

Food Security:
The what, who, why and where to of food security in NSW
DISCUSSION PAPER

January 2010



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Physical Activity and Nutrition Obesity Research Group (PANORG)

Heart Foundation NSW

Cancer Council NSW

Physical Activity Nutrition Obesity Research Group (PANORG), Heart Foundation NSW and Cancer Council NSW, are committed to building a collaborative approach on selected aspects of obesity prevention.

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1. INTRODUCTION

This Discussion Paper considers food security in the context of food supply and access systems, and articulates how it links with food consumption patterns, weight and risk of chronic disease, in order to provide direction for research, policy and programs. The paper provides an overview of what is meant by the term 'food security', a summary of studies describing patterns of food insecurity in Australia, and strategies for promoting food security, with examples of programs. This synthesis also discusses the implications for research and programs in NSW. Importantly, it also seeks to clarify where there are or might be both common and divergent approaches to addressing food security and obesity and chronic disease prevention. Whilst there are known global and national influences on food security, this document mainly focuses on community, household and individual level food security.

The aim is to synthesise current information into an accessible and concise format, to guide our own work, as well as the work of other agencies. The primary audience for this paper comprises health professionals working in non-government agencies, government, area health services and community organisations who are interested in the prevention of obesity and chronic disease, nutrition and addressing health inequities.

This paper complements the report "*Food security: options for action*" published by the NSW Centre for Public Health Nutrition in 2003.(1) That document described the concept of food security in relation to food systems and identified potential intervention points that correspond with determinants of food security and key factors in food systems.

The World Health Organization (WHO) Action Plan for Food and Nutrition Policy calls for the implementation of food and nutrition policies to ensure a safe, healthy and sustainable food supply.(2) In Australia, the National Preventative Health Taskforce has recently recommended a National Food and Nutrition Framework, as part of the initial phase in the roadmap for reducing obesity.(3)

2. WHAT IS FOOD SECURITY?

Food security is a multidimensional concept. The Rome Declaration definition of food security has been formally endorsed at a global level.

“Food security exists 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.”(4)

The food security of any group of people is an outcome of food systems. This connection between food security and food systems is reflected by the Food and Agriculture Organization (FAO) who describe four main dimensions of food security.(5)

1. Physical *availability* of food
2. Economic and physical *access* to food
3. Food *utilisation*
4. *Stability* of the other three dimensions

The focus of programs to address food insecurity is often placed on strategies that address only one of these concepts.

Food Availability (supply) is the physical presence of sufficient choice and quantity of nutritious foods to meet consumer needs at competitive prices. Adequacy of food supply is determined by factors such as the location and accessibility of retailers and outlets, the availability of food within outlets, as well as the price, quality, variety and promotion of food.(6) This is influenced by industry cost structures, store management, distribution technology, the level of competition and consumer demand.(6)

Food Access (demand) is the ability of consumers to acquire food which is safe, affordable, competitively priced, culturally acceptable and nutritious by using physical or financial resources. Access depends on an individual's financial resources and total household expenditure, physical mobility and the distance and availability of transport to food stores, as well as food preferences.(6)

Utilisation in this paper refers to how people use food once they have accessed it. Utilisation includes food preparation, cooking and storage facilities, and incorporates issues of food safety. It depends on food preferences, which are influenced by eating habits and socio-cultural factors, as well as nutritional knowledge and the impact of time availability on an individual's ability to prepare healthy food.

Food security can be experienced at a national, community, household or individual level.

Background

In 1974, the world food crisis prompted a focus on global production of food, trade and stores. Strategies to address food security were focused on supply, and stability through reserves of food. The emphasis was on addressing food *availability* through the supply side of food security. This was underpinned by an emphasis on the level of food production, stock levels and net trade.

From the 1980s, the importance of food *access* was increasingly recognised as a key determinant of food security. Access, however, involves more than individual purchasing power. It is subject to market influences and can be achieved by means other than purchase

of food. Trade, bartering, collection of wild or 'bush' foods, community support networks, donations of food and even theft are common alternative means of securing access to food.

