Toi Te Ora
Public Health Service
BAY OF PLENTY DISTRICT HEALTH BOARD
Serving Bay of Plenty and Lakes Districts

Edible Impact

Food Security Policy:
A review of literature and synthesis of key recommendations for
Toi Te Ora - Public Health Service

Author: Sarah Stevenson
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Executive Summary

The World Food Summit of 1996 defined food security as existing *"When all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life".*

The Toi Te Ora - Public Health Service (Toi Te Ora) Plan 2009-2012 outlines the need for policy work in the area of food security. It was identified that there was a need to review relevant literature to inform the direction required to achieve this annual plan objective. This report collates the literature review that was conducted in 2011.

The purpose of the literature review is to scope and summarise a range of literature to highlight themes and generate recommendations for future work in this area by Toi Te Ora.

Food insecurity in the developed world is not a new phenomenon, however approaching it from a local government and policy level is still fairly new. Research reviewed in this report highlights the need for intersectoral collaboration from all levels of the food system in order to make change.

This literature review commonly found evidence to suggest that forming a collaborative group, often called a food policy council is the best approach to start to address food security locally. A food policy council can advise and promote locally driven work to improve food security. Work may include developing a food charter (a relevant committed vision for the region), policy and strategies. Food policies typically focus on meeting food charter goals with land-use planning, urban agriculture, emergency food distribution, food retail access, community health, waste management and economic development. There is a wide scope of influence that can improve access to affordable, healthy, safe and nutritious food or 'food security'.

There is also a range of findings around the role of local government in addressing food security, however with the limitations of council staff capacity (knowledge, resources and time) and the lack of documented local government food security strategies in New Zealand, a toolkit would be of use to assist local government to guide this process.

The international and national literature regarding local food policy and food security strategies highlight some common themes. These themes have been developed into the following recommendations for future Toi Te Ora work:
- Develop a toolkit for local government use in addressing food security
- Support and advocate for the development of Food Policy Councils
- Support local food environment research.

With a collaborative response by both the community and local government, movement towards food security is possible.

Introduction

The Toi Te Ora – Public Health Service (Toi Te Ora) Plan 2009-2012 outlines the need for policy work in the area of food security. This report aims to provide a summary review of relevant international and national literature and offer recommendations for future project work.

This report is focussed on finding information around what food security improvements can be made at a local and regional level, rather than national level. This is due to Toi Te Ora servicing the Bay Of Plenty and Lakes districts. The literature scan is aimed at analysing work that has been done at a strategic level and incorporating work by local government and public health. This report also acknowledges the importance of work by central government and community level initiatives to improve food security. Food Security improvements will be achieved through collaboration and multiple levels of quality initiatives.

Aim

To review the literature to generate recommendations for Toi Te Ora's future work addressing food security from a local government and food security policy perspective.

Background

The World Food Summit of 1996 defined food security as existing *"When all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life".*

Commonly, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences[1]. In contrast, food insecurity exists when people are unable to access enough healthy food, experience hunger, consume less nutritious foods due to limited options, experience anxiety due to difficulty in accessing nutritious food, or rely on food relief[2].

The global picture of food insecurity ranges from malnutrition due to starvation by food deprivation to malnutrition due to overconsumption of kilojoules whilst under-consuming vital nutrients. Both instances are determined as food insecurity, and both instances result in diseases, morbidity and mortality.

The World Health Organisation explains that food security is built on three pillars:
- food availability i.e. sufficient quantities of food available on a consistent basis
- food access i.e. having sufficient resources to obtain appropriate foods for a nutritious diet
- food use i.e. appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation[1].

Food security is a complex sustainable development issue, linked to health through malnutrition, but also to sustainable economic development, environment, and trade[1].

Food insecurity is characterised by anxiety about not having enough food to eat, running out of food, and having no money to purchase more[3]. Issues such as: whether households get enough food, how it is distributed within the household and

whether that food fulfils the nutrition requirements for good health of all members of the household show that food security is closely linked to health[1].

Food security policies and programmes have the potential to play a role in reducing acute health care costs through preventative measures, support economic development and create jobs by developing local agri-food industries, raise the quality of life of residents by increasing access to safe, nutritious food, and promote environmental wellbeing through sustainable agriculture techniques or the promotion of local food[4].

Past strategies addressing food security typically surround the area of promoting healthy eating based on individual choices, while many people, particularly those with low incomes, do not have the resources to make the recommended decisions[5].

Food security over the past 20 years: The New Zealand Context

In New Zealand, the National Advisory Committee on Health and Disability (1998) concluded that income is the single most important modifiable determinant of health and wellbeing. Māori and Pacific households are disproportionately represented in the two lowest income quintiles[6]. The highest rates of illness and premature death are generally experienced by those who are worst off financially[7]. In its report reviewing social policy and food security, the New Zealand Network Against Food Poverty[8] found that actual food costs were much higher than most low income households had available after meeting their basic expenses such as for housing, power and transport.

In the early 1990s it was stated that the New Zealand food supply was more than adequate to provide enough nutritious and safe food for everyone[9], and this hasn't changed, however food insecurity still exists today with Māori suffering more from a lack of food security than New Zealand European and Others (NZEO)[2]. It has been estimated that approximately 100,000 households in New Zealand currently experience low food security[2]. This is equal to 7.1% of all private households as defined by Statistics New Zealand (2006).

