

**Food for thought:
The governance of garden networks for building
local food security and community-based
disaster resilience**

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Abstract

Food supply chains reach across the globe and rely on complex and interdependent infrastructures. The vast majority of Australia's food supply infrastructure is privately owned and operated for commercial purposes. The complex network of producers, processors, manufacturers, distributors and retailers of food depend upon the ability to move freight long distances. This is utterly dependent not only on the vast network of transport infrastructure but also on uninterrupted access to cheap oil. Food supply chain interruptions due to severe weather events have become an emergent issue in terms of understanding our vulnerability to food insecurity. The Australian government recognises that economic costs of climate change will come from floods, droughts, heatwaves and other extreme weather events. Supermarkets are the main distribution points for emergency re-supply, however, they are not immune to the impacts of these weather events. Complicating things further, the growth in urban populations globally is identified as a key trend in urban disaster risk management. South-East Queensland has one of the most rapidly growing urban populations in Australia. The vast majority of this urban population will continue to source its food from supermarkets in times of crisis. The synergies between all these influences may expose our collective vulnerability to unexpected food insecurity. Policies that engage with interconnected systems are caught up in the ambiguity of their causal webs, therefore mistakes are very costly.

In recognition of these increasing complexities, the theme of building resilience to disasters is currently going through a global policy shift. Disaster risk management in Australia and Queensland recognises that communities should not become too reliant on re-supply responses, and should make every effort to become self-sufficient in all their needs in case they become vulnerable. The National Strategy for Disaster Resilience (NSDR) aims to build a whole-of-nation approach to disasters that empowers the community to share responsibility for their own resilience through sustained behavioural changes (COAG, 2011). The NSDR identifies that more focus is needed on action-based resilience planning to strengthen local capacity and capability, with greater emphasis on adaptive learning, social support systems and strong social networks.

To this end, international and national disaster resilience literature and policies have called for better preparation for disaster events, particularly at the community level.

Community and school gardens have a long history of providing direct and immediate access to food to avert and alleviate widespread urban hunger during periods of crisis. Some notable examples include: the First and Second World Wars, the 1930s depression, and other precedents such as Cuba's 26,000 self-provision gardens that addressed acute food scarcity problems when Soviet aid and trade were curtailed in 1989. Since then, the United Nations have promoted the functions of community and school gardens globally as viable decentralised food options.

This PhD thesis develops a governance structure that can: 1) enable policy to integrate agendas across and between government departments for building food-related disaster resilience; and 2) democratically manage locally-driven food garden initiatives. This thesis reviews and analyses the networks of relationships necessary for community and school gardens to function as hubs for building social resilience and food procurement. It employs a thematic analysis of both the reviewed and analysed literature and newly collected original interview data to produce field-based ideas for further knowledge-development and policy formulation. Contributions to various agendas that necessitate the governance of networks are discussed, such as: developing adaptive capacity to climate changes; the reduction of carbon emissions; the promotion of healthy lifestyles; the promotion of local food procurement and food literacy; and encouraging communities to share responsibility for their own resilience. The contributions to Habermas's Theory of Communicative Action are explored.

This thesis hypothesises that food insecurity can unexpectedly spike due to the combination of: a rapidly growing urban population; increasing oil demand to maintain the current food supply chain model; and climate change impacts on the critical infrastructure needed for this model to function. A re-thinking of governance systems is needed because they currently fail to address this problem. This re-thinking requires a critical analysis of the contributions that building social resilience and locally-driven garden contexts hold for alternative ways of viewing the food supply chain. Prospects for building social resilience and locally-driven garden contexts require attention so that more options for food supply can be supported.

Statement of Originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

(Signed) _____

Kimberley Miscamble Reis

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Acronyms

ACF	Australian Conservation Foundation
ACFCGN	Australian City Farms and Community Gardens Network
ACOSS	Australian Council of Social Services
AFSA	Australian Food Sovereignty Alliance
APSC	Australian Public Service Commission
ARC	Australian Red Cross
ARIES	Australian Research Institute in Education for Sustainability
BCC	Brisbane City Council
BFA	Biological Farmers' Australia
CCA	Climate Change Adaptation
CoA	Commonwealth of Australia
COAG	Council of Australian Governments
CSA	Community-Supported Agriculture
DAFF	Department of Agriculture, Fisheries and Forestry (Australia)
DEEDI	Department of Employment, Economic Development and Innovation (Queensland)
DEH	Department of Environment and Heritage (Australia)
DERM	Department of Environment and Resource Management (Queensland)
DET	Department of Education and Training (Queensland)
DEWHA	Department of the Environment, Water, Heritage and the Arts (Australia)
DIP	Department of Infrastructure and Planning (Queensland)
DRR	Disaster Risk Reduction
EMA	Emergency Management Australia
FAO	Food and Agriculture Organisation (United Nations)
FaHCSIA	Department of Families, Housing, Community Services and Indigenous Affairs (Australia)
FCSG	Food Chain Sector Group (operating under the TISN)
GFC	Global financial Crisis
GSA	Government of South Australia
GWA	Government of Western Australia
IFRC	International Federation of Red Cross and Red Crescent Societies
IPCC	Intergovernmental Panel on Climate Change

ISDR	International Strategy for Disaster Resilience
LAL	Landcare Australia Limited
LGAQ	Local Government Association of Queensland
MCPEM-EM	Ministerial Council for Police and Emergency Management - Emergency Management (Australia)
MoU	Memorandum of Understanding
NCEPH	National Centre for Epidemiology and Population Health
NCSA	National Conservation Strategy for Australia 1984-85
NEMC	National Emergency Management Committee
NERAG	National Emergency Risk Assessment Guidelines
NGOs	Non-Government Organisations
NSCF	Northey Street City Farm
NSDR	National Strategy for Disaster Resilience
PHAA	Public Health Association Australia
PMSEIC	Prime Minister's Science, Engineering and Innovation Council (Australia)
PPRR	Prevent-Prepare-Respond-Recover
QESSI	Queensland Environmentally Sustainable Schools Initiative
QFCI	Queensland Floods Commission of Inquiry
QRA	Queensland Reconstruction Authority
QSDMP	Queensland State Disaster Management Plan
QWaLC	Queensland Water and Land Carers Incorporated
SDMG	State Disaster Management Group (Queensland)
SEQRP	South East Queensland Regional Plan 2009-2031
SVA	Social Ventures Australia
TFSC	Tasmanian Food Security Council
TISN	Trusted Information Sharing Network
VBRC	Victorian Bushfires Royal Commission
UKCO	United Kingdom Cabinet Office
UN	United Nations

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Howes, M., Grant-Smith, D., Bosomworth, K., Reis, K., Tangney, P., Heazle, M., McEvoy, D., and Burton, P (2012b) *The challenge of integrating climate change adaptation and disaster risk management: Lessons from bushfire and flood inquiries in an Australian context*, Urban Research Program, Issues Paper 17, Brisbane, Australia: Griffith University.

Forthcoming articles

Howes, M., Grant-Smith, D., Reis, K., Tangney, P., Heazle, M., Burton, P., Bosomworth, K., and McEvoy, D (2012) "What the 2009 Victorian bushfires, 2011 Perth Hills bushfires and 2011 Brisbane floods can teach us about integrating disaster risk management and climate change adaptation policies," *Australian Journal of Emergency Management*. (Submitted June 2012).

Howes, M., Tangney, P., Reis, K., Grant-Smith, D., Heazle, M., Bosomworth, K and Burton, P (2013) "Towards networked governance: Improving interagency communication and collaboration for disaster risk management and climate change adaptation," *Journal of Environmental Planning and Management*.(Submitted June 2013).

Reis, K., Grant-Smith, D., Burton, P., Howes, M., Heazle, M., Tangney, P and Bosomworth, K (2013) "Harnessing the complexity of community: Practitioner perceptions of pathways to community resilience in Australian disaster risk management," *Disasters*. (Submitted May 2013).

Chapter 1: Introduction to this thesis

As the world's population grows, climate changes impact on agriculture, and extreme weather events increase, food security will become an ever more pressing issue for governments, businesses and communities. The Australian Government is concerned about urban populations that are dependent on emergency food re-supply and the Council of Australian Governments (COAG) has sought to make communities more self-reliant. Building resilience within communities is now a key priority for disaster risk management, however, the idea of enhancing food security and social resilience through local food initiatives is currently not acknowledged. Even less visible is the understanding that community and school gardens have provided food during times of economic and environmental upheaval over 100 years. The prospects for building social resilience and enhancing food security through locally-controlled gardens require attention so that more options for food supply can be identified.

The research problem addressed by this thesis is that food-related disaster events are now complicated by the interplay between the needs of a rapidly growing urban population, increasing oil demand to maintain the current food supply chain model, and climate change impacts on the critical infrastructure needed for this model to function. The synergies between these influences may expose the collective vulnerability to unexpected food insecurity. Governance failures to anticipate these complications and their uncertainties can be understood as yet another potential disaster event. Prospects for building social resilience and locally-driven garden contexts require attention so that more options for food supply can be supported.