Concern over poor food access redirected focus to policy level changes which impact on incomes and expenditure. This move brought the food security discussion closer to the poverty agenda. An adequate supply of food at a national level, however, does not necessarily guarantee household level food security. The FAO identified the need to address food security at a household level, and the WHO considers that there are clear links between household level food security and health.(7) Since the 1990s the concept of food *utilisation* or use has also entered the discussion.(5)

Recent awareness of global environmental changes, climate change and trade liberalisation has focussed attention on broad scale issues of food security.(8) In fact, food systems and food security can be analysed on a large or small scale, from global, national and regional levels to household and individual levels.(8) Food systems occur at multiple levels and the levels are linked with each other. Increasingly, food system problems at a global or national level affect people at individual and household level.

Significant recent global changes in food systems comprise changes in food production, with larger-scale and intensive approaches, increases in 'value-added' activities in food processing and packaging, and more concentrated distribution and retail networks, with high food travel distances. While they are subject to global factors, local food systems nevertheless vary; the myriad of food supply and access factors interact in different ways that are context-specific.(8)

Thus, food systems may also operate inequitably, creating wide variations in food availability, access and utilisation which can lead to problems of food insecurity (and these can and do occur at national, regional, household or individual levels).

Food security as a human right

The concept of a right to adequate food is derived from the International Covenant on Economic, Social and Cultural Rights (ICESCR), 1966: "*the right to adequate food is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement*". Under the ICESCR framework, states have a core obligation to take the necessary action to provide for a satisfactory standard of living, for example access to housing, healthcare and education, as well as an obligation to mitigate and alleviate hunger.(9)

In 2004, the FAO Council adopted the Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security.(9) These guidelines are not legally binding, however, they provide guidance on the implementation of existing obligations under international law and they are also intended for stakeholders working towards the implementation of the right to food at a national level.(9) More recently, in an effort to promote food security as a human rights obligation at a government level, the International Food Security Treaty requires signatory nations to "*respect, protect, and fulfil the right to access to food*".(10)

Understanding food security in relation to overall patterns of food consumption

A number of conceptual frameworks have been used to describe the factors contributing to and characterising food insecurity. A recent United States review of the literature provides details of such frameworks, which contribute to a shared understanding of the issue.(11)

Food insecurity may occur as a consequence of a specific mix of food supply, access and utilisation factors, and the actual mix is likely to vary between population groups and places. Other social, economic and cultural factors also have a significant influence on food access, supply and utilisation. These same sets of factors influence people's general food purchasing and consumption patterns; and thus food security or insecurity can be considered as one aspect of people's overall food consumption patterns. Hence people or households who experience food insecurity may comprise a specific population subset, as a result of a particular mix of economic, social, access, supply or utilisation factors. The common local drivers and pathways for food consumption generally, and food insecurity specifically, are schematically illustrated in the framework presented in Figure 1. This framework was developed by the authors and is consistent with other frameworks in the literature on food insecurity.(11)