According to the most recent New Zealand National Children's Nutrition Survey (2002):
- 33.6% of Māori households stated they could afford to eat properly sometimes, compared to 12.1% of NZEO households
- 37.5% of Māori households reported they ran out of food sometimes or often, compared to 13% of NZEO households
- 30.7% of Māori households stated they ate less food because of lack of money, sometimes or often, compared to 10.2% of NZEO households
- 45.2% of Māori households reported that lack of money affected the variety of food consumed either sometimes or often, compared to 27.8% of NZEO households[10].

When examining the income distribution of New Zealand society, we find that children are more likely to live in households with lower incomes.

Between 1994 and 1998 child poverty rates declined, as economic conditions improved and unemployment fell. Between 1998 and 2004, child poverty trends varied, depending on the measure used, but between 2004 and 2007 they again declined, following the roll out of the Working for Families package[11].

During the years of 1984-2010, child poverty rates were higher for[11]:

- younger children aged 0-11 versus children aged 12-17 years
- larger households with three or more children versus households with 1-2 children (with children from these larger households making up 48% of all poor children)
- sole parent households
- households where the adults were either unemployed, or where none worked full time.

It should however be noted that waged work does not guarantee the absence of poverty[12].

It is also important to understand female poverty and the consequences for children. A child of a female sole parent is more likely to be in a home of lower income and, therefore, is at higher risk of nutritional disadvantage. A significant number of homes where the sole parent is female are in the lowest income groups. In New Zealand, child poverty rates for children raised in both sole parent and two parent households increased rapidly between 1988 and 1992. In absolute terms however, poverty rose most rapidly for children in sole parent households, with rates reaching a peak of 77% in 1996. This compared unfavourably with the two parent rates that peaked at 29% in 1994. While rates for both household types declined between 2001 and 2007, during 2007 child poverty rates for those in sole parent households remained higher than their 1980s levels, while rates for two parent households were similar[11].

The price of food is extremely significant for people with low incomes. It is one of the key features in determining what they purchase and eat and has a significant impact on their disposable income for other needs. Food security is improved when fresh produce such as vegetables and fruit are affordable and when low fat or high fibre products are competitively priced against their alternatives[13]. In a New Zealand study of low income households, 70% of mothers said they restricted their own meal size to feed their children[14]. Similar studies overseas found that women who report hunger in their households have significantly lower energy and nutrient intakes than those who do not[15,16].

The available evidence on the diets in low income households indicates that they are low in vegetables, fruits, lean red meat and dairy products, but tend to be too high in fat, salt and sugar[17]. The evidence suggests that this imbalance is not due to ignorance; that is, low income households are aware that they are not eating healthy foods[17]. Educational efforts are unlikely to make much impact if a wide range of socioeconomic factors remain unchanged[8].

The 2008 National Adult Nutrition Survey interviewed 4,721 New Zealanders to learn about their eating behaviours[18]. Based on responses to a series of eight statements, 59% of households were classified as being *fully/almost food secure*, 33.7% were classified as being *moderately food secure*, and 7.3% were classified as having *low food security* (see figure 1). From 1997 to 2008/2009 the proportion of households classified as having *low food security* increased for males (1.6% to 5.6%) and for females (3.8% to 8.8%). Therefore, it is important that we work to change this worsening trend in order to improve the New Zealand population's food security.

Figure 1.
Food Security Categories, by sex. 2008 National Adult Nutrition Survey
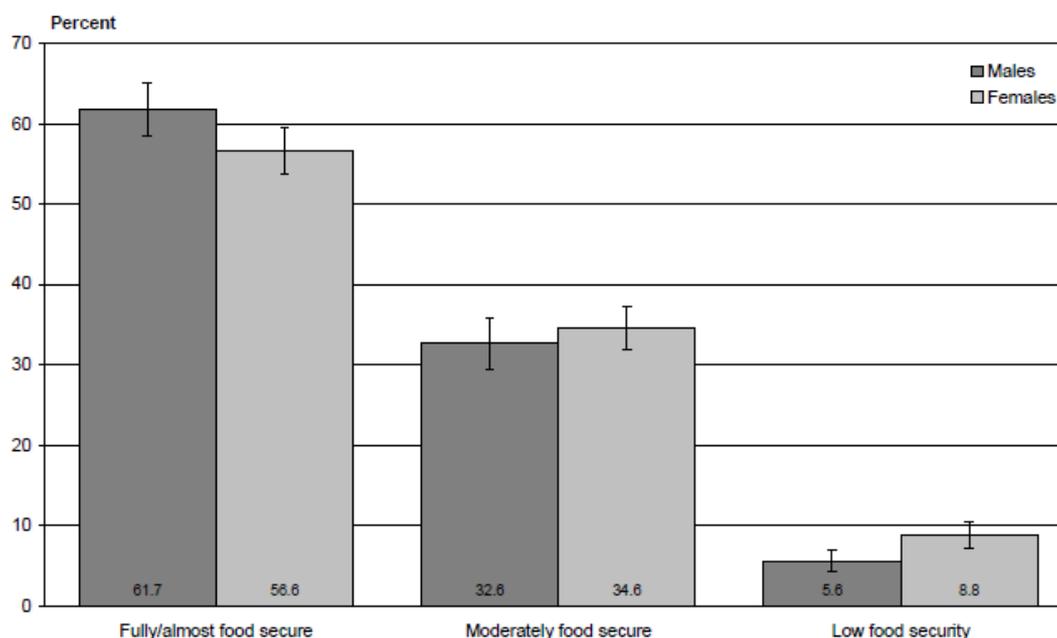
Food bank growth increased dramatically in the early 1990s in New Zealand. The demand for food bank services continued to grow throughout the late 1990s. By the late 1990s it was estimated that around 10% of all New Zealand households received assistance from food banks at least once during the year [8]. The years 2000-2006 saw some inconsistent trends in food bank usage patterns in New Zealand, with some food banks reporting an increase in demand for their services while others reporting a decrease in demand. There are multiple reasons for these variations which may not be related to the level of need in the community[19]. Māori and Pacific peoples were also disproportionately more likely to access food banks than others, and women accessed food banks more than men[20].