This thesis reviews and analyses the networks and relationships necessary for community and school gardens to function as hubs for building social resilience and food procurement. It employs thematic analysis of the literature and interview data to produce field-based ideas for further knowledge-development and policy formulation. Contributions to various agendas which necessitate the governance of networks are discussed, such as: developing adaptive capacity to climate changes; reduction of carbon emissions; promotion of healthy lifestyles; promotion of local food procurement and food literacy; and encouraging communities to share responsibility for their own resilience.

Research aims and questions

As Australia's leading policy in building disaster resilience, the *National strategy for Disaster Resilience* (NSDR) priority action for leading change and coordinating effort will be methodically applied to this review and analysis to determine the challenges and opportunities at hand. More specifically, the three priority outcomes for leading change and coordinating effort will be applied to each body of literature. They are (COAG, 2011: 7):

1. Understanding risk

Leaders from all levels of government, business, the not-for-profit sector and communities strive to recognise and understand the risks disasters pose to their own and their community's interests. They take responsibility for mitigating these risks and apply the concept of disaster resilience to strategic planning processes, and to those roles where they can exercise influence.

2. Support community-based resilience efforts

Governments help business, not-for-profit and community leaders by preparing and providing guidelines, information and other resources to support community efforts in resilience-based planning, including resilience-building activities, disaster risk management, stakeholder and community engagement, disaster response and recovery and capability development.

3. Share responsibility through partnerships and networks

Leaders drive development of partnerships and networks to build resilience at the government, business, neighbourhood, and community levels. These partnerships are based on a sense of shared responsibility, and an acknowledgement of the need for coordinated planning and response.

Therefore, the main research question addressed by this thesis is:

Using the three NSDR criteria for leading change and coordinating effort, can opportunities for the democratic management of the networks necessary for community and school gardens to function as hubs for building social resilience and food security be facilitated?

Outline of thesis contents

Chapter 2: Methods

Chapter 2 will outline the research problem, hypothesis, aims and questions in more detail. The research strategy utilises the case study approach which highlights three primary steps of: 1) theorisation; 2) data collection; and 3) thematic data analysis. Theorisation serves to clarify the hypothesis by identification of the common ground found within the review and analysis of the literature, rival theories or hypotheses and an articulation of the broader range of theories providing a vehicle for generalising the results of the evaluation. Habermas's Theory of Communicative Action is

employed to identify how various worldviews may either seek new synergies or resist them. This theory also highlights the possibilities for speech forums to settle negotiations between diverse worldviews and find consensus. Second, data collection involves: document searches; purposive sample selections; initial organisation of interviews and snowball sampling; formulation of interview questions; conducting the interviews; the pilot test and revisions made; and transcription of taped interview data into written protocols. Finally, data analysis outlines the eight step thematic analysis process employed. Three different forms of 'passing the data' and then writing up the integrated results and analysis chapters are outlined.

Chapter 3: Understanding the risks to food security

Chapter 3 will begin with an introduction to the themes of vulnerability, hazard and risks in the literature. The role of risk perceptions is discussed as a valid approach for capturing how risk is understood and framed within social contexts. Then the agreements and disputes in understanding risks to food security are addressed under three key themes and issues. Theme 1 focuses on the call for food that is nutritionally adequate in terms of quantity and quality and it is acceptable within the given culture. Risk perceptions highlight disparate worldviews and include viewpoints from government and food industry alliances, food regime analyses of industrialised food and viewpoints from the ethical consumerism movement. The associated issue looks at tensions over who should be included as joint gate-keepers of food acceptability.

Theme 2 looks at the requirement that food is available at all times. In terms of the government/industry alliances, the viewpoints considered include the priorities of the Department of Agriculture, Fisheries and Forestry (DAFF) *National Food Policy Working Group*, and the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) *Expert Working Group* (2010). Other risk perceptions include the vulnerability of supermarkets as the outlets of emergency re-supply and the differing perspectives of the food sovereignty movement. The associated issue again highlights tensions over who should be included as joint gate-keepers of food availability.

Theme 3 explores in two parts the requirement that all persons must have means of access to food. First, the role of safety-net measures in the consideration of socio-

economic dynamics and the cost of food are addressed. Critiques include risk perceptions about supermarkets as gate-keepers of food affordability and the roles of poverty and food affordability. The issue involves tensions over who should be included as joint gate-keepers of food access for the socio-economically disadvantaged. Second, the planning implications for food location and forms of mobility are assessed. Risk perceptions include climate change events and our dependence on the food production industry, critical infrastructure interruptions and vulnerabilities due to our rapidly increasing urban population dependency on uninterrupted food supply. Then the issue involves who should be included as joint gate-keepers of food access in terms of planning for food location and mobility. The prospect of Habermas's call for communicative action by intentionally bringing worldviews together is introduced. Finally, concluding remarks are made.

Chapter 4: Social resilience-building activities and the role of government support

Chapter 4 reviews and analyses the literature on social resilience and the widening scope of resilience-building activities in two themes. First, Theme 1 examines the meaning and scope of resilience-building activities in terms of abilities for 'resistance' and 'recovery'. The key issue centres on resilience-based planning which is focussed on organisational resilience to the exclusion of community-based resilience activities. The implications for integrating community resilience into the Prevent-Prepare-Respond-Recover (PPRR) model (SDMG, 2010b) and broadening the scope of resilience are discussed. This includes the contribution of Habermas's theory of communicative action in permitting people to reach understanding among themselves and inform their political orientations.

Theme 2 explores the meaning and scope of resilience-building activities in terms of 'betterment', or the ability to 'bounce-back-better'. The theme of betterment given the pressures of climate impacts highlights the significance of anchoring capabilities within communities to enhance their own self-sufficiency. Four sub-themes in terms of capability development are considered here including the requirements for: 1) self-reliance and self-organisation; 2) social inclusiveness and ties; 3) learning and adaptation; and 4) empowerment and participation. Associated issues involve resilience-based planning inclusive of community engagement where communities are willing to share in taking responsibility for their own resilience. Implications for defining the parameters of 'resilience', 'community' and 'community engagement' are

discussed. In terms of speech forums, providing opportunities to talk among each other and see the differences and commonalities of worldviews is flagged as it allows for evolving views to emerge, be reflected upon and made visible. Finally, concluding remarks are offered.

Chapter 5: Community and school gardens as sites for building social resilience and food security

Chapter 5 provides a review and analysis of the literature on community and school garden contributions to sharing responsibility for building local food procurement and social resilience. First, the social resilience criteria for building social inclusion and community empowerment are explored. Social inclusiveness will cover the themes of empowerment and participation and then contributions to forming democratic spaces and social ties are explored. The potential for clashes in worldviews between and within garden groups will then highlight the weaknesses in the main argument that gardens can function as hubs for building social inclusiveness.

This chapter will then outline the precedents in self-organised and coordinated planning of community and school gardens in times of hardship. The contributions of gardens to the improvement of neighbourhoods and their safety are discussed. The relationships between garden groups with members of the broader policy communities will demonstrate the potential for clashes in worldviews. This adds another potential weakness to the main argument that gardens can function as hubs for building resilience and food security.

Finally, emergent policy connections in the areas of health and education are outlined as avenues for learning and adaptation. The role of gardens in providing nutrition and therefore aiding in the reduction of obesity is introduced. Building community health and wellbeing and then the role of education are also discussed as emergent policy areas. This chapter concludes that integrating the multiple worldviews into coordinated action is arguably complicated as the benefits that community and school gardens hold for building resilience and food security cannot be seen as positive in all cases. Effective communicative action will require an understanding of how networks can be governed to deliver shared responsibility and coordinated action.

Chapter 6: Framing the implications for Network Governance

Chapter 6 reviews and analyses the literature on the governance implications for networks which range across levels of government, industry sectors, Non-government Organisations (NGOs), community and voluntary sectors, and lobby and interest groups. The first theme examines the broad field of Network Governance. A differentiation is made between Policy Networks and Governance Networks as they both fit under the broad umbrella of Network Governance. Establishing a clear conceptual framework between the two is done by looking at their historical contexts, network focus and policy alignment and worldviews. This will facilitate a clearer critique of the implications for policy options.

The second theme frames Network Governance as a form of policy 'holism' and 'integration'. The *National Strategy for Disaster Resilience* (NSDR) aims for a whole-of-government approach to disaster resilience. Governance structures are therefore needed to enable policy to integrate agendas across and between government departments for building food-related disaster resilience and democratically manage locally-driven food garden initiatives. However, this is also subject to four measures of network performance. First, the issue of inclusiveness within the network is examined. The idea of formalising informal networks is discussed with reference to the Australian Landcare project, land-use planning, and the Local Government Association of Queensland (LGAQ) relationships with community health and disaster resilience agendas. The prospects for demonstration projects are discussed in terms of incremental and iterative approaches and policy learning. Second, in terms of public participation and involvement, Governance Networks need to be ineffective in producing tangible outcomes (and this is not always the case). Third, Policy Networks are discussed in terms of the issues with transparency and accountability for their actions. Finally, meta-governance issues highlight the complicating role of power and politics. The implications of these four issues for communicative action are discussed.

