research objective 2, and in identifying the facilitative elements, as well as the barriers to urban food production, insights were gained into what areas of urban food production could benefit from council support. In some cases, as Chapter 6 demonstrated, local councils were already addressing some of these barriers. The process of identifying facilitative and problematic areas of urban food production also provided an opportunity to assemble data on a broad range of experiences, both positive and negative. This aided generation of the recommendations, where good practices in one location exemplified solutions which could be applied to problems in other locations. In this way, despite the diversity of the three research location contexts the generalised findings in this thesis are designed to provide opportunities with potential for nationwide adoption.

8.4. Planning Support for Urban Food Production

There were excellent examples of current council support for urban food production initiatives in the research locations. Identifying examples of current council involvement offered further insights into the potential of extended roles for New Zealand planning and local government bodies. A key element was local council staff, with sympathetic individuals often supporting or instigating sustainable practices which otherwise would not have been implemented, despite the policies and plans. Councils were also found to support urban food production workshops and educational activities, especially those incorporating the broader issues of sustainability, waste minimisation and biodiversity issues. These broader issues could be supported because of their inclusion in overarching policies and plans, showing how such documents could influence local councils’ ability to support urban food production, such as through the provision of resources and community funding. Local councils also undertook direct support for urban food production, such as by planting and maintaining edible landscapes themselves, as mentioned when characterising urban food production in Chapter 4. Key areas of current council support were
incorporated into the recommendations in Chapter 7, especially those instigated in one location which addressed barrier common to other locations.

Despite their support, key areas were identified where councils generated barriers to urban food production. Primarily this was connected to attitude, not necessarily a negative attitude, but more a lack of understanding or narrow thinking. Council structures and procedures were also felt to be problematic, especially for community groups with little experience or understanding of how these worked, or in cases where councils had no clear systems in place for dealing with urban food production initiatives. In identifying these barriers it became clear how councils could address them, as discussed in the recommendations. In addressing urban food production support and barriers related directly to local council, under research objective 3, an understanding of the interaction between councils and urban food production initiatives could be gauged. This exercise also highlights successful areas of interaction, and problematic ones.

8.5. Recommendations
Eleven recommendations were established (see Table 9 on page 131), and addressed all areas of the research, from the forms urban food production currently takes, to the problems it encounters as well as the objectives it is motivated to achieve. The recommendations target specific needs identified by the experiences of New Zealand’s current urban food producers, as well as building on the experiences and recommendations from international research and planning theory. The first recommendation addressed the barrier of inhibitive council attitudes. It recommends education and raising awareness at all levels of council, and encourages establishing a facilitative context within which sustainability initiatives such as urban food production can flourish. The second set of recommendations addressed direct planning and strategic linked activities. They consist of incorporating support for sustainability initiatives into overarching plans and policies; identifying means to provide urban food production in public spaces, adopting a mixed-use approach; seeking common objectives and supporting urban food production as a means to achieve them both now and in the future; funding or appointing a food facilitator
position; and producing policy specific to urban food production activities. Many of these recommendations would benefit a number of sustainability projects, and as such could be applied beyond urban food production activities.

The final recommendations were for specific projects, which arose from recommendations or identified problems experienced by current urban food producers. The recommendations consist of building an inventory of public land which includes details such as location, use, features and hazards. This could aid in identifying land appropriate for urban food production, and supporting communities wishing to find land. Numerous problems were identified around leasing of public land for urban food production, most of which could be solved through the generation of a lease template specific to this purpose. It was also suggested that councils research and undertake edible landscaping where appropriate, and that opportunities for supporting community urban food production activities in schools are identified.