It is recommended that adults eat at least three servings of vegetables and at least two servings of fruit each day (Ministry of Health 2003). Participants in the 2008 National Adult Nutrition Survey were asked how many servings of vegetables (excluding juice) they eat on average each day and how many servings of fruit (excluding juice) they eat on average each day. There was no change from 1997 to 2008/2009 in the proportion of males and females who reported they consumed the recommended three or more servings of vegetables a day. However, there was an increase in the proportion of both males and females who reported that they consumed the recommended two or more servings of fruit a day (see table 1).

Table 1.
Fruit and Vegetable Intake, by sex, comparing the 1997 and 2008/09 data.
2008 National Adult Nutrition Survey

Indicator	Sex	1997 NNS	2008/09 NZANS	Trend from 1997 to 2008/09
3 or more servings of vegetables per day: percent (95% CI)	Males	61.8 (58.7–64.8)	59.3 (55.7–62.9)	nc
	Females	73.1 (70.9–75.3)	72.2 (69.5–74.8)	nc
2 or more servings of fruit per day: percent (95% CI)	Males	34.8 (31.6–37.9)	54.6 (51.4–57.8)	↑
	Females	56.1 (53.6–58.7)	65.8 (63.6–67.9)	↑

Note: nc = No change.

The 2008 National Adult Nutrition Survey compared obesity figures with levels of deprivation. Overall the levels of obesity increased along with deprivation, there were higher levels of obesity in our poorer communities (see figure 2).

Figure 2.
New Zealand Body Mass Index Categories, by sex. 2008 National Adult Nutrition Survey
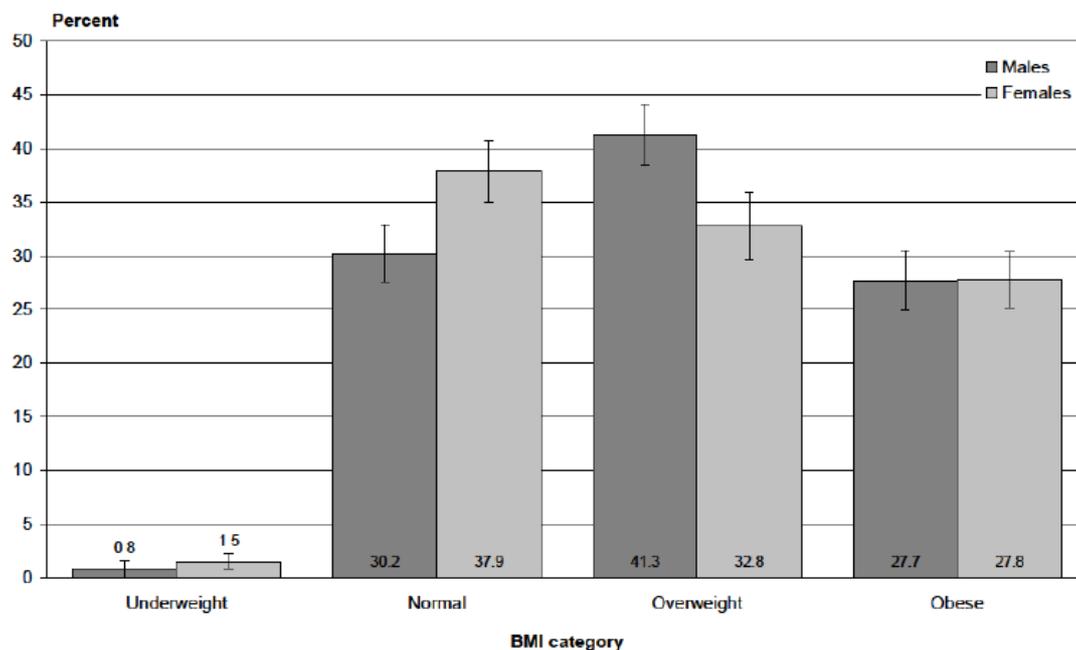
Before giving advice about food to New Zealanders who may be at risk of food insecurity, it is important to give forethought to this issue[21]. Having enough money to buy food and select good quality food is a key measure of access to a healthy diet. When disposable income is limited, food is one of the first discretionary items to be spared. In some countries access to food is supported by the provision of other resources such as meal vouchers or food coupons, or the provision of financial assistance with housing or other basic requirements. This means that more money is made available for purchasing food [2]. Food insecurity is primarily a result of inadequate income rather than ignorance or lack of education[8].

Method

A literature review was conducted to scan for food policy interventions worldwide to generate key recommendations. The literature review was conducted between January and June 2011, and the draft report was released mid June 2011.

The search term 'food policy' was used in the Bay Of Plenty District Health Board library database and a generic Google search was also conducted to review any relevant projects. The search was limited by year of publishing (post 1990) to obtain chronological relevance, and this limitation also provided enough scope to show long-term project history and evaluation (~20 years).

The search was also limited to countries in the OECD and, in particular, countries with a similar food system to New Zealand, for relevance of New Zealand application. Canada, Australia and the USA provided the majority of relevant literature. New Zealand offered needs assessment based literature, but little actual food policy intervention reports were found.

Information regarding work with food pricing strategies within food stores was not included as Toi Te Ora has an existing relevant project - Kai at the Right Price.