Chapter 7: A life-world of complex and integrated risk perceptions: How food security is framed by practitioners

The life-world is the perceived inter-dependence between one's 'life' and the 'world'. The practitioner's life-worlds reveal perceptions of food security and its risks that are complex and integrated. Chapter 7 integrates the results of the interviews from a

range of participants across local government, community groups, schooling and education bodies, and disaster resilience organisations with themes reviewed and analysed in the literature in Chapter 3. By synthesising Habermas's life-world ontology with practitioner's risk perceptions and the literature, this thesis provides an original contribution to the NSDR criteria for leading change and coordinating effort for disaster resilience.

All interviewees were asked the questions: 1) *What do you understand by the term food security?*; And 2) *What do you think could be risks to food security?* These questions revealed six themes of importance in terms of how they perceived the risks to food security: 1) urban population growth pressures and dependency on cheap oil and long-distance transport; 2) uncertainties and complexities of climate changes; 3) critical infrastructure interruptions due to severe weather events; 4) human and environmental health impacts from industrialised food systems; 5) centralised control of food; and 6) lack of knowledge and control at the community level.

Chapter 8: The problem contains the solution: Practitioner's lived experiences of building social resilience

Ideologies are derived from the lived experiences that generate diverse life-worlds. The practitioner's lived experiences of building social resilience demonstrates that the problems to be addressed inherently contain their own solutions. Chapter 8 integrates the results of interview data from the same interviewees with themes reviewed and analysed in the literature in Chapter 4. It provides an original contribution to the NSDR criteria for leading change and coordinating effort by revealing how resilience-building activities are understood both in the literature and by the lived experiences of the practitioners engaged with various forms of social resilience policies.

All interviewees were asked the questions: 1) *What does social resilience mean to you?* And 2) *Does building social resilience relate to food security and climate change? If so, then how?* Five themes were generated from the analysis of the interviewee reports: 1) the problem contains the solution; 2) informal networks are key features of self-reliance and self-organisation; 3) helping out and looking out for each other are key features of social inclusiveness and ties; 4) food literacy and up-skilling are key features of capacity building, learning and adaptation; and 5)

deliberative participation is a key feature of community empowerment to share responsibility.

Chapter 9: Worldviews in tension: Practitioner accounts of the legitimacy of garden hubs

Practitioner accounts of the legitimacy of community and school gardens as hubs for building social resilience and food security demonstrates tensions in worldviews. Worldviews are points-of-view about why things are happening and what is considered relevant. These worldviews are underpinned by the lived experiences as expressed by the interviewed practitioners. Chapter 9 integrates the results of interview data from the same interviewees with themes reviewed and analysed in the literature in Chapter 5. It provides an original contribution to the NSDR criteria for leading change and coordinating effort by revealing how the worldviews that underpin community and school garden networks and their various partnerships can either facilitate or fail to produce shared responsibilities.

First, interviewees were asked: *The draft of the 'new' Brisbane City Plan proposes 'urban villages', where everything is within walking distance. What do you think about this?* Theme 1 outlines the agreement that local village hubs with local food gardens and initiatives serve to empower shared responsibility at the community level. The issues discussed explored a sense of idealism about the notion of local food hubs; whether local businesses can be economically competitive with the big brands; the pressures of land-use development; and the food scale required for widespread food security.

Second, interviewees were asked: *If community and school gardens were part of 'urban villages', how might they contribute to building social resilience?* Theme 2 presents the agreements on community and school gardens as hubs for empowering social inclusion and participation. It further elaborates on the role that inclusion of various groups play for creating social support structures and how community and school gardens function as hubs for creating sense of community. The key issue highlights that stifling rules and some concerns about individual safety can be problematic for social connectedness.

Finally, interviewees were asked: *If community and school gardens were part of 'urban villages', how might they contribute to building food security?* Theme 3

outlines the agreement that community and school gardens are hubs for empowering participation in local food knowledge and literacy. However, issues include the presence of public liability arrangements, funding and school curriculum hurdles.

Chapter 10: Mobilising synergies and shared control: Practitioner's views for governing complexity

Chapter 10 integrates the results of interview data from the same interviewees with themes reviewed and analysed in the literature in Chapter 6. It considers all of the three NSDR criteria for leading change and coordinating effort to reveal how Network Governance is understood both in the literature and by the interviewees. This provides an original contribution to discerning appropriate actions for the NSDR by outlining practitioner's views for governing the complexities discussed throughout this thesis. It demonstrates the importance of mobilising synergies that can be found between various worldviews to produce a culture of shared control.

The interviewees were asked: *What should business do about these issues?* Theme 1 answers this question in two parts. First, interviewees agreed that large businesses need to be more socially responsible in their approach to food security. Second, interviewees agreed that partnerships with local businesses are important for maintaining local economies and local food.

Second, interviewees were asked: *What should communities do about these issues?* Theme 2 outlines the various forms of community involvement which provide a range of opportunities to participate. Communities were also found to provide demonstrations of community-based resilience projects.

Finally, interviewees were asked: *What should government do about these issues?* Theme 3 outlines four government portfolios of interest. First, local government planning is discussed in terms of: facilitating shared control and responsibility with those who want it; changing the rules and removing the barriers; importance of community awareness raising; community consultation and engagement policy; trialling neighbourhood parliament; participatory budgeting; local food procurement policy; and using demonstrations to inform council planning. Second, community health is examined in terms of the usefulness of demonstration projects and the partnership approach. Third, Education Queensland's role in formalising and integrating outdoor learning into plans and curriculum is outlined. Fourth, the

implications for disaster resilience relates to the possibilities for local contingency food plans for disasters. The issues with these government actions include: a return to core business by the Queensland State government; the role of the mainstream media; changes to financial priorities; and addressing a lack of commitment to long-term community empowerment. Finally, Chapter 11 will provide concluding remarks on the key findings of this thesis and its original contributions.

Chapter 2: Methods

This chapter clarifies the research methods used and the reasoning behind them. The word 'method' is derived from Latin meaning a procedure, or systematic arrangement of a plan. Methodology then is the logic or reasoning that directs this procedure (Delbridge and Bernard, 2001: 718). This chapter will outline the methodology of this thesis. First, the research problem, hypothesis, aim and questions are outlined. The overall research strategy is a case study approach. The chapter then covers: 1) the theorisation and broader implications of this research; 2) data collection; and 3) data analysis.

Research problem, hypothesis, aim and questions

Research Problem

The research problem addressed by this thesis is that food-related disaster events are now complicated by the interplay between: the needs of a rapidly growing urban population; increasing oil demand to maintain our current food supply chain model; and climate change impacts on the critical infrastructure needed for this model to function. The synergies between these influences may expose our collective vulnerability to unexpected food insecurity. Governance failures to anticipate these complications and their uncertainties can be understood as a further complicating factor. By way of contrast, it is argued that locally-driven garden initiatives offer potential pathways for building food-related social resilience.

The governance implications of these changes require the understanding and management of contextual conditions inherent in complex situations. To use the definitions offered by Delbridge and Bernard (1998: 484): governance relates to the "exercise of authority" and control; government refers to the "form or system of rule"; and governing involves the right to exercise influence and authority. The Network Governance model strives to address complexities inherent within emergent policy areas such as social inclusion, environmental sustainability or neighbourhood regeneration (Blanco *et al*, 2011). The need for collaborative relationships (Althaus *et al*, 2007; Perri 6 *et al*, 2006) is important due to the challenges of tackling of wicked or intractable problems (Rittel and Webber, 1973; Althaus *et al*, 2007; Bevir, 2010; Christensen, 1999; Clarke and Stewart, 1997; Rhodes, 1997). These challenges can be framed as "messy problems" which may require "messy solutions" (Rhodes, 1997:

xv) and are influenced by the dynamics of increasing social complexity, dynamism and diversity (Kooiman, 2003). Network Governance calls for more integrative approaches given the recognition of fragmented organisational frameworks (Rhodes, 1997 and 2007) and the social demands for an increased voice in decision-making and disenchantment with representative governance (Dalton, 2005).

Research Hypothesis

Yin (1992: 134) advocates that the initial research design should develop a “hypothesised understanding of the programme being evaluated”. The hypothesis of this thesis is that food insecurity can unexpectedly spike due to the combination of: a rapidly growing urban population; increasing oil demand to maintain our current food supply chain model; and climate change impacts on the critical infrastructure needed for this model to function. Further, a re-thinking of governance systems is needed because they have failed to address this problem. This re-thinking requires a critical analysis of the contributions that building social resilience through locally-driven garden networks holds for alternative forms of food provision.

Research Aim

In recognition of these increasing complexities, the theme of building resilience to disasters is currently going through a global policy shift. Australia’s national response, the *National Strategy for Disaster Resilience: Building our nation’s resilience to disasters* (NSDR) was adopted by the Council of Australian Governments (COAG) in 2011. This thesis reviews and analyses the democratic management of the networks and relationships necessary for community and school gardens to function as hubs for building social resilience and food security in times of crisis. The NSDR priority action for leading change and coordinating effort for disaster resilience will be methodically applied to this review and analysis to determine the challenges and opportunities at hand. Leading change and coordinating effort for disaster resilience has within it, three priority outcomes which will be applied to each body of literature reviewed (COAG, 2011: 7):

1. Understanding risk

Leaders from all levels of government, business, the not-for-profit sector and communities strive to recognise and understand the risks disasters pose to their own and their community’s interests. They take responsibility for mitigating these risks and apply the concept of disaster resilience to strategic planning processes, and to those roles where they can exercise influence;

2. Support community-based resilience efforts

Governments help business, not-for-profit and community leaders by preparing and providing guidelines, information and other resources to support community efforts in resilience-based planning, including resilience-building activities, disaster risk management, stakeholder and community engagement, disaster response and recovery and capability development; and

3. Share responsibility through partnerships and networks

Leaders drive development of partnerships and networks to build resilience at the government, business, neighbourhood, and community levels. These partnerships are based on a sense of shared responsibility and an acknowledgement of the need for coordinated planning and response.