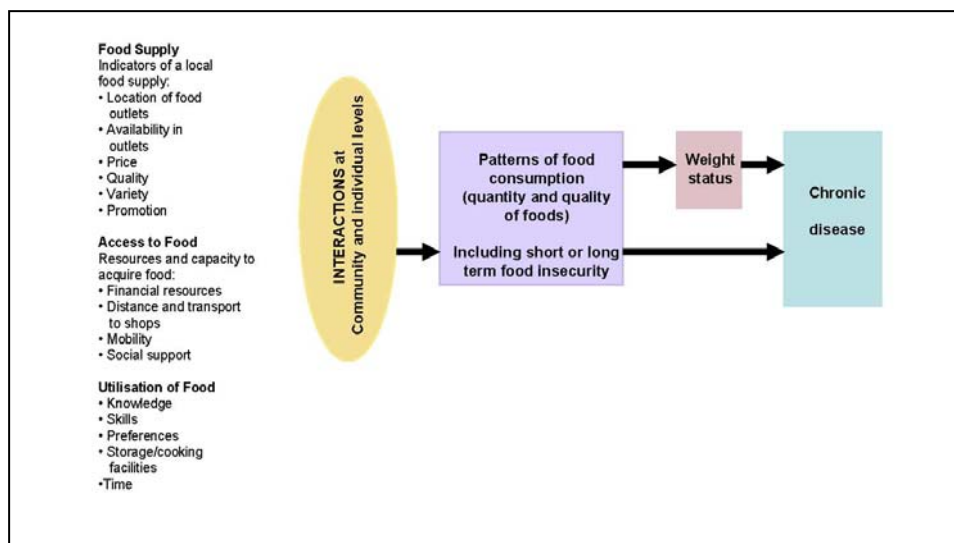


Figure 1: Common local influences on food consumption, food insecurity, weight status and chronic disease

This conceptualisation of common factors influencing food consumption generally, and food insecurity specifically, has implications for designing interventions. Historically, the role of social, economic and political influences on people's diet and nutrition has been underestimated, particularly in nutrition interventions. Interventions to promote healthy eating have tended to focus on improving knowledge, attitudes and skills, and thus on individual factors related to food choices. The effectiveness of health education, however, depends on nutritious food being readily available, accessible and able to be utilised.(1)

Whilst educating consumers about food and nutrition is important, environmental changes can reach and influence large numbers of people and potentially lead to more sustainable health outcomes. This is based on the precept that by designing environments which are conducive to good nutrition, healthy choices will be easier to make.(12) Public health programs aimed at improving the nutrition and eating habits of the population will be compromised if healthy food is not affordable and accessible; hence, there is a need to focus interventions on structural policies aimed at promoting supportive environments.(13)

Diet quality is now considered a contributor to food insecurity in developed countries,(14) and the urban poor are vulnerable in cities around the world.(15) A recent review of the literature on food security suggested, however, that placing food security solely as a poverty-based issue oversimplifies the problem as many families and individuals who experience poverty maintain food security.(11)

Inequities in food availability, access and utilisation

Food availability may be influenced by inequities in the supply of food, which may occur at local and global levels. Factors contributing to this include climate change, agricultural policies, water availability and global trade obligations.

Lack of access to healthy food choices may in turn contribute to inequities in nutrition and differential health risks between population groups in Australia. Access barriers may relate to the availability of food stores in a local area, or limited transport to food retail outlets. Car ownership, public transport and social isolation may be associated with an individual's ability to access food.(16) Access may not be a sole influence, but may interact with other factors such as household income and employment status. Other factors include women working outside the home, "time-poor" working families, smaller households and the aging population, who are frequently less mobile and socially isolated. There is a clear social gradient in those at risk of food insecurity.(17)

In terms of food utilisation, the focus of attention has been on changing eating patterns, particularly increases in consumer preference for convenience foods and eating outside of the home. For example, the most recent data show that consumers spend less time on shopping and meal preparation. The average Australian now spends 42 cents in every food dollar on food prepared outside the home.(18) Variations and inequities in food utilisation specifically are less systematically documented.

There is an emerging body of literature describing food availability and access variables, such as density and location of food stores, product availability and price, portion sizes and exposure to marketing.(16, 19-22) Within this literature there has been particular interest in Australia and internationally, in identifying and analysing the extent of differentials and patterns of inequities in these variables. Some international studies have shown reduced food availability and quality, and increased price of healthier foods in disadvantaged and/or rural areas.(23-25) Others show a predominance of unhealthy (fast) food availability in more disadvantaged areas.(19) A recent multilevel Australian study conducted in Melbourne, found that areas of lower socio-economic status (as determined by the proportion of low income households) were associated with purchase of less healthy food options independent of individual factors indicating socioeconomic position such as education, household income and occupation.(21) Less healthy food options in the study included higher fat varieties of core foods (such as dairy products) and lower fibre varieties of bread and cereal products. Fast foods outlets were also more prevalent. The authors concluded that in their study, food availability, accessibility and affordability may have made the purchase of some food types more difficult in disadvantaged areas.(21) This corresponds to the concept of 'deprivation amplification', where disadvantages arising from poorer quality environments amplify individual disadvantages in ways that are detrimental to health.(26) However, these do not appear to be consistent in their pattern, as there is variation across countries and locations, influenced by factors such as geography, urban planning, population density and transport routes, suggesting that the concept of deprivation amplification may not always hold true, and that local studies on the interactions between individual and environmental factors are necessary to guide policies and programs.(26)