There was sufficient evidence in the literature to make sound recommendations to inform future Toi Te Ora work in food security for 2012 and beyond.

Literature Review

The key points from each piece of literature studied that are relevant to the aim of this review are outlined below. The aim of the review was *"To review the literature to generate recommendations for Toi Te Ora's future work addressing food security from a local government and food security policy perspective".*

NB: Within the literature summaries the word 'report' refers to the specific piece of literature that is being reviewed.

Te Hotu Manawa Māori *and Obesity Action Committee: Food Security among* Māori *in New Zealand, 2007*[13].

This report is regarded as an information tool addressing the evidence of the scope of the issue of food security in Māori. It established the need for collaborative work towards increasing food security in Māori.

The appendix of this report collated a broad snapshot of past and current projects that aim to address food insecurity in some way. The vast majority of case study interventions detailed were skill development based in the areas of increasing nutrition knowledge, and often limited or no evaluation data was presented. These types of initiatives may form a part of a local food security strategy but cannot be considered as a whole intervention to address food insecurity.

Canterbury District Health Board, Food Security: A Review and Synthesis of Themes in the Literature, 2009[22].

Key points summarised from this report:

- The effects of food insecurity on health status and social wellbeing are well documented. It is especially damaging for child health and development, and is associated with an increased risk of overweight and obesity.
- Emergency food assistance is necessary for short term relief but does not address the underlying causes.
- Qualitative studies have shown that community gardens, community kitchens, bulk buying and produce distribution interventions can provide a more nutritious and varied diet for participants and also have considerable psychosocial benefits for individuals, families, and communities that participate, however these programmes tend to miss the most deprived sector of society.
- Statistically significant improvements in food security status have been difficult to demonstrate from community programmes but as yet there is limited research, especially from long-term studies.
- This report states that it has not yet been possible to demonstrate direct health improvements as a result of community food security programmes.
- Policy change at all levels of government (top-down interventions) combined with programmes that work at a community level (bottom-up interventions) is needed for any meaningful change.
- Canadian programmes are more developed than other countries and these may provide a useful guide to the best approach. Australia, especially Victoria, has also begun to intervene based on recommendations and knowledge gained from the Canadian programmes.
- Encourage intersectoral collaboration to set up community programmes, provide coordination, and advocate for policy change at a local, regional and national level.
- It is also important that programmes are evaluated and that the results are widely disseminated to strengthen the evidence base about best practice.

Enhancing Food Security and Physical Activity for Māori, Pacific and Low-income Peoples, 2009[23].

This represents the culmination of a multi-phase programme of research on the environmental influences on food security and physical activity among Māori, Pacific, and low income families/whānau.

This report recommends work in the following areas to improve food security:
- increasing the statutory minimum wage rate
- ensuring full and correct benefit entitlements
- responsible lending and loan requirements and legislation
- provision of free or subsidised food in schools
- improving food purchasing and choices
- enhancing cooking skills
- development of links to traditional Māori food sources
- community markets, community gardens, and improving access to food
- reducing the cost of healthy nutritious food
- community-based initiatives
- examining the potential role of the food industry.

Cooking skill enhancement is also recommended by this report:
- Practical cooking skills should be taught in schools, with a focus on preparing affordable healthy meals (for example, the NZQA standard to 'provide nutritious low-cost food for a family'). The focus in the curriculum should be on practical, hands-on cooking skills rather than a focus on food technology.
- Flexible community-based cooking skills courses should be developed at a national level, with ability to tailor to audiences.

- Community based cooking skills courses should be evaluated to determine their impact on food security.
- There is a lack of evidence on budgeting skills interventions, and these should be trialled and evaluated to assess if they are an effective intervention to improve food security.

The unique focus offered in this research report is the relevance to health equity and Māori health. In regards to community gardens the report states, "The impact of community gardens on food security has not been evaluated; therefore it is difficult to determine their possible effect on equity. However, gardening is seen by Māori as a culturally relevant response to food insecurity due to strong cultural and spiritual connections with the land. Furthermore, community gardens may be a means to reinvigorate and develop traditional Māori skills in working with the land".

The report provided the following recommendations regarding gardens:
- Support community gardens where there is community demand for them. Alongside this, evaluation or research should be conducted to determine their true impact on food security and nutrition.
- Trial and evaluate community/farmers' markets in low income areas, along with consideration of suitable transport options to attend markets.
- Conduct economic analyses of supermarkets providing shuttles in low income areas.
- In some areas, if a community market is not feasible, subsidised fruit and vegetable delivery boxes or mobile vendors could be considered as an alternative.

The section regarding working with the food industry highlights the multiple levels of the food supply chain. The World Health Organisation also recommended that working with the food industry should involve acting in all areas of the food supply chain. The food supply chain can be broadly divided into three areas: upstream - primary food production; midstream - food manufacture; and downstream, which is the food retailers.

The report highlights the role of public health and local government to work with the food sector to investigate interventions that make nutritious food more affordable, noting that collaboration is often difficult due to the fundamental differences in the goals of public health and the food industry.

Another section of interest is the review of Health Impact Assessments (HIAs) in regards to physical activity and food security in New Zealand. The report acknowledges that many HIAs have been done in the area of physical activity but there are none recorded addressing food security.

This report also notes the links with Healthy Eating Healthy Action (HEHA) and that an environmental scan of current initiatives should be done.

Food Security Options Paper: A Planning Framework and Menu of Options for Policy and Practice Interventions; NSW Health, 2003[24].

This report notes the importance of creating sustainable change by looking at both sides of the food security equation, to modify communities' food supply as well as people's access to food.