Much has been written on the meaning of resilience and how this relates to social and disaster contexts. There are agreements, but many disputes over the utility of the term. In spite of the disputes, the NSDR has stated that disaster risk management plans should be “resilience-based, to build disaster resilience within communities over time” (COAG, 2011: 4, 5). In line with this, the NSDR puts forward the question: what could resilience within communities look like? Posing this as a question rather than providing a neat definition invites people to share in defining what resilience could mean for them. This questioning approach facilitates a shift in thinking about disasters from an organisational response focus to a shared responsibility with the community. According to various policy innovations, this particular focus on the community level for building disaster resilience draws increased attention on achieving sustained behavioural change (see Appendix 1). Because of the widespread and pervasive nature of critical infrastructure dependencies, and their associated vulnerabilities, both international and national disaster resilience literature and policies have called for better preparation for disaster events, particularly at the community level. For example, the consultation findings from the United Kingdom Cabinet Office (UKCO) (2010) *Draft strategic national framework on community resilience, Consultation document* identifies “concerns about a culture in which people expect immediate support and assistance whatever the emergency and the impact on them” (UKCO, 2010: 13). It is recognised widespread dependency on emergency is unsustainable and the UKCO advises the need for a “shared framework” to counteract it (UKCO, 2010: 4). The NSDR refer to this policy agenda for community involvement as a “shared responsibility” (COAG, 2011: 5). To this end, the NSDR state that (COAG, 2011: 3):

This new focus on resilience calls for an integrated, whole-of-nation effort encompassing enhance partnerships, shared responsibility, a better understand of the risk environment and disaster impacts, and an adaptive and empowered community that acts on this understanding.

Research Questions

The main research question of this thesis is: *Using the three NSDR criteria for leading change and coordinating effort, can opportunities for the democratic management of the networks necessary for community and school gardens to function as hubs for building social resilience and food security be facilitated?* This question requires attention to four different areas of research. As recommended by Yin (1992: 134) sub-research questions serve to progressively scaffold the main question and provide explicit attention to the various contextual conditions that need to be understood. By applying the three criteria methodically to each main body of literature and the associated interview findings, Yin (1992: 135) advises that the “programme logic model” is placed throughout the body of the thesis, and the causal flows of the programme may be traced. This establishes a “chain of evidence” (Yin, 2009: 42). The sub-research questions listed below seek to progressively and systematically address the main research aim of this thesis and the three NSDR criteria. As stated, this thesis examines four main bodies of literature and interview data, with each addressing a specific sub-research aim. These are:

1. Food security and understanding risk

Sub-research aim 1 is: Using the NSDR criteria for leading change and coordinating effort for understanding risk analyse the reviewed literature and interview data to reveal how food security and its risks are understood. Sub-research question 1 is: *What is food security and how can we understand the risks that work against its achievement?*

2. Social resilience-building activities and government support

Sub-research aim 2 is: Using the NSDR criteria for leading change and coordinating effort for government support of community-based resilience efforts analyse the reviewed literature and interview data to reveal how social resilience is understood and how it relates to food security and climate changes. Sub-research question 2 is: *What is social resilience and how can it be applied to the problems of food security and climate change?*

3. Community and school garden contributions to building social resilience and food security

Sub-research aim 3 is: Using the NSDR criteria for leading change and coordinating effort for shared responsibilities through partnerships and networks analyse the

reviewed literature and interview data to reveal how community and school gardens contribute to building social resilience and food security. Sub-research question 3 is: *How do community and school gardens contribute to building a community capacity for social resilience and food security?*

4. Network Governance implications

Sub-research aim 4 is: Analyse the reviewed literature and interview data to reveal how government, business and communities engage in the management of the necessary networks. All three criteria: understanding risk; shared responsibilities through partnerships and networks; and support of community-based resilience efforts are considered. Sub-research question 4 is: *What governance opportunities and challenges are posed for the democratic management of networks and relationships?*

Research Strategy: Case study approach

The research strategy of this thesis will utilise the case study approach. It examines cases in the literature and interviews which are illustrative of the challenges and opportunities for building disaster resilience as they apply to: 1) food security and understanding risk; 2) social resilience-building activities and government support; 3) community and school garden contributions to building social resilience and food security; and 4) policy implications for the governance of networks. How these cases are applied to the theorisation, data collection and data analysis are outlined next.

Theorisation: Habermas's Theory of Communicative Action

The concept of communicative action is based on speech forums as praxis for consensus and negotiation whereby views can be modified leading to collective action (Habermas, 1987). Praxis is about application, putting theory into practice. Habermas (1974: 3) argued that social theory which is monological rather than dialogical "is no longer capable of essentially relating to praxis, but merely to goal-directed purposive action guided by social-technical recommendations". The practical relevance of Habermas's Theory of Communicative Action is that it can shed light on the role of practical discourses and therefore contribute to the "participant's efforts to reach understanding among themselves" (Parkin, 1996: 419). As people talk among each other, they see differences and commonalities that in turn, help them to arrive at mutual understandings and common interests. Habermas (1992: 89) asserts that:

When someone correctly interprets an unclear situation, he or she not only has the success of advancing just a bit towards the truth, but may also influence a self-understanding which in the long run helps determine political orientations.

The ideal speech forum is praxis for setting up a mechanism for consensus among diverse viewpoints. This has found relevance in the area of cooperative behaviour in environmental planning (Ali, 2003) given that complex circumstances entail public deliberations (Bohman, 1996) and planning practice needs to integrate the learning from those processes (Hoch, 2007). The significance of Habermas's work is that it permits us to "assess what social actors do in variously structured situations" (Forester, 1985: xviii). Parkin (1996: 423) argues that this theory "sensitises us to the extraordinary work accomplished through ordinary communicative interaction, such as the establishing and reproducing of patterns of belief, of consent and legitimacy, of status and identity, and of perception". The resulting ideologies and discourses are derived from lived experiences and further generate diverse life-worlds (Habermas, 1987) which take place within a "complex and differentiated society" (Welton, 1995: 136). The life-world is therefore a complex and integrated dynamic of where we live and have our experiences. According to Berndtsson *et al*, (2007: 259)

The life-world ... is in its ontological sense the pre-reflective ground for our being in the world, which is given to us in the natural attitude and is taken for granted in everyday life. The natural attitude, in this respect, is related to ordinary life, and is originally and most often taken for granted. However, the natural attitude can be reflected upon and made visible.

For Habermas (1987), at the core of the life-world ontology is the inter-dependence between "life" and "world", hence, the term life-world. Therefore, life and world are mutually dependent on one another and the life-world is personal as well as a shared experience. This inseparable relation can be viewed as the "inter-subjective" experience of individual actors and social reality engaged in meaningful interaction (Schutz, 1972). Because of these inter-subjective, lived experiences, we inhabit different worlds with different worldviews. A worldview is a point-of-view held by an individual or collective that reinforces why things are going on and what is considered real. Some worldviews such as the need for climate change adaptation matches with the disaster resilience worldview for empowering communities to share in long-term disaster preparation. This in turn, matches with local food procurement as another particular worldview on disaster preparedness. Some worldviews don't see the match. Habermas's (1987) Theory of Communicative Action is about how we can arrive at an agreement given these diversities of worldviews. As discussed next, this thesis is sectioned into two main analytical portions that form original contributions to the knowledge and practice of communicative action.

First, the four theoretical chapters of this thesis provide an integrated review and analysis of the four main bodies of literature. Theorisation forms a key facet of the case study approach. Yin (1992: 124) asserts that “a major strategy is the prior development of theoretical formulations – of causal relationships”. In so doing, the theoretical framework becomes the “main vehicle for developing generalisations from the case study findings”. The four theoretical chapters review and analyse key themes and issues in the literature and as such, form an integrated approach to the challenges of communicative action. The worldviews resident in food security debates, the challenges of social resilience, the prospects and problems of community gardens and the management of complexity through networked governance are analysed as emergent issues requiring communicative action between previously disparate worldviews. In order to answer the main research question, these themes and issues illustrate the “emerging taxonomy of contextual conditions” with which the three NSDR criteria will operate as a unifying thread to these worldviews (Yin, 1992: 130, 135). In this way, an integrated approach is formed with an original contribution to theory. According to Yin (1992: 135) this has three benefits:

1. The hypothesised understanding is clarified further and identifies the common ground found within the review of the literature;
2. Rival theories or hypotheses aid in the analysis of the evidence; and
3. The broader range of theories provides a vehicle for generalising the results of the evaluation.