People living at relative disadvantage are known to be less likely to purchase groceries that are consistent with current dietary guidelines, (low in fat, high in fibre, low in salt and low in sugar) and tend to purchase less fruit.(12, 19, 22)

A study of three socially disadvantaged localities in Sydney found that 22% of people reported being food insecure.(27) Of those reporting food insecurity, 26% indicated they could not carry groceries because of reduced mobility due to disability, illness or injury,

whilst 13% reported that the distance to shops was a barrier to accessing food.(27) Further, areas with a low socioeconomic status are characterised by a greater density of fast food and alcohol outlets, and fewer walking tracks.(28)

Food pricing

Recent healthy food basket surveys conducted in a number of Australian states and territories have demonstrated the need to examine the relationship between the cost of food, food consumption and health.(29) A consistent finding is that the cost of a basket has increased substantially for basic healthy foods. High food prices pose a potential barrier to acquiring food for good health among the socioeconomically disadvantaged and other vulnerable groups.

A key finding from the NSW Cancer Council Food Basket Survey in 2006 was that low income families in NSW would have to spend on average 56% of their household budget to maintain a healthy diet; this is compared to 22% for a family on an average income.(30)

In contrast to studies in the UK and USA, the Brisbane Food Study found a strong association between household income and the purchase of fruits and vegetables but little evidence that the purchase of these foods was influenced by neighbourhood level factors.(22, 31) Analysis of the Brisbane Food Study showed that urban areas in Brisbane are not highly differentiated on the basis of availability and price of fruit and vegetables.(32-33) Rural settings in particular are characterised by high food costs and limited availability of healthy food.(34-36)

3. MEASURES OF FOOD SECURITY

As discussed in the PANORG publication *Framework for Monitoring Overweight and Obesity in NSW* (2009), there is an emerging body of work measuring food environments and mapping differential access and availability factors.(37) Similarly, there has been considerable recent attention on indicators for measuring food insecurity, although to date measures of food security have focused on the measurement of the severity and extent of individuals' experiences of food insecurity, which primarily reflects food access, rather than availability or utilisation factors.(11)

Individual and household food insecurity

The individual experience of food insecurity has been the focus of measures used by health and nutrition agencies. Individual food insecurity and hunger are characterised by a particular set of conditions, experiences and behaviours for which indicators have been developed.(38) Severity and prevalence of food insecurity are identified by separate indicators, and generally the more severe levels of food insecurity are less prevalent. The severity of the experience of food insecurity is broadly defined as being food insecure with or without hunger. Food insecurity without hunger is often referred to as mild food insecurity, whilst food insecurity with hunger is referred to as moderate or severe depending on the severity of the experience of food insecurity.(38) People's experience of food insecurity over time can also be described, as cyclical, episodic, prolonged or brief but intense. The coping strategies that households employ to deal with food insecurity may also be measured.

The United States Department of Agriculture (USDA) 'Guide to Measuring Household Food Insecurity' is a frequently used survey which utilises an 18-item validated tool designed to be administered by telephone or face-to-face interview in under four minutes.(38) It contains multiple indicator questions which capture the different degrees of severity of food insecurity.

The USDA tool asks about the following factors:

- Anxiety about insufficiency of the household food budget or food supply
- The experience of running out of food and not having enough money to buy more
- Adjustments to normal food use such as substitution of cheaper foods
- Instances of reduced food intake by adults and the consequences e.g. weight loss and hunger
- Instances of reduced food intake in children and the consequences e.g. weight loss and hunger

Limitations of this tool include the absence of measurement of food insecurity for reasons other than financial constraints, such as limited mobility, illness, mental illness or social isolation.