These eleven recommendations were selected as the most appropriate to be addressed by local council, as the areas most in need of attention, or as areas presenting good opportunities which could be extended nationwide. However, the recommendations only identify a few of the many opportunities for planning to support urban food production. Each local place will have its own unique characteristics, generating opportunities to offer and receive support for urban food production. Despite the uniqueness of context and expression, there were several underlying experiences held in common by initiatives in the research locations. Several of these key elements were also expressed in the international literature. These common issues are the ones addressed in this thesis, and by the recommendations. However, in attending to how New Zealand local councils nationwide can support and enhance urban food production, the individual experiences have been analysed thematically, rather than as a product of their local contexts. This is one of several limitations to this research discussed below.
8.6. **Limitations and Future Study**

Throughout this study, limitations to the approach were identified, as well as avenues for further research. In addressing areas for local council support throughout New Zealand, a key limitation was that generalised, thematic issues were looked at and local specifics were not drawn out - aside from a few instances such as discussing the eco-city approach and sustainability policies. Individual councils, as well as adopting the nationwide recommendations presented by this thesis, need to understand the specific needs of their local urban food producers. Future studies could address the more characteristic local level issues, and identify how specific contexts affect urban food production experiences.

While the maximum possible time was spent in each location and many food production initiatives were identified, there are certainly initiatives and experiences not included in this study. Some urban food initiatives, such as well-established community gardens, had high profiles and extensively-linked involvement with a broad range of community groups including schools and council initiatives. Projects such as church group initiatives had a smaller profile, often working within their own parish or in conjunction with social welfare groups. The identification of activities to include in this study is likely to have been influenced by their profile amongst the urban food production community, potentially leading to under-representation of low profile groups such as faith-based initiatives.

In addition, this study concentrated on the experiences of three categories of urban food production, rather than attempting a comprehensive survey of all types of food production activities undertaken in each of the research locations. Examples of urban food production activities mentioned by interviewees but not included in this study are private or commercial activities, those taking place in the peri-urban areas, and rural activities supported by urban consumers such as Community Supported Agriculture examples. In looking at sustainable options for urban development in the areas of food provision, many of these areas have benefits to offer. Further study on additional categories of food production in New Zealand urban areas would be useful.
One other category deliberately not covered by this study would include individual ‘home’ or ‘kitchen’ gardens, which are potentially a major form of food production in urban areas. Interviewees conveyed that many urban households undertake this form of food production in New Zealand. Although outside the scope of this study, it is accepted that individual food production plays an important role and is significant with regard to urban food security, and sustainable urban development. It is also another area which potentially could be supported and enhanced through planning avenues, and is touched upon in ecological city approaches, and through urban biodiversity issues (see Beatley, 2000).

8.7. Concluding Comments

Overall this thesis argues that planning does have an important role to play in shaping sustainable urban places, and that it plays an increasingly important role in an urbanising world. Daniels (2009) argues that planning throughout history has been at the forefront of working on “the most pressing environmental problems of the day”, and urban sustainability is currently believed to be just this (Girardet, 2008). Planning theories currently address urban food production under the bigger picture of sustainability issues; however, at a local level it is time sustainability issues surrounding food received more attention from planning practice. This thesis concludes that there are multiple opportunities where planning can support and enhance food production in urban New Zealand, and has recommended eleven areas where suggested changes or projects can be adopted to achieve this. There is much scope for planning and local councils to enhance and support urban food production. Councils are encouraged to look to their local context and, as planners are trained to do, incorporate people, place and policy (Birch and Silver, 2009) to encourage resilient, sustainable and enjoyable urban areas in New Zealand for current and future generations.


References


Statistics New Zealand (2009b) online: Geographic Definitions,
References


Appendix 1

City boundary maps of the three research locations, showing the urban study area.

(See the maps inserted into final thesis for exact copy – a draft sample of the Dunedin Map only, has been attached to this electronic copy of the thesis)
Map 1: Dunedin City District boundary, with insert of the urban study area (Source: Statistics New Zealand, 2009).
Table detailing the roles of key informants included in this study.

<table>
<thead>
<tr>
<th>Key Informant</th>
<th>Specific Role</th>
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<tbody>
<tr>
<td>Council-KI:1</td>
<td>Parks and Reserves</td>
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<td>Council-KI:2</td>
<td>Planner</td>
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<td>Council-KI:3</td>
<td>Parks and Reserves</td>
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<td>Council-KI:4</td>
<td>Sustainability Role</td>
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<td>Council-KI:5</td>
<td>Urban Design</td>
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<td>Parks and Reserves</td>
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<td>Transition Town</td>
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<td>Community Garden</td>
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<td>Tertiary Education</td>
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Appendix 3

List of questions used as an interview guide while undertaking primary research.
Interview Questions (guide only –key areas were marked in comment field once addressed).