Second, the four interviewee chapters of this thesis provide an integrated results and analysis of the four main bodies of literature as they relate to clear articulated reports of the interviewees who are representative of these four areas. These form an original contribution to the knowledge of collective action that is methodological - how the study of life-world informs a more integrated approach for reconciling disparate worldviews. The interviewees were chosen from a cross-section of intersecting worldviews of which each holds a piece of the puzzle – on how, if at all, gardens may contribute to the policy dilemmas of building food security and social resilience given complex and uncertain impacts on our critical infrastructure. These interviewees developed their worldviews from experience. They present the ground-up view on how gardens can contribute to these interconnected factors. Investigating the life-world of these interviewees reveals the natural attitude of their everyday work-life, their local knowledge, the testimonies from personal and direct experiences and the

contingent information accompanying that (Rosenau, 1992). How we interact and identify with our physical, social and cultural environments is an embodied form of lived experience (O'Loughlin cited in Payne, 2001: 68). From a methodological perspective, shifting one's notion of the interviewee from "the subject" to "the body-subject" invites a more integrated approach to various "fields of bodily expressions" that are also interconnected (Berndtsson *et al*, 2007: 263, 264, 267). These may include the cognitive body such as one's thoughts. Similarly, the perceptual body is useful for portraying perceptual changes. The existential body indicates shifts in experiences as a person whereas the social or relational body indicates socially constructed relations. The sensing or acting body may indicate the need to be active and the emotional body, feelings of excitement or worry (Berndtsson *et al*, 2007).

The notion of the "lived body" directs attention away from discourse on subject/object dichotomies. Rather, the "body subject" that is experienced in manifolds, relates to objects not as detached objects, but as something which calls for action on our part (Merleau-Ponty, 1962). Given the "increasingly uncertain, fluid and often destabilised" (Payne, 2001: 81) effect of climate change impacts on people's lives and communities, re-formation of worldviews and seeking out new synergies can be accompanied by existential anxieties, political worries and loneliness. These experiences are also synonymous with globalised and de-traditionalised postmodern reality (Payne, 2001: 70, 81). The natural attitude which exists within an inter-subjective context may be reflected upon in its myriad of complexity and made visible by viewing the shared life-world and its relationships (Ashworth, 2003: 147). Halling (2002: 28) identifies that, "quantitative research is typically written by apparently disembodied authors about no one in particular". Seventeen interviews may at first, appear to be a limited data set for this socially complex topic. The emphasis of this thesis is on embodied authors of particular people therefore focus has been placed on the quality of the data and on the analysis process rather than on the quantity of data. As such, these integrated results and analysis chapters also provide an integrated approach to collective action as practice and how high degrees of complexity, interconnectedness and uncertainty inform their life-world.

Finally, all the aforementioned chapters of this thesis provide an original contribution to the knowledge of collective action through a policy formulation framework. This thesis arrives at a policy decision via the ideal speech forum praxis. Interviewees provide worldviews on the validity and relevance of this praxis and policy making should take this into account. Critical theorists can apply this theory to their

investigation of how communicative interactions work in concrete situations and how people formulate worldviews. The role of applied critical theorists is to "investigate both the threats to freedom and the possibilities for emancipation that obtain for a particular collectivity in a particular time and place" (Parkin, 1996: 425). This investigation can then be open to the "possibilities of a democratic politics" (Forester, 1985: xvii). Therefore this theory contributes to an applied critical social research (Parkin, 1996).

This thesis adopts an integrated approach through establishing a "chain of evidence" and the use of "multiple sources of evidence" (Yin, 2009: 42) that takes the form of triangulating different sources from the academic research literature, government, the community and business. The broader implications of this research are in locating these sources of evidence as illustrative of the challenges and opportunities for the Network Governance model. The model not only aims to govern the emergence of complex and interrelated dynamics, but also produce policy innovation and discovery so that new ideas for difficult circumstances may be trialled and tested. Platforms for communicative action provide such opportunities. The model therefore seeks not only to critique traditional governance structures but to evaluate the challenges and opportunities for implementing those changes. These implications are directly linked with the main research question of this thesis. The final analysis of this is therefore to anchor the case studies as part of a broader theoretical framework on the dilemma of the democratic management of networks.

With this broader implication in mind, Yin (1992) suggests the use of case studies as a tool for conducting policy evaluation. Yin (1992: 121) defines the term evaluation as "a particular type of research intended to assess and explain the results of 'demonstrations'". Demonstrations are defined as "action projects or programmes, operated in any variety of real-life, field settings". This thesis is concerned with policy formulating demonstrations which serve to produce new, field-based ideas that may then be subject to further analysis by research investigators under more controlled settings (Yin, 1992: 122). Producing new, field-based ideas can be viewed as "knowledge-development" tools (Yin, 1992: 122). The implications for Network Governance will be found in knowledge-development for various policy agendas such as: developing adaptive capacity to climate changes; reduction of carbon emissions; promotion of healthy lifestyles; promotion of local food procurement and food literacy; and encouraging communities to share responsibility for their own resilience. These are all emerging features of building a whole-of-nation approach to disaster

resilience. As such, the integration of the four themes of food security, social resilience, community gardens and network governance constitutes an original PhD thesis.

Data collection

Prior to the commencement of the data collection phase of this project, ethical approval was granted by Griffith University's Human Research Ethics Committee. As outlined next, the elements of data collection include: document searches; purposive sample selection; initial organisation of interviews and snowball sampling; the formulation of interview questions; conducting the interviews; pilot tests and revisions; and the transcription of taped interviews.

Document searches

Document searches included literary sources such as books, journal articles, internet searches and the use of library catalogues and databases. The types of documents primarily utilised were departmental and organisational policies, plans and mission statements, and the peer-reviewed academic research literature.

Purposive sample selection

Purposive sampling was used to select participants in the interview process. Yin's (1992) suggestion to select specific, real-life cases of the topic being investigated required the initial and purposeful selection of representative interviewees. The seven core NSDR priority actions outline the broader context under which the three NSDR criteria are applied (see Appendix 2) to form the basis for the selection of samples to be interviewed. The cases or subjects of research include those people who can, according to their line of work, comment on: 1) food security and risks; 2) resilience-building activities within social contexts; 3) community and school garden contributions to building social resilience and food security; and 4) governance implications for the democratic management of networks with communities. A survey of various organisational and departmental policies online and in print was undertaken with a focus on Queensland and Brisbane City contexts. South-East Queensland forms an interesting area of research as it is one of the most rapidly developing areas in Australia. The survey of various organisational and departmental policies occurred prior to the Queensland State election which resulted in a change

of government in 2012. Due to the controversial and widespread dismissal of public servants and the ongoing re-assessment of departmental focus and objectives, the decision was made to utilise the existing review of the previous Labor government policies. As such, they form a retrospective review of policies and programs.

Four group types were found to be of importance in determining the units of analysis. In total, seventeen individuals were interviewed. Table 1 below includes: 1) local government agencies; 2) community groups; 3) education and schooling bodies; and 4) disaster resilience organisations. Generalised descriptions of the relevant activities are provided. Each interviewee was given a descriptive job title that serves to protect the identity of the participant. This thesis aimed to include profit-making business perspectives and a number of food-related businesses with community and local food policies were invited to be interviewed but declined. These included: a major supermarket; a health food franchise; and a home-renovations business. Additionally, a guerrilla gardening group¹ was invited to be interviewed but did not respond.

Initial organisation of interviews and snowball sampling

The initial organisation of the interviews involved approaching potential interviewees either by an initial telephone call or email introducing the nature of this project. If the offer was declined, an alternative contact was requested. Snowball sampling was employed to increase the number of participants and track the connections within local food networks. Actual and potential interviewees were asked if there were other people they would recommend as suitable interviewees. This occurred: 1) upon completion of an interview; or 2) if an invitation to be interviewed was declined.

If the offer was accepted, the Ethical Consent Form and Information Package were emailed to the potential interviewee (see Appendix 3). If accepted, an interview time, date and location was organised either by telephone or by email. At this time it was flagged with the interviewee that it was preferential to digitally audio record the interview, but they were in no way obliged to do so. All interviewees voluntarily agreed to this. It was helpful to flag any complications about recordings at this point as many interviewees suggested that we meet at a café. This was the opportunity to request a quiet meeting place for good recording quality.

¹ Guerilla gardening is gardening on land where there are no legal rights to do so. Activities range from extending one's gardening space on private land onto the footpath area to politicised gardening that calls for land-use reform.