In Australia, a single item measure of food insecurity has been used in the National Nutrition Survey (39) and the NSW Population Health Survey (40); which measures financial access to food in respondents aged 16 years and over by asking the question "*In the last 12 months, were there any times that you ran out of food and couldn't afford to buy more?*" It has been suggested that this single-item measure is a better indicator of risk of food insecurity rather than a measure of prevalence.(41)

Community-level food insecurity

Community-level reporting of food insecurity is not widely discussed or commonplace. Community-level reporting might involve comparing communities on aggregate indicators of individual food security, as well as indicators such as the rate of use of emergency food aid within defined communities or access to retail food outlets selling a variety of healthy foods at affordable prices.

4. PATTERNS OF FOOD INSECURITY IN AUSTRALIA

Not all Australians have an abundant, affordable, safe and continuous supply of food. Food security in Australia has been measured in four different population surveys. It is likely that these surveys underestimate the true prevalence of food insecurity in Australia, as the most disadvantaged and vulnerable members of a community are usually under-represented in general population surveys.(39)

The Australian National Nutrition Survey (1995)(39) reported that 5.2% of adults (>19 years) experienced food insecurity in the previous 12 months. This figure rose to 9% of all persons in the areas of most disadvantage and 11% of all youth aged 16-24 years. The NSW Population Health Survey (2007), using the same single-item question, found 4% of people aged 16 years or older reported experiencing food insecurity in the previous 12 months.(40) The NSW Population Health Survey: Report on Child Health (2008) found, using the same question, that 5.5% of families with children had experienced food insecurity (42), and the NSW Older People's Health Survey (1999) (43) reported that 2% of older people reported food insecurity in the previous 12 months, with higher rates in Central Sydney (3.5%) and Western Sydney (3%).

Other studies have found higher prevalence rates. A telephone survey of Queensland adults in 1997 reported the prevalence of individual food insecurity as 6.4%, and found food insecurity was highly associated with income levels.(44) A survey undertaken in 2004 in three disadvantaged locations within south western Sydney, which used the more comprehensive 16-item USDA survey module to measure food insecurity, found that 22% of households had experienced food insecurity over the previous 12 months.(27)

Australian studies have found that households with children, single-parent households and people at social or locational disadvantage were more likely to experience food insecurity.(17, 27, 45)

Utilising data derived from the 2004/05 National Health Survey, Temple reports that 40% of the 5% of Australians reporting food insecurity experience it at a severe level.(46) Food insecurity which is characterised by hunger, has been defined by the USDA as either severe or moderate.(38) The majority of people reporting severe or moderate food insecurity also reported suffering from at least one long term health condition (94% of those classified as experiencing severe food insecurity and 89% of those with moderate food insecurity).(46) In addition, 62% of those reporting severe food insecurity were current smokers as were 49% of those reporting moderate food insecurity, compared with 22% of those who were food secure.(46)

Other Australian surveys have found that food insecurity is more prevalent for people with low incomes and those who are without a permanent home.(45) At-risk groups also include people affected by substance abuse or suffering from trauma, physical or mental illness, those with an Aboriginal or migrant background and people who are vulnerable, such as the aged and disabled.(28) A recent study of people living with HIV in Australia found an increased risk of food insecurity, with 52% reporting being food insecure.(47)

Thus, large Australian and NSW population surveys indicate that the overall prevalence of food insecurity across the population is relatively low and concentrated in specific subgroups with limited income and poorer health; however, more in-depth surveys (and measures) indicate that there is a larger proportion of households in disadvantaged areas who experience some food insecurity.

While recognising that individual and household food insecurity in NSW is primarily related to low income and other dimensions of disadvantage, it is important to recognise that not

everyone who is poor or lives in a disadvantaged area, or locations with poorer food access and availability, is food insecure. In fact, much more research is required to understand the specific mix of factors associated with food insecurity for different population groups and for different communities and locations.

5. FOOD INSECURITY, WEIGHT STATUS AND CHRONIC DISEASE RISK

The contribution of nutritional factors to risk of chronic diseases is well documented. However, the specific contribution of food insecurity as one such nutritional factor is not easily investigated, and likely to be confounded with other diet quality and food consumption variables.