To improve the location, availability, price, quality, variety and promotion of food (indicators of a good food supply), nutrition policy makers and practitioners need to

engage with the relevant sectors of the food and nutrition system. A midstream intervention, such as establishing a food policy coalition, will take longer to affect individuals, but may lead to more sustainable action to improve the local food supply and people's access to food.

From the food supply viewpoint, this report acknowledges that it is useful to determine what, where and by whom food production, processing and transport occur within the targeted region. Figure 3, taken from the report, summarises the key points of access to food security intervention from the food supply side of the equation.

Figure 3. Points of intervention to improve food supply
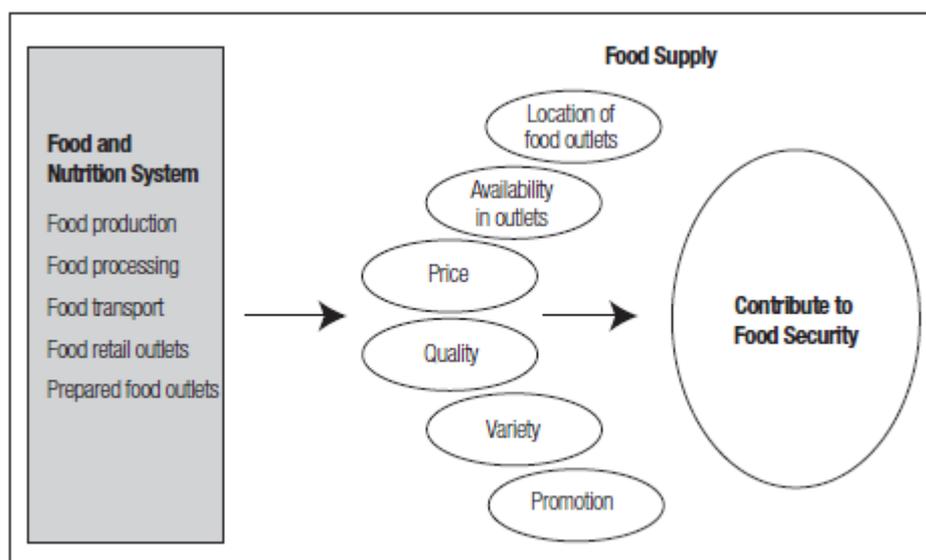
Rychetnick, Webb, Story and Katz (2002) Food Security Options Paper, NSW Centre for Public Health Nutrition.

In regards to access to food, developing knowledge and skills relating to food purchasing and preparation is only one factor in supporting food security. Many food security interventions to date however, solely address this one factor. Education efforts to develop knowledge and skills is limited in scope as a population group having knowledge but lacking the resources to mobilise this knowledge will do little in improving food security.

This report acknowledges the importance of developing personal knowledge and skills as part of a whole set of strategies addressing food security. Sustainable methodologies would develop a community capacity building approach to ensure that the target population is able to mobilise itself in the future and obtain or generate required resources. It is important to note the role of the social and economic determinants of health that contribute to food security improvements. This highlights the need to advocate for change at 'upstream, midstream and downstream' levels. Figure 4 summarises the food access side of the equation.

Figure 4. Points of intervention to improve access to food
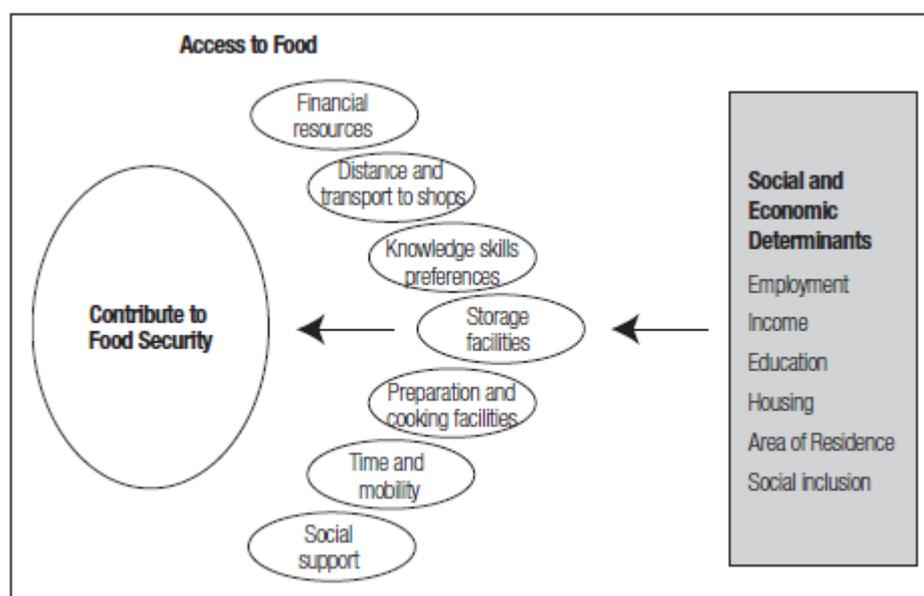
Rychetnik, Webb, Story and Katz (2003) Food Security Options Paper, NSW Centre for Public Health Nutrition.

This report advocates for food security coalitions (or food policy councils) to drive local food security work. It recommends such coalitions should address these three questions:
- What is the prevalence of food insecurity (among at risk population groups)?
- In what areas is the food supply inadequate, and why?
- Who has problems with acquiring food, and why?

This report also recommends the following in order to address food security:
- the formation of food policy councils or coalitions
- research, monitoring and evaluation
- advocacy on food security agendas
- government subsidies and incentive schemes
- community development and grant schemes
- harnessing applied technology.