Table 1: Sample selections

Local Government Agencies
Local Government agencies provide examples of joint government-community initiatives in: building communities; urban village planning; healthy lifestyle promotion; community education and empowerment on sustainability issues; and the establishment of community gardens as an organised activity. Generic job titles of the interviewees include: Local Government Officer 1 Local Government Officer 2 Local Government Officer 3 Local Government Officer 4
Community Groups
Community groups provide examples of community-based resilience projects as they relate to: local food initiatives; food sovereignty; social enterprise; assistance for at-risk youth; shared responsibility; building communities; education and training with regards to food literacy, school and community gardening skills; and grass-roots democratic engagement. Generic job titles of the interviewees include: Community Educator and Advocate 1 Community Educator and Advocate 2 Community Educator and Advocate 3 Community Educator and Advocate 4 Youth Worker and Educator 1 Youth Worker and Educator 2 Youth Worker and Educator 3
Schools and Education Bodies
Schools, education and consultative bodies provide examples of sustainability initiatives in schools for building children's competency and experiential development in: food literacy; eco-citizenry; school gardening; outdoor learning spaces; sustainability; shared responsibility; and democratic participation. Generic job titles of the interviewees include: School Educator 1 School Educator 2 School Educator 3
Disaster Resilience Organisations
Disaster resilience organisations provide examples of developing social resilience as a form of disaster resilience through formalised projects and programs. These programs are targeted to empower communities to share in taking responsibility for their own resilience through: volunteering; leadership; youth advocacy; climate change adaptation; community engagement; bouncing back better through hardship; shared responsibility; building community self-reliance; and community-based initiatives. Generic job titles of the interviewees include: Disaster Resilience Officer 1 Disaster Resilience Officer 2 Disaster Resilience Officer 3

Securing the appropriate person to be interviewed often went through the initial contact at first, perhaps a secretary, personal assistant, or the general enquiry line. Suggestion for the appropriate contact came from this initial contact at times. In the

case of one local government agency, the initial contact emailed an invitation to participate in this project by circulating the information package and the drafted list of interview questions to the departments they thought were appropriate. This process was very helpful and resulted in securing the desired interviewees. At other times the contact details of the person to interview was available on-line and direct contact was made with those people in those cases.

Formulation of interview questions

The interview questions were devised by re-visiting the sub-research questions that were representative of each four bodies of reviewed literature. Open-ended questions were posed with the aim of inviting depth of discussion on each topic. Each sub-research question is listed below with the corresponding interview questions. They include:

Food security sub-research question 1: *What is food security and how can we understand the risks to achieving it?* Interview questions included: 1) *What do you understand by the term food security?* And 2) *What do you think could be risks to food security?*

Social resilience sub-research question 2: *What is social resilience and how can it be applied to the problems of food security and climate changes?* Interview questions included: 1) *What does social resilience mean to you?* And 2) *Does building social resilience relate to food security and climate change? If so, then how?*

Community and school gardens sub-research question 3: *How do community and school gardens contribute to building a community capacity for social resilience and food security?* Interview questions included: 1) *The draft of the 'new' Brisbane City Plan proposes 'urban villages', where everything is within walking distance. What do you think about this?* 2) *If community and school gardens were part of 'urban villages', how might they contribute to building social resilience?* And 3) *If community and school gardens were part of 'urban villages', how might they contribute to building food security?*

Governance implications sub-research question 4: *What governance opportunities and challenges are posed for the democratic management of networks and*

relationships? Interview questions included: 1) *What should government do about these issues?* 2) *What should business do about these issues?* 3) *What should communities do about these issues?* And 4) *What are the opportunities and challenges?* At the end of each interview, participants were asked the following questions: 1) *Are there any other thoughts?* And 2) *Who else do you recommend would be good to interview?*

Conducting the interviews

Upon arrival for the interview a printed Information Package was presented to the interviewee for their keeping. A printed copy of the Ethical Consent Form was also presented for their signature. Permission to audio record each interview was sought a second time as a courtesy. In all cases this was consented to and a digital audio tape was used. All but one interview was conducted face-to-face. One long-distance interview was by telephone. A quiet room was booked and with the consent of the interviewee, the speaker phone was used with the digital recorder next to the speaker.

Interviews took approximately $\frac{3}{4}$ hour to one hour. An interview question sheet with prompts was used for directing the course of the interview and prompting notes were taken as reminders of important things said that needed further discussion and clarification. Sometimes at the beginning of the interview but mostly at the end, the interviewees wished to know more detail about the nature of this research and that was provided. The interviewees were offered a copy of any publications that resulted from this thesis to be sent to them.

Pilot test and revisions made

Five interviews were conducted initially as part of a pilot study that was designed to provide a basis for assessing the effectiveness of the interview questions to elicit the required data. The only modifications made were to delete the lengthy prompts listed under each interview question as reminders of the content in the literature. This was found to be an unnecessary distraction and the interview sheet was edited to include the interview questions alone.

Transcription of taped interview data into written protocols

Each recording was given a chosen pseudonym of the interviewee as its title. Each recording was edited to protect any comments revealing the identity of the interviewee. Digital recordings were then uploaded to a transcription service. The transcripts were prepared by 'Pacific Transcription' available at the website: www.pacificttranscription.com.au/ The transcription style selected was Standard 'Intelligent Verbatim'² because it aims to accurately capture everything spoken by participants but for readability purposes omits: false starts; repetitions; and excessive use of filler words such as 'um', 'you know' and 'like'. As part of the package, *NVivo Basic* was provided as a free option. This format enables the importation of the transcript into *NVivo* as text, and is compatible with all versions of *NVivo*. As each recording was uploaded to the transcription site, a request was made for the transcribers to use the pseudonym throughout the transcription instead of 'interviewee' or 'respondent'. However, later on the pseudonym was discarded for a generic job title. Transcriptions took approximately 1 to 2 weeks for return and once each interview was transcribed, Pacific Transcriptions sent an email that it was ready. Each file was individually downloaded in Word format into a Word file on the computer and a back-up on a USB.

Data analysis

Thematic coding and sorting of the data

This thesis employs thematic data analysis that involved an eight step process:

1. List the themes that emerged from literature review;
2. Use these themes to interrogate interview transcripts;
3. Identify where interview data supports points of agreement in literature;
4. Identify where interview data does not support points of agreement in literature;
5. Identify where interview data supports one side or the other of a dispute in the literature;
6. Identify new themes in the interview data that were not mentioned in the literature and add them to the list;
7. Go back and re-analyse the interview data with the new themes; and

² Linguistic analysis was not undertaken, therefore other transcription styles were not used such as: 1) orthographic transcription 'Strict Verbatim' which includes retaining grammatically incorrect speaker idiosyncrasies such as all false starts, repetitions and filler words which would ordinarily be excluded in standard slightly edited transcription; and 2) conversational analysis transcription where transcripts include the symbols to indicate features such as: descriptions of laughter, sighs, coughs, pauses, pace and tone.

8. Seek to explain the points of difference and agreement with the literature.

With these steps in mind, four significant but interconnected stages in data analysis occurred: Three different forms of 'passing the data' and then writing the integrated results and analysis chapters.

Stage 1: Word folders and Open Coding³

The written transcriptions were sorted into thematic groupings. The 'first pass of the data' was conducted by organising the raw data from the transcripts into Word folders of four main interviewee groups: 1) community; 2) education; 3) local government; and 4) disaster resilience. The initial thought was that there may be interesting differences or similarities between domains to be analysed. Then, within each of the four groups, the raw interview data were further categorised into Word folders under the four main themes: 1) food security features and risks; 2) meaning of social resilience; 3) key features of community and school gardens which align or don't align with food security and social resilience; and 4) the governance implications for government, business and community actions. For example, under the disaster resilience group of interviewees, the transcripts were divided into the four main themes addressed in this thesis.

Stage 2: Word files and Axial Coding⁴

³ "Open coding refers to the initial phase of the coding process in the grounded theory approach to qualitative research (generating theory from data) espoused by Anselm Strauss and Juliet Corbin. They call this initial stage of data analysis open coding because they view the process as the "opening up" of the text in order to uncover ideas and meanings it holds. The process of open coding begins with the collection of raw data (e.g., interviews, fieldnotes, art, reports and diaries). The intent of open coding is to break down the data into segments in order to interpret them" (Given, 2008: 581).

⁴ "Axial coding is the phase where concepts and categories that begin to stand out are refined and relationships among them are pursued systematically. Categories represent phenomena such as events, objects, incidents, and actions" (Given, 2008: 51).

The 'second pass of the data' consisted of looking for associations between themes, causes, interactions, strategies and processes. For example, the interactions and processes in discussing social resilience demonstrated a difference in voiced understanding of the term between the beginning of the question and the end of the interview. This indicated a relationship between hearing oneself talk and providing the opportunity for deliberation as opposed to just giving neat definitions devoid of discussion and context. With each thematic chapter, this consisted of cutting and pasting 5 of the 8 step data analysis format into the Word document. Headings included: list the themes that emerged from literature review. This involved a summary of the main themes in the literature review and distilling the main points of agreement and tension. Then relevant quotes were inserted under the following subheadings: identify where interview data supports points of agreement in literature; identify where interview data does not support points of agreement in literature; identify where interview data supports one side or the other of a dispute in the literature; and identify new themes in the interview data that were not mentioned in the literature.

Steps 3 and 5 were the most prominent subheadings and the raw quotes from the interview transcripts were applied mostly to these steps. At the head of each block of quotes, a one to two line heading which encompassed the main thrust of the thoughts was inserted. The quote headings were cut and pasted into a 'Summary' document which provided a shortlist of the main themes emergent in the first sweep of the data and who said them. Prominent themes such as 'dependency on mainstream food chains'; 'lack of knowledge on alternatives'; and 'corporate control' were the kinds of themes emerging from the interviews.