The link between food insecurity and weight status, particularly overweight and obesity, is one pathway through which an increased risk of chronic disease could occur. The NSW Centre for Public Health Nutrition (CPHN) *Food Security Options Paper* (1) noted the links between food insecurity and diet quality, as well as the relationship between food insecurity and higher rates of overweight and obesity. Whilst extreme food insecurity, or food insecurity which is associated with hunger, is associated with thinness,(48) it has been proposed that mild or moderate forms of food insecurity (as defined by the USDA(38)) may be associated with overweight and obesity.(49) A recent systematic review of the evidence on the relationship between food security and overweight and obesity, concluded that although the consistency of the association varied across studies, there was a trend towards this relationship.(50) In particular, a number of studies report a higher prevalence of overweight and obesity among women who report food insecurity.(51-53) Further, in an Australian systematic review describing the link between poverty, food insecurity and obesity, Burns (48) found that the association between food insecurity and obesity was stronger in women than in men, with the risk of obesity being 20 to 40% higher in women who reported food insecurity regardless of income, lifestyle behaviours or education.

Whilst the link between food insecurity and overweight and obesity may appear paradoxical, it is likely that people who experience food insecurity also rely on energy-dense, nutrient poor foods, which provide a relatively cheap source of energy.(14, 48) It has been proposed that a cyclic food consumption pattern (involving a food acquisition cycle, (54) where insufficient food at the end of an income period follows a period of over-eating early in the income cycle) may be a contributing factor to overweight and obesity amongst some welfare beneficiaries, such as food stamp recipients in the US.(51)

Overall, food insecurity and obesity are influenced by common factors.(55) For example, both are strongly associated with economic and income related factors, which influence food access, as well as food availability factors. Clearly, however, a large proportion of adults who are overweight and obese and/or have poor diet quality, are not at risk of food insecurity. Further work is required to better understand the connections, and to identify population groups where these connections are most significant, in order to identify appropriate interventions.

6. POTENTIAL INTERVENTION POINTS AND OPTIONS FOR ACTION

Any systematic intervention planning process involves identifying potential intervention points on the basis of an analysis of the problem and the factors contributing to the problem. Thus, as in the CPHN *Food Security Options Paper*,⁽¹⁾ intervention options are identified in relation to food supply, food access, food utilisation and socio-economic factors (see Table 1).

Interventions focused on food supply, access and utilisation in more disadvantaged areas may be quite broad and have potential to affect and benefit whole population groups. Such interventions may in fact contribute to reducing risk of population weight gain, as well as reducing risk for food insecurity due to the common contributing factors, as discussed above. However, depending on the community, there may be only a small number of people that report food insecurity who are affected. Given the possibility that they comprise specific population subgroups, it means that the impact of a broad, non-specific intervention on food insecurity per se may be small and difficult to detect. Given the significance of associations between food insecurity and economic factors (income, employment and home ownership),⁽³⁹⁾ interventions focused on neighbourhood factors as well as specific nutrition programs, may have minimal impact on these groups. In fact, it may be appropriate to frame such broad interventions as food environment and policy projects, and include a broad range of objectives targeting food availability, access and utilisation, rather than focus on food insecurity only. Conversely, there is also scope for highly targeted interventions for subgroups known to be at risk of food insecurity.

As was the case in 2003, when the previous review was undertaken, there is limited information about effective interventions addressing food insecurity and improving food environments in the Australian and NSW contexts. Our analysis of recent projects across Australia suggests that the following strategies are commonly discussed or used:

- Systems for home delivery of fruit and vegetables
- Provision of public /community transport from residential areas to healthy food outlets
- Cooking and budgeting skills programs
- School breakfast programs
- Fruit and vegetable growers markets
- Community food gardens
- Subsidised fruit and vegetable purchase, for example voucher systems

A recent report from New Zealand reviews and describes a similar portfolio of strategies.⁽⁵⁶⁾ While some reports and local case studies provide rich information on implementation processes, there is minimal evidence regarding the impacts and outcomes of different approaches. Thus, it is important to build a stronger evidence base, whilst recognising the importance of context-specific factors. Intervention research and evaluation remains a high priority.