A food policy council is an intersectoral working group that is established to bring about improvements to the local food supply to support food security. Food policy councils vary in their scope (eg they may cover a local government area or be region wide) as well as their activities, but overall they aim to generate the capacity to bring about change.

Most food policy councils will undertake some or all of the following activities:
- examine community food security and assess the local food supply
- identify, report and publicise problems with the food supply and advocate for change
- work with key stakeholders to develop/reform policies that satisfy the interests of all those affected
- oversee the implementation of the food policies developed or reformed
- evaluate the policies and actions to assess their impact on the food supply
- seek funding and resources to support activities of the food coalition and to sustain improvements to the food supply
- act as a catalyst for food security projects led by other groups.

This report acknowledges that food policy councils are more successful when they receive ongoing funding, eg from local council or health departments, than when given one off grants. It also states that developing a long term food policy council (at least five years, preferably 10-20 years) is potentially the most powerful intervention to improve food supply. This is predominantly because of their ability to engage with influential stakeholders and negotiate change at many aspects of the food and nutrition system. If long-term funding, commitment and skill are unavailable at the time to set up a food policy council, it may be more appropriate to initiate individual, smaller scale food system projects that target a particular aspect of the food supply.

There is a lack of evaluated initiatives addressing food security in New Zealand. There is also a lack of research on local issues regarding our food supply. These areas need to be addressed before commencing work in the food security arena. This may provide great opportunities for student placements or for a university dissertation. However, smaller scale research to inform smaller scale projects may also be an option to meet limited capacity.

This report details the following opportunities for research:
- measuring the prevalence of the various dimensions of food insecurity (that is, quality of food, shortage of food, experiences of hunger, anxiety about food intake, and risk factors for food insecurity among special groups)
- monitoring surrogate measures of food insecurity, such as the uptake of food aid programmes
- examining the relationship between the food system, access to food, food security and nutritional status
- mapping the location of supermarkets and other food outlets in relation to residential areas
- documenting the price, availability, quality and promotion of foods in community food retail outlets.

Food production interventions can include home garden promotion, community allotments, community gardens, school gardens, urban edible planting (a viable council-led initiative) and supporting local agriculture and farming.

Provincial Approaches to Food Security: A Scan of Food Security Related Policies in Canada (2009)[25].

This annotated list of policies, programmes, and government reports from all provinces and territories of Canada highlights innovative examples as well as general trends in food security approaches (Epp, 2009). It is described as being useful for anyone "…developing policy with an interest in precedent from other jurisdictions or promoting policy change" (pg4).

Approaches in the report include agricultural restructure and local alignment (including organic strategies), marketing, school based programmes, social service development, sustainability, indigenous programmes, research (including food assessments and food basket monitoring), healthy eating, and wellness approaches.

There is reference to the resource guide developed for local government to address food security. Community gardens, farmers' markets, neighbourhood planning, local food production, healthy food in public buildings, creating community capacity, and conducting food assessments or adopting food charters were highlighted as ways that municipalities could address food security in their communities[26].

This report promotes a localised food system as a recommended strategy towards reducing food miles (distance between producer and consumer) and possibly reducing food costs and availability. It defines a local food system as one that allows farmers, food producers and their customers to interact face to face at the point of purchase. Regional food systems generally serve larger geographical areas, and they can often work with farmers who have larger volumes of single products to sell.

The Nunavut province in Canada is highlighted in this report as having the only food security strategy that strongly targets their Aboriginal people. The strategies utilise traditional approaches to healthy eating and place an emphasis on hunting and trapping as a solution to local food concerns.

The Ontario Government in Canada offers an accreditation programme called Eat Smart! where local restaurants can display the Eat Smart! logo if they qualify. The restaurant must offer healthy food choices, have an excellent food safety record, and be entirely smoke free. The programme has been expanded to include schools, workplaces, and recreation centres. It is hoped that facilities will provide healthier options in order to gain Eat Smart! accreditation, while consumers can use accreditation to find healthy alternatives in their communities[27].

Implementing Community Food Action in British Columbia: Criteria for Success and the Role of the Health Sector (2006)[28].

A key relevant finding from this report was the role of public health in food security work. This was to focus on project management, coordination, and support with resources and funding. This provides valuable insight towards Toi Te Ora's approach to food insecurity work, as the community level programmes that have been mentioned conversationally with stakeholders would benefit from this level of project management assistance. Formally stocktaking what initiatives have been set up across the region and then strategising a coordinated approach with Toi Te Ora would seem an effective way forward towards comprehensive and coordinated improvements in food security. As with most community level initiatives, evaluation is not usually considered a priority in projects. Assisting with the evaluation of initiatives is therefore a great role that Toi Te Ora can play.

This report highlights three main recommendations for future planning:
- the need for evaluation of food security outcomes that are relevant for decision makers
- the need for the health sector to take a leading role in developing intersectoral strategies and policies
- the need for food programmes to look at a wider range of health issues outside of nutrition alone.

Discussion

The literature examined provided a broad overview of work that has been done internationally to progress towards food security. Identifying the role of council, food policy councils and developing a toolkit to support these two entities is discussed below.

The Role of Council

Based on cumulative learning and available evidence, the role of council in addressing food security can include:

- providing local leadership and coordinating work to address the determinants of food security work across the municipality and the region
- monitoring and disseminating information on local trends and data including gender disaggregated data
- regulating land-use planning to support local food production and supply
- planning and advocating for transport that is user friendly, safe and accessible
- regulating and monitoring food safety standards
- promoting a whole of council response to food security through a determinants based approach, integrating planning and action
- establishing and fostering strong partnerships with public and private sectors
- advocating to and building the capacity of all levels of government and community organisations to respond to food security
- providing access to information and financial and physical resources to community members and other key stakeholders
- maintaining awareness and providing input into state and federal government food security work
- facilitating informed public discussion and debate on food security with community members and key stakeholders.