Stage 3: Word files and Selective Coding⁵

The 'third pass of the data' consisted of highlighting in red the most interesting sections of the quotes at that time. These were the areas which at the time would provide the quoted gems to retain in the text. This three staged process took about 6 weeks. In September an introductory NVivo workshop was attended to determine if the software should be used here on. The initial 'Text Search Queries' were helpful in

⁵ "Selective coding is... where the analyst selects a central (core) category as a vehicle for the integration of the other major categories thereby developing and refining theoretical claims" (Given, 2008: 805).

determining who, and in what capacity an interviewee commented on a topic such as 'ability' or 'capability'. This function produced an easily accessible report which allowed an understanding of the measure of importance interviewees placed on capability development and competency in general in terms of the 'ability' to access food.

Stage 4: Word files and scripting of integrated results and analysis chapters

At this stage, each of the four main themes in the literature: 1) food security and risk; 2) social resilience; 3) community and school gardens; and 4) governance implications were now scaffold into four new integrated results and analysis chapters. The highlighted themes that were identified by interviewees provided a framework for revisiting the literature review chapters. Step 7 of the data analysis process involved going back and re-analyse the interview data with the new themes. It was found that Step 3: Identify where interview data supports points of agreement in literature; and Step 5: Identify where interview data supports one side or the other of a dispute in the literature were the most prevalent for reconciling the interviewee reports with the literature reports. Step 6: Identify new themes in the interview data that were not mentioned in the literature did not emerge. Therefore, Step 8 which sought to explain the points of difference and agreement with the literature consisted of highlighting the resonance of agreed interviewee positions with agreed positions in the literature, which also fell on a particular side of a dispute. As with the literature review chapters, the interviewee results highlighted particular themes and issues. These results were then analysed by revisiting the literature on those particular themes and issues to explain how practitioners concur with each other and the reviewed literature on the importance of the ideas and agreement put forward. As such, they provide Policy-Formulating demonstrations which serve to produce new, field-based ideas (supported by the literature) that may then be subject to further analysis by research investigators and trialled any variety of real-life, field settings. These knowledge-development tools formed the basis of thesis propositions for building a more integrative and holistic approach to food-related disaster resilience.

In summary, this chapter clarified the research methods used and the reasoning behind them by outlining the methodology of this thesis. The research problem, hypothesis, aim and questions were outlined. The overall research strategy employed the case study approach. The chapter then covered the relevance of the

theorisation and broader implications of this research, data collection and data analysis.

Chapter 3: Understanding the risks to food security

Introduction

Food security in rapidly growing urban populations is reliant upon the uninterrupted functioning of our interconnected transport systems. Food supply chain interruptions due to severe weather events have become an emergent issue in terms of understanding the risks of food insecurity. The research question addressed in this chapter is: *What is food security and how can we understand the risks to achieving it?* The main aim is to apply the *National Strategy for Disaster Resilience* (NSDR) criteria for leading change and coordinating effort to the reviewed and analysed literature to reveal how food security and its risks are understood. This aim and research question primarily applies to the first NSDR priority action for leading change and coordinating effort on understanding risks. Here, the NSDR advocates that (COAG, 2011: 7):

*Leaders from all levels of government, business, the not-for-profit sector and communities **strive to recognise and understand the risks disasters pose to their own and their community's interests.** They take responsibility for mitigating these risks and apply the concept of disaster resilience to strategic planning processes, and to those roles where they can exercise influence (Emphasis added).*

This chapter examines the framing of terms such as vulnerability, hazard and risks in the literature. Then it addresses the agreements and disputes understanding risks to three commonly recognised features of food security that appear in the research literature: 1) adequacy and acceptability; 2) availability; and 3) access.

First, the issue of nutritional adequacy and acceptability in terms of quantity and quality of food is discussed. Agreements in the literature highlight the government/food industry alliance within various food plans and arguments generated by the ethical consumerism movement. The key dispute is elucidated in the power struggle underlying the forming of partnerships in terms of who should be included as joint gate-keepers of food acceptability.

Second, the issue of food availability is addressed. Agreements in the literature cast light on the roles of government/food industry alliances as key players in defining the parameters of food availability. The implications for investment in supermarkets as the critical infrastructure and as safety-nets in times of crisis are flagged. Then agreements in the food sovereignty movement are compared with these positions. Finally, various community-based food plans are outlined to elucidate the disputes

involved in forming partnerships and who should be included as joint gate-keepers of food availability.

Third, two key issues with regards to the means of access to food are discussed: 1) agreements in the literature involving safety-net measures, which consider cost of food, socio-economic dynamics, perceptual factors and food disadvantage (government support of existing community-based initiatives in food access is outlined as a disputed need); and 2) agreements in the literature involving planning for location and mobility. Forming partnerships on who should be included as joint gate-keepers of food access in terms of planning for location and mobility is then discussed. Risk perceptions as they relate to the adequacy of long-term concerns about our current food systems are incorporated into the three themes with regards to: 1) climate change events on food production; 2) heavy reliance on centralised food distribution points; and 3) a rapidly increasing urban population.

Vulnerability, hazard and risks

Understanding the risks to the capacity of authorities, businesses and communities to respond to food-related disasters is central to the development of, and planned preparation for, food security in times of crisis. It is therefore important to be clear about what is meant by the terms vulnerability, hazard and risk. The *International Strategy for Disaster Resilience* (ISDR) defines vulnerability as “the conditions determined by physical, social, economic, and environmental factors or processes which increase the susceptibility or risk of a community to the impact of hazards” (UN, 2005: 1). It further defines hazard as the “potentially damaging physical event, phenomenon or human activity that may cause loss of life, injury, damage, disruption or degradation” (UN, 2005: 1). Australia’s *National Emergency Risk Assessment Guidelines* (NERAG) views risk as the probability for vulnerabilities to turn into significant hazards (NEMC, 2010). Measurement and assessment of likelihood forms the basis of NERAG, however, “improving understanding of risk issues” is integral to this process. In this way, “treatment measures” may be considered (NEMC, 2010: 4, 21).

Howes (2005: 5) argues that “broadly speaking, a risk can be understood to be a perceived hazard” which has two components: 1) the hazard, which has the “potential to have a negative impact on the normal functioning” of a given entity, be that, social, biological, etc.; and 2) the perception, which is “an activity undertaken by

thinking beings that enables them to interpret and respond to this hazard". Lupton (1999) asserts that risk perceptions can be framed in term of *realism*. This is based on the premise of 'real' scientific, mathematical calculations and measured data which are seen to be placed outside social contexts (cited in Howes, 2005: 5). For example, in terms of the Commonwealth Scientific and Industrial and Research Organisation (CSIRO) climate change research, Preston and Stafford-Smith (2009: 11) offer an equation:

Risk = biophysical vulnerability + social vulnerability + likelihood.

There is however, vast literature on risk and its definitions. Howes (2005: 5) proposes that "because risk involves perception, there are often situations where people 'see' risk differently". Lupton (1999: 14) acknowledges that risks can be understood as environmental, lifestyle, medical, interpersonal, economic and criminal. Because these perceptions will be varied and nuanced, Lupton concurs that risk perception may be viewed as social contexts which highlights how risk perceptions may be constructed differently depending on those contexts. This can be framed as *weak constructivism* whereby hazards are seen as real but our perceptions of them subject to social influences. They can also be framed in terms of *strong constructivism*, whereby both the hazards and perceptions of them are acknowledged to be constructed with subjective aspects to their interpretation.

This thesis will highlight the social contexts of food security risk perceptions as they are constructed by a variety of perspectives within the food industry, government bodies and not-for-profit organisations, which are supported by their own respective research. Social contexts as they relate to food insecurity are important for the several reasons that will be explained below.

According to the New South Wales Centre for Public Health Nutrition, food insecurity is linked with people experiencing hunger, food insufficiency, having a poor quality diet, feeling anxious about acquiring food and/or having to use food relief (cited in Borg, 2008: 4). Additionally, people who are food insecure are less likely to eat adequate fruit, vegetables and fibre which in turn increases the chances of being unhealthy, over or underweight, malnourished and increases the likelihood of chronic disease (Borg, 2008: 4). The Australian Red Cross, which advocates for the food disadvantaged, recognises that people become more food insecure in conjunction with the following characteristics: worrying about running out of food or money; running out of food; not having money to buy more food; less varied diet; cutting

down meal size and eating less; not eating up to a whole day in spite of feeling hungry; and weight loss. The conclusion drawn by the Australian Red Cross is that food insecurity leads to a number of negative impacts and is therefore a form of vulnerability with multi-contextual characteristics (Borg, 2008: 8).