In the absence of evidence, this Discussion Paper recommends rigorous and systematic approaches to investigating and addressing food availability, access and utilisation issues, as well as food insecurity. Table 1 gives Australian examples of actions to investigate and address food availability, access and utilisation at local and community levels. This is not intended as an exhaustive list, but rather as illustrations of approaches; it identifies research questions and topics as well as strategies and actions.

Overarching structures for program development and delivery

Food coalitions and food policy interventions have not been included in Table 1 as they are considered to be overarching structures which foster community and /or cross-agency engagement and support, or provide a basis for the development and delivery of a portfolio of interventions. The specific actions covered by policy or undertaken through a coalition would generally involve a mix of strategies noted in Table 1.

Table 1: Intervention points and actions to address food insecurity

Intervention point: Food supply			
Intervention point	Investigate	Potential action	Local examples*
1. Food aid	Availability of food aid in a local area	Coordination of food aid to address gaps and improve effectiveness of aid delivery	ANGLICARE Emergency food aid(1) Community Cafes eg North Yarra Food Insecurity Demonstration Project(2) Food insecurity in Wagga Wagga(3)
2. Urban planning	Location and distance to different types of food outlets (fast food, supermarkets etc) in a local area	Provide advice to local government regarding zoning, approvals, community transport etc	Food Fairness Illawarra(4) Sydney Food Fairness Alliance(5) SSWAHS Development Application Planning Guideline Document Penrith Food Project(6)
3. Retail food availability, variety and price	Relative costs of healthy/ core food items in different settings (e.g. retail shops, schools, sports) across towns/locations Variations in availability of healthier foods in different locations	Specific promotional/ pricing interventions Advocacy, community awareness	Cancer Council NSW Food Healthy Food Basket survey(7)
4. Availability of local produce	Availability of local produce in specific locations	Farmers markets Support for local food production Local government support for primary production Community gardens Subsidised school fruit	Hawkesbury Harvest(8) Stephanie Alexander School Kitchen Gardens(9)
5. Food product innovation	Analysis of Healthy Kids amber foods; changes in nutritional content and availability of products	Food processing to reformulate products and modify portions and packaging Labelling of total energy in food at point of sale	Heart Foundation Tick Program(10) Healthy Kids School Canteen Association Buyers Guide(11) Heart Foundation 2008 Buyers Guide for managers of remote Indigenous stores and takeaways(12)

*References (where available) are provided for local examples on page 26 of this document

Intervention point: Food access			
Intervention point	Investigate	Potential Action	Local examples*
6. Financial resources	Utilisation of food aid or financial aid (survey of users) Investigate specific associations between demographic factors and food insecurity for different age, gender and household composition groups Money available for food given income, rental costs	Identify/address gaps Advocacy	
7. Travel distance / time to shops / proximity to shops	Investigate locally through analysis of retail mix or geocoding of food outlets Availability/cost of home delivery services Travel methods used by local populations; car and public transport access	Community transport Home delivery schemes	Wagga Retail Food Index study(3) SSWAHS geocoding of density of fast food outlets
8. Setting based programs	Utilisation (survey of users)	Subsidised school fruit programs	Aboriginal Health and Medical Research Council subsidised fruit program: Bulgarr Ngaru AMS Subsidised fruit and vegetable program(13)

* References (where available) are provided for local examples on page 26 of this document

Intervention points: Food utilization			
Intervention point	Investigate	Potential action	Local examples*
9. Knowledge, skills	Extent of people's knowledge about healthier foods and cooking, and interest in 'healthy food fast'	Food education programs focusing on shopping, budgeting and cooking skills	Cancer Council NSW, Eat it to Beat it program(14) South East Sydney Illawarra Health Service cooking program
10. Adequate storage, preparation and cooking facilities in homes	House audits Survey questions	Public housing Advocacy for adequate facilities in public housing Extend food /financial aid programs	Y Hunger(15) Healthabitat (formerly known as Housing for Health)(16)
11. Preferences and the influence of unhealthy food advertising	The role of food preferences and food advertising in food purchases Advocacy approaches to influencing food choice	Social marketing campaigns to influence food preferences and counter unhealthy food advertising	NSW Health Go for 2+5 Campaign(17) NSW Health Good for Kids Drink Water Campaign(18) Cancer Council NSW Pull the Plug Campaign(19) Cancer Council NSW Burgercorp Advocacy Campaign(20)