Food Policy Councils

All of the literature reviewed recommended collaboration as an important aspect in planning and implementing any initiatives that affect food security. Specifically, the concept of establishing a food policy council was highlighted as a good strategic way of collaborating with key change agents and stakeholders to improve food security in a region. Examples of these have been included below.

The Toronto Food Policy Council (1991-current)[29]

The Toronto Food Policy Council collaborates with community organisations and networks to advocate for actions consistent with its policies. It serves as a forum where participating organisations are able to discuss policy issues and collaborate on integrated policies to address issues that may otherwise fall between the cracks of established departments and specialist agencies. Examples of key policies of the Toronto Food Policy Council include preserving urban agriculture, urban planning for food security, reducing urban hunger, food retail structure and food security, and consumer sovereignty.

The Toronto food policy page on the City Council website provides an extensive list of achievements of this group. This provides substantial evidence of the long-term and large scope of work that can be successfully led by a food policy council over a long time period.

South Sydney City Food Policy (1996-current)

The food policy aims to, "Ensure that people have the choice of a nutritious diet, nutrition information is easily obtained, food assistance services are well coordinated, food services provided by the Council are accessible, support exists for a healthy

environment for food wholesalers/retailers and that the food supply is viewed as part of a broad view of the health of the community".

The policy highlighted six issues; availability of the food supply, education for healthy eating, food quality, food diversity and accessibility, the Council's direct food services, and environmentally sustainable food.

Some of the initiatives implemented as a result of the policy include the development of new planning regulations to allow corner stores to be situated in residential areas, nutrition training for environmental health officers, nutrition workshops for childcare staff, and provision of financial assistance to emergency food relief agencies for construction of new infrastructure.

The Penrith Food Project (1991-current)
The Penrith Food Project is a local food system project that began in 1991 as a result of collaboration between Penrith City Council, the Nepean Health Service, and the University of Sydney. Project strategies were based on the findings of a feasibility study, which identified project partners, conditions for successful collaboration, and the components of the food system to be addressed. The project targeted the following settings; the agricultural sector, food retailers, institutional food services, neighbourhoods and households. Project planning was also guided by relevant health promotion theories.

In 1993 a multi-sectorial food policy committee was established to develop a strategic plan and to steer the Penrith Food Project. The goal of improving the local food system encompassed the following principles; retaining local agriculture, improving the food supply and access to food, promoting breastfeeding, and protecting food safety. Technical working groups were formed to guide specific projects. Achievements to date include open farm days, a rural land policy review, consideration of food retail facilities in urban planning policy, changes to bus routes to improve access to food for residents of new housing estates, home delivery services for groceries and fruit and vegetables, school breakfast and gardening programmes, food and nutrition policies for before/after school care and long daycare centres, Sydney's fresh food bowl network, development of policies for parenting facilities, and a 'model' workplace policy to support breastfeeding.

Maribyrnong Food Security Policy (2011-2013)
The purpose of this policy was to define the scope of food insecurity and the role of Maribyrnong City Council in reducing the fundamental inequities and local barriers to accessing, consuming and preparing food.

The policy was informed by the outcomes of a community consultation process and international, national and local research (preceded by the 2002 Food Security Policy). This policy aims to respond to the changing global and public policy environment and build upon the first food security policy and the Maribyrnong "Fruit and Veg for All" project, to provide a strategic framework to inform and guide work across council, with stakeholders and in the community over the next three years.

Food Security Toolkit
This search process did not find any available New Zealand guide for councils to address food security. There are several options that could be presented to council and community groups as opportunities to reduce food insecurity in their respective communities. If these are done well they could have a role in increasing food security. The following discussion points could be included as strategy options in a toolkit or form part of a comprehensive food security resource. The role of the

council is mainly in the areas of land-use, advocacy, promotion, partnerships, food system assessments, food policies, charters and plans for public venues.

An example of the toolkit used in British Columbia can provide a reference in developing a New Zealand specific one [26].

Food charters help communities' define what their food system should look like. They are declarations of communities' intent, and express key values and priorities for creating just and sustainable food supplies.

Food policies typically focus on meeting charter goals with land-use planning, urban agriculture, emergency food distribution, food retail access, community health, waste management and economic development.

Community gardens provide residents with the opportunity for recreational activity while growing nutritious food, meeting neighbours, building community, learning about the growing cycle, and beautifying open spaces.

Community gardens can be created on council-owned land, privately-owned land, at schools, workplaces, marae or on donated land.

Community gardens should be managed to ensure they are safe and sustainable. They should be well planned and include a form of monitoring or evaluation. Community gardens that have a focus on reducing inequalities and addressing social determinants should plan to meet the needs of those most deprived and food insecure.
- Tauranga City Council has a community gardens policy, a sample of which should be included in a toolkit.
- The Canterbury District Health Board Literature Review (2009) investigated several international evaluation reports regarding community gardens and kitchens.
- There are various guides to setting up a community garden; these therefore would not need to be included in a food security toolkit for councils.

Community gardens are a green space that the community utilises to collectively grow fresh produce which they are then able to access for their families. These are usually community led and volunteer run by those consuming the produce.