1) INTRODUCTIONS AND BACKGROUND
   a) What is your name and where are you based?
   b) Can you first give me an overview of what urban food production activities you have been involved with?
   c) What roles have you taken in these?
      (a) Is this part of your employment, and if so, what is your job role?

2) SPECIFIC PROJECT OR ACTIVITIES (if involved in multiple projects, cover them all)
   ...(from the activities listed above) “With regard to X, could you tell me more about that?”

Start of Project
   a) What is this X project?
   b) When was it established / When did your involvement begin?
   c) What initiated/motivated the project and/or your involvement?
   d) What processes were gone through to set up this project / your involvement in it?
      (a) Land and tenure status
         1. Why did you choose the route you did?
      (b) Funds and resources
      (c) Leadership
   e) What sort of organisational structure does it have, and who has been involved?
   f) What role do you play in this structure?
   g) Were there any issues/barriers/struggle with starting up / working with the project?
      (a) Why do you think this was the case?
   h) What went really well with the start up? / How easy was it to work with the group?
      (a) Why do you think this was the case?
   i) Other

Anything else you’d like to mention about the start up and early stages of the project?

The next set of questions focus on ‘during the project’.

To bring the project up to date/During Project

j) How is the project going now? Do you have ongoing involvement, is it effective?
   (a) Community support/lack of
(b) On-site Resources (water, waste, soil, contamination)
(c) Community/volunteer involvement
(d) Internal Politics
(e) Knowledge and Skills

k) What are some of the activities that have been undertaken? What ongoing involvement?
l) What things are working well?
m) Are there any ongoing issues / problems / setbacks encountered?
   (a) Vandalism
   (b) Restrictive Policies
   (c) Funding
   (d) Maintenance (who?)

n) Other?

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**External Organisational Involvement**

o) What other organisations have been involved with this project?
   (a) Why were they involved?
      a. What made it possible?
   (b) Why none others involved?
      a. What are some of the barriers?
      b. How do you think these could be removed?
   (c) What type of involvement has taken place?
   (d) How did it go?
      a. Beneficial
      b. Not beneficial
   (e) Other

---

**Council Involvement (for areas not already mentioned)**

p) Specifically has the council been involved at any stage with your project / what sections of council are involved with this project?
q) How did you find their involvement / how do they find being involved?
r) What role do you see the council could play in urban food production?
s) What areas do you think would benefit from council involvement?
t) What are some of the issues councils find about being involved?

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**Future of Project**

u) Can you see any issues developing in the future?
   (a) What issues?
(b) Why do you think they may develop?

v) Do you think your project will last? / Do you think you will continue to be involved?
   (a) Why? / Why not?

3) OTHER PROJECTS KNOWN ABOUT
   a) What are some of the other urban food production activities which take place in your area?
   b) What projects seem to work well in your opinion?
   c) Do you know of any initiatives which didn’t get off the ground? (why?)
   d) Do you think urban agriculture is a good idea?
      (a) Why? / Why not?
      (b) What types?

4) FUTURE ACTIVITIES
   a) What barriers, if any can you see which may prevent these from developing?
   b) What changes can you see happening which may encourage an interest or increase in urban food production activities?

5) OTHER PEOPLE WHO MAY BE INTERESTED IN PARTICIPATING, OR INITIATIVES TO VISIT
   a) Thanks heaps for your time
   b) Would you like a copy of your transcript?
      (can I get your postal address or email)
   c) Is there anyone else you think may be interested in this project, or who I should contact in this location?
Appendices

Refined question guide- focused for council informants (often with less time for interviews).

INTRO

a) Name and role – involved in other similar activities?
   a. What triggered your involvement?
   b. Are others from councils involved in similar activities?
   c. Will your involvement in the activity be ongoing? (why/why not)

b) Council Perspective
   a. Barriers faced when working with urban food production
      i. Setbacks/constraints
   b. Areas which run well, and why?
   c. What groups are easy to work with? (why/why not)

c) How effective/necessary is a council role/representation?
d) Are other areas or departments of council involved?