* References (where available) are provided for local examples on page 26 of this document

7. DISCUSSION

Research gaps

There are many information gaps regarding patterns of food insecurity and interventions to prevent or reduce food insecurity. Specific studies are required to understand who is affected by food insecurity and the main contributing factors to food insecurity at local levels. In addition, more detailed monitoring is required to understand larger population patterns of food insecurity. The development of systematic measures of community level food access and availability is important. An understanding of the consequences of food insecurity on communities and households is under-researched. Much of the current literature is limited to the effect of food insecurity on individuals rather than the impact on families and communities.⁽¹¹⁾ Investigation is required into the links between diet quality and food insecurity, and there is a need to better understand and characterise the influences of food environments in general. Research which describes and analyses food system issues, including availability, price and access factors, at local as well as state and national levels, would be valuable. Finally, it is important to evaluate the impacts of interventions, as currently there is inadequate evidence to determine the effectiveness of different interventions.

Table 1 identifies some potential intervention points to address different dimensions of food insecurity.

Suggestions for practice

In 2003, the Centre for Public Health Nutrition presented some suggestions for practice in addressing food insecurity, which remain highly relevant.⁽¹⁾ Importantly, these suggestions included identifying appropriate partners and determining the role and scope for action that is appropriate for each organisation.

Important additional suggestions include:

- Clarify the focus and objectives, and particularly whether the focus is on factors related to the food environment in a specific location or whether the focus is on specific population groups known to be at risk of, or experiencing, food insecurity.
- Action research: There is value in systematically collecting, documenting and using local information about food environments and/or people experiencing food insecurity. This is important to provide a good basis for local planning, to garner support from partner groups and mobilise action, and to add to the overall knowledge about food system issues and food security patterns in NSW patterns generally.

Policy implications

As illustrated in this paper, food security issues are relevant across a number of discipline and professional groups, including nutrition and public health, welfare and urban planning. There is scope to recognise the common interests and develop a coordinated approach, at local, state and national levels.

Policy support for action research, as described above, is likely to contribute to the development of this field of work and address health inequities.

From a nutrition and public health perspective, food security can be conceptualised as one type of outcome that derives from the interplay of multiple factors within the food, social and economic /income systems. Individual and household food security is increasingly vulnerable to global environmental problems, as food supply becomes more global and climate and environmental problems create price volatility. Thus, while food systems and food security can be neatly conceptualised and examined at various levels, from local communities to global systems, the levels intersect. There remain important public policy issues that need to be addressed at local, state, national and global levels. The recommendations of the National Preventative Health Taskforce for a National Food and Nutrition Framework (3) provide an opportunity for such policy approaches.

8. POSTSCRIPT ON OUR ROLE

PANORG, Heart Foundation NSW and Cancer Council NSW have opportunities to collaborate with both peak bodies and stakeholders at a local community level. Our organisations can pursue research and action in two complementary directions:

1. broad population and community based 'food system' initiatives to investigate and improve food availability, access and utilisation opportunities relating to food systems; and
2. targeted initiatives to investigate and address specific problems of food insecurity in communities and affected population groups.

Population approach: addressing local food systems

- Collaborating with local organisations to gather information on local food systems, such as proximity and density of food outlets, as well as barriers to access in specific communities
- Monitoring and investigating patterns in food supply, prices and access across communities and regions
- Developing and evaluating community-based interventions to improve food availability, access and utilisation
- Contributing to the body of evidence regarding local food systems

Targeted approaches: addressing food insecurity

- Monitoring and investigating patterns in food insecurity across population subgroups
- Collaborating with local organisations to gather information on patterns of food insecurity in specific communities
- Collaborating with other agencies in evaluating the effectiveness of interventions to reduce food insecurity

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