Benefits of community gardens:
Improvements in *social capital* such as:
- community capacity building
- community pride
- intercultural social engagement
- reduced isolation
- environmental enhancement
- empowering experience
- perceived reduction in crime and racial tensions
- access points to address other community issues
- raised neighbouring property values in low income areas.

Improvements in the *population* accessing the produce by:
- better access to fresh wholesome food
- cost savings
- provision of culturally appropriate food
- increased self-esteem

- increased fruit and vegetable consumption
- general nutritional benefits
- increased levels of exercise
- improvements in general wellbeing and connectedness to community and natural environment
- reduced exposure to pesticides (used commercially, not in gardens)
- increased personal skill development (studies did not relate this to employment creation or economic advances).

Community kitchens are community based programmes where small groups of people meet regularly to buy food in bulk and prepare meals together. The terms "community kitchen" and "collective kitchen" are used interchangeably to describe the pooling of resources by the group to make healthy low-cost meals for their families at home[30],[31]. Jamie Oliver's community kitchens have also been widely publicised in the media, although evaluation regarding food security was not found in this search. The nearest kitchen set up in proximity to New Zealand is in Ipswich, Queensland. This kitchen was established in 2010.

Benefits of community kitchens:
- make better use of limited finances by bulk buying
- avoid food waste
- more food variety
- increased fruit and vegetable consumption
- increased food safety practices
- more nutrient value per dollar spent
- reduced reliance on food banks and grants
- increased cooking skills and utilisation of staple foods
- increased label reading, meal planning, bulk buying and nutritional knowledge
- reduced isolation
- increased mental health including self esteem
- community empowerment
- ability to target disadvantaged population groups.

Limitations of community kitchens:
- transport difficulties to access a central kitchen
- attaining subsidies for those in extreme poverty
- costs of setting up kitchen

Only providing a few meals per month did not change food security or alleviate financial stress. Participants will need to utilise the kitchen for at least 5% of meals to mark any effect, those who used the kitchen for 25% of meals had the greatest effect on food security.[30]

Kitchens should aim to build community capacity by having strong leadership and voluntary involvement from those accessing the service. There could be room to investigate aligning the kitchen with the Work and Income New Zealand (WINZ) financial hardship payment cards, ie offering the kitchen as a registered place to receive WINZ food grants.

Food Access Research

Access to healthy food due to geographical remoteness, known as food deserts, is not well researched in New Zealand. In 2006, Toi Te Ora investigated the proximity of fast food outlets to 30 Lakes and Bay of Plenty schools, and it was determined that schools in the most deprived areas had higher numbers of takeaway stores in close proximity to them. [4] Budget (lower cost) food stores are a plausible tool in reducing

food price concerns for low income earners; however location of outlets may impact access. Transport opportunities for low income earners to shop at these stores may support food security.

A food desert is an area with little or no access to large grocery stores that offer fresh and affordable foods needed to maintain a healthy diet. Instead of such stores, these districts may contain fast food restaurants, convenience stores or no food stores.

"Access", in this context, may be interpreted in three ways:
- Physical access to shops ie healthy options are unavailable or have restricted access in some way. This can be difficult if the shops are distant, the shopper is elderly or infirm, the area has many hills, public transport links are poor, or if the consumer has no car.
- Financial access ie if the consumer lacks the money to buy healthy foods or the bus fare to remote shops selling healthy foods.
- Knowledge or behaviours around nutrition choices and food preparation can be major barriers limiting access to fresh produce and other healthy food choices. Consumers may lack cooking knowledge or have the idea that eating a healthy diet is not important.

The 'Neighbourhood Environments' study, published by the American Journal of Preventative Health suggests that neighbourhood residents who have better access to supermarkets and limited access to convenience stores tend to have healthier diets and lower levels of obesity. Results from studies examining the accessibility of restaurants are less consistent, but there is some evidence to suggest that residents with limited access to fast food restaurants have healthier diets and lower levels of obesity. National and local studies across the USA suggest that residents of low income, minority, and rural neighbourhoods are most often affected by poor access to supermarkets and healthful food. In contrast, the availability of fast food restaurants and energy-dense foods has been found to be greater in lower income and minority neighbourhoods[32].

The dispersed nature of the Toi Te Ora's geographical region may have some unidentified food deserts. Mapping the location of food stores and food outlets in relation to residential areas is a beneficial piece of research to identify any food deserts that may be affecting food security within our population. Research into this area in New Zealand is vital to understanding the full scope of our access issues to food. This type of research could be led by food policy councils, local government or public health.

The literature acknowledged that many HIAs have been done in the area of physical activity but there are none recorded addressing food security. It would be beneficial to consider performing an HIA for any proposed food security work to systematically assess the proposed initiatives on the health and wellbeing of the targeted community.

Conclusion

Food insecurity in the developed world is not a new phenomenon, however approaching it from a local government and policy level is still fairly new. Research reviewed in this report highlights the need for intersectoral collaboration from all levels of the food system in order to make change. There is evidence to suggest that the best way to get things started is by forming a food policy council to drive and advocate for work addressing food insecurity. The food policy council should work strategically and in alignment with Council. The targeted geographical area should be scoped for existing initiatives and food deserts. All existing work can be supported by the food policy council to be collaborative and all encompassing, including both top-down and bottom-up approaches. A food security toolkit would be of use to guide the Council to address food insecurity from their level. The report findings suggest that these recommendations be used to inform the next phase of the Toi Te Ora food security project.

Recommendations

The following recommendations have been derived from this literature review to inform the direction of future Toi Te Ora work in food security.

- develop a toolkit for local government use in addressing food security
- support the development of food policy councils
- support local food environment research

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