COUNCIL SPECIFICS

e) Other ways council is involved/engaged (types of project)
f) Forms of council involvement (eg facilitation/land/funding)
g) Potential future involvement – (potential for change?)
h) Any policies/provisions in plan linked with food production/security/relevant areas?
i) Any changes you would make/recommendations for other councils?

GENERAL

j) Do you know of initiatives that didn’t get off the ground? (why/why not)
k) Do you think food production in cities generally is a good idea?
l) Suggestions of other people/would you like your transcript/future contact…
m) Anything else…?
Appendix 4

The information sheet given to key informants participating in this research.
Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you of any kind and we thank you for considering our request.

**What is the Aim of the Project?**
This research project aims to explore opportunities for planning to enhance and support local food production in urban areas. The project looks at community initiatives and local government practices affecting local food production, within the urban New Zealand context.

This project is being undertaken as part of the requirements for the Master of Planning Degree at Otago University.

**What Type of Participants are being sought?**
The project will be informed by many participants from both council and community, who have been involved in the diverse aspects of local urban food production, on both small and large scales.

**What will Participants be Asked to Do?**
Should you agree to take part in this project, you will be asked to participate in an interview on local food production in urban areas. The interview will be recorded on a dictaphone (unless you request otherwise), and will take up to one hour.

This project involves an open-questioning technique where the precise nature of the questions which will be asked have not been determined in advance, but will depend on the way in which the interview develops. Consequently, although the University of Otago Department of Geography is aware of the general areas to be explored in the interview, the Department has not been able to review the precise questions to be used.
In the event that the line of questioning does develop in such a way that you feel hesitant or uncomfortable you are reminded of your right to decline to answer any particular question(s) and also that you may withdraw from the project, at any stage, without any disadvantage to yourself of any kind.

**What Data or Information will be Collected and What Use will be Made of it?**

Data collected will include your involvement in urban produce initiatives, barriers or facilitative elements you encountered, your opinions on where support needs to be increased, and on best practice elements identified from current literature on the topic – including land tenure, service provision (e.g. water and waste), education, funding and human resource support.

All data collected will be securely stored, and only the interviewer and her supervisor (see below) will have access to it. At the end of the project any personal information will be destroyed immediately except, as required by the University's research policy, raw data on which the results of the project depend will be retained in secure storage for five years, after which it will be destroyed. References to the data in the final report will maintain confidentiality of all participants.

The final thesis will be publicly available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve participants’ anonymity. In addition, this project has received financial support from the Centre for Sustainable Cities, New Zealand. There is potential for conclusions from this thesis to be published in conjunction with other work from the centre. Participants may also request a copy of the final thesis.

**What if Participants have any Questions?**

If you have any questions about our project, either now or in the future, please feel free to contact either:-

Anna Mulqueen Star or Charlotte Chambers
Master of Planning Candidate Lecturer
Department of Geography Department of Geography
University Telephone: (03) 479 4220 University Telephone: (03) 479 9126
staan140@studentmail.otago.ac.nz cnlc@geography.otago.ac.nz
CONSENT FORM FOR PARTICIPANTS
Opportunities for Planning to Enhance and Support Urban Food Production

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:-
1. My participation in the project is entirely voluntary;

2. I am free to withdraw from the project at any time without any disadvantage;

3. Interview notes and dictaphone recordings will be destroyed at the conclusion of the project, but any raw data on which the results of the project depend will be retained in secure storage for five years, after which it will be destroyed;

4. This project involves an open-questioning technique where the precise nature of the questions which will be asked have not been determined in advance, but will depend on the way in which the interview develops and in the event that the line of questioning develops in such a way that I feel hesitant or uncomfortable I may decline to answer any particular question(s) and/or may withdraw from the project without any disadvantage of any kind;

5. I will receive no remuneration or compensation for my participation in this research project;

6. The results of the project may be published, and will be made available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve my anonymity.

I agree to take part in this project.

..........................................................................
(Signature of participant)  ...........

..................................................................
(Date)