Complicating this contextual picture further, the World Bank acknowledges that “there is a growing concern that climate changes could slow or possibly even reverse progress on poverty reduction” in developing countries due to their dependence on “agriculture and other climate-sensitive natural resources for income and wellbeing” and “lack sufficient financial and technical capacities to manage increasing climate risk” (Skoufias *et al*, 2011: 1). Additionally, the links between poverty, developing nations and climate change impacts have been well researched (Ahmed *et al*, 2009; Anderson, 2006; Assunção and Chein Feres, 2009; Chen and Ravallion, 2009; Jacoby *et al*, 2011; and Skoufias *et al*, 2011). The associations between climate changes and first world risks are equally well researched but far less acknowledged by policy makers and in public debate (Morrow, 2008). Anglicare (2012: 2) acknowledge that Australia is one of the most prosperous nations in the world, where poverty and food insecurity may seem very far removed. However, literature has emerged on the risks to urban and city environments due to recent severe weather events such as hurricanes/cyclones (Colten *et al*, 2008); earthquakes (Egbelakin and Wilkinson, 2010); tsunamis (Suppasri *et al*, 2012); the Queensland floods and recent Australian bushfires (Howes *et al*, 2012a, b).

As outlined, Preston and Stafford-Smith (2009: 11) highlight that calculating the likelihood of risk is compounded by social vulnerabilities. Understanding risk requires more than a probability profile of a hazardous event as there are “high levels of uncertainty” attached with “estimating frequency and consequence of extreme events, even with the most sophisticated techniques” (Salter, 1996: 11). Salter (1996: 11) advises that a “richer appreciation of risk dimensions can be derived if it is appreciated that individuals, organisations and ultimately, their cultures are all key elements in system design, operation, monitoring and failure”. Therefore “successful problem structuring” is a crucial first step in developing successful solutions (Salter, 1996: 11). In line with this, the ISDR calls for research, analysis and reporting on “long-term changes and emerging issues that might increase vulnerabilities and risks or the capacity of authorities and communities to respond to disasters” (UN, 2005: 7, 9). With these further complications and factors in mind, vulnerability may be understood as the “degree of susceptibility and resilience of the community and

environment to hazards” (Salter, 1996: 13). Therefore, Blaikie (cited in Salter, 1996: 13) suggests that vulnerability may be defined as “the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impact of a (natural) hazard”. Interestingly, vulnerability and resilience can be seen as two sides of the same coin. Resilience is largely about capacity, while vulnerability is the lack of capacity. As will be discussed in the following chapter, adaptation is the building of this capacity.

Borg (2008: 9) argues that the rationale for addressing food insecurity is to “make a difference for vulnerable people by addressing immediate needs, reducing vulnerability, building capacity and enhancing resilience over the long-term”. This profile of food insecurity is consistent with concerns articulated by the NSDR for a vision of a disaster resilient community. A disaster resilient community is one where, for a start, people “have comprehensive local information about hazards and risks, including who is exposed and who is most vulnerable” (COAG, 2011: 5). The NSDR acknowledge that, “potential escalation in the frequency and magnitude of hazards and our increasing vulnerability to disasters presents governments with unprecedented calls on their resources and expertise” (COAG, 2011: 2). The IPCC (2012) report on *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* supports the idea of an escalation in extreme weather events. However, providing government support to those who are most vulnerable and dependent on help needs to be balanced with the promotion of self-sufficiency. The NSDR have articulated why government support may lead to detrimental outcomes for building resilience (COAG, 2011: 2):

*Governments’ desire to help communities in need and pressure to help those affected may be creating **unrealistic expectations and unsustainable dependencies**. Should this continue, it will undermine community capability and confidence. Therefore, communities need to be empowered to take shared responsibility for coping with disasters (Emphasis added).*

This issue of dependency, and where and how it is located is of central importance. In line with the NSDR call for understanding risks, they prescribe that: “Leaders drive development of partnerships and networks to build resilience at the government, business, neighbourhood, and community levels”. Additionally, government driven support of, “community efforts in resilience-based planning, including resilience-building activities” are advised (COAG, 2011: 7). This thesis analyses various risk perceptions of food security in terms of their general agreements and disputes in the literature and how dependencies may be shifted, shared or revised so that food expectations may be met with greater measures of capability and confidence.

Agreements and disputes in understanding risks to food security

Food insecurity on a large scale is recognised for its potential to become a food crisis. The term food security is concerned with effectively addressing not only individual factors, but also the risks of global and regional food crises and the vulnerabilities which underlie them (Conceicao and Mendoza 2009: 1159). To this end, the *World Food Summit* in 1996 produced the *Rome Declaration of World Food Security* at the invitation of the Food and Agriculture Organisation of the United Nations (FAO). As an intergovernmental organisation with 194 member Nations (FAO, 2013) they reaffirmed the right of everyone to have access to safe and nutritious food (FAO, 1998). This conclusion was reaffirmed by the *Declaration on World Food Security* in 2008 (FAO, 2008) and remains a core value of the United Nation's Committee on World Food Security (CFS) to the present date (FAO, 2013). To address the issue of food security and stability the FAO's widely accepted definition intends that (cited in Koc *et al*, 1999: 1):

Food is available at all times; that all persons have means of access to it; that it is nutritionally adequate in terms of quantity and quality; and this it is acceptable within the given culture. Only when all these conditions are in place can a population be considered "food secure".

Other contested dimensions to food security include the argument that food systems should be adequate in terms of long-term issues (this raises the issue of longevity, which involves a critical analysis of sustainable considerations for food production, distribution, consumption and waste management without compromising the ability of future generations to meet their needs) (Koc *et al*, 1999: 2). Another argument is that food systems should build in a range of social safety-nets (this involves intervention and support for regaining stability) (Pingali *et al*, 2005). To understand risk perceptions of food insecurity, this thesis focuses on the meaning of the three widely accepted dimensions of food security: 1) food adequacy and acceptability; 2) food availability; and 3) food access, and will integrate the other two dimensions of long-term sustainability and safety-nets within them.

Understanding risks to nutritional adequacy and acceptability

Food adequacy and acceptability involve the manner in which food is utilised. This, in turn, involves risk perceptions to nutritional and social values and assurances of food safety (Ericksen *et al*, 2009: 374; de Haen, 2008: 28). Food utilisation therefore entails cultural and social considerations of the issues concerning human health and

well-being (Koc *et al*, 1999: 1). This is closely linked with socio-economic issues and the role of people's perceptions. The existing partnerships between government and food industries serve to frame the dominant understanding of food acceptability and its risks, but government support of community-based food quality initiatives is not a major component of these partnerships.

Risk perceptions of the government and food industry alliance

Food utilisation raises the issue of food standards, handling, packaging and labelling. These are standard elements of the industries and supermarkets that are key players within the food system (Dixon, 2007: 30). The Australian Government operates the *Trusted Information Sharing Network* (TISN⁶) which facilitates a national forum for “owners and operators of critical infrastructure to discuss critical infrastructure vulnerabilities with relevant government agencies” (CoA, 2010a: 11). At the national level, the Department of Agriculture, Fisheries and Forestry (DAFF) oversees the *Food Chain Sector Group* (FCSG⁷) which operates under the banner of the TISN (CoA, 2010a: 17; DAFF, 2011c). The FCSG was formed in 2003 to recognise “that the food and grocery supply chain is a critical component of our national infrastructure” (DAFF, 2011b: 1). In consultation with the TISN, the FCSG developed the *National Strategy for Enhancing the Safety and Security of our Food Supply* (see Appendix 4). The aim of this strategy is to ensure that food safety and security systems are “capable to responding to the new increased potential for acts of deliberate and malicious intervention in the food supply” (TISN, 2010: 1). Strict standards in the production and handling of food are therefore observed and create the benchmark for the acceptability of food. This approach forms the food chain sector concerns for the Australian Government's *Critical Infrastructure Resilience Strategy* (CoA, 2010a: 17).

⁶ The TISN is “made up of *Infrastructure Assurance Advisory Groups* for a number of different business sectors” (TISN, 2010: i). Sector groups include: banking and finance; health; the food chain; transport; communications; water services; and energy (CoA, 2010a: 17). These groups are overseen by the *Critical Infrastructure Advisory Council*, which “provides advice to the federal Attorney-General on the national approach to critical infrastructure protection” (TISN, 2010: i).

⁷ The industry membership for the *Food Chain Sector Group* (FCSG) of the TISN includes: Aldi Supermarkets; Animal Health Alliance; Australian Chamber of Commerce and Industry; Australian Chicken Meat Federation; Australian Food and Grocery Council; Australian Food Safety Centre for Excellence; Australian Meat Council; Coco Cola Amatil Ltd; Coles Group; Croplife Australia; Dairy Australia; Food and Beverage Importers' Association; Franklins Supermarkets; Foodbank; George Weston Foods; Grain Trade Australia; Horticulture Australia Ltd; Kimberley Clark; McDonalds; Meat and Livestock Australia; Metcash Trading Ltd; National Farmers' Federation; National Foods; Nestle; Packaging Council of Australia; Produce Marketing Association; Refrigerated Warehouse and Transport Association; Simplot; and Woolworths (DAFF, 2011b: 1).

Risk perceptions concerning the industrialised food regime

Blay-Palmer (2008: 123) acknowledges that fear of food contamination led to the “inception of the industrial food system” which “necessitated a central role for government regulations, science and technology”. Food processors have diminished the “perceived distance between field and fork through packaging, labelling and certification programmes” which have taken “fear out of food” and offer quality that can be trusted (Blay-Palmer, 2008: 123). The quality-control of food, however, has seen agri-food systems become more complex and more energy intensive. It engages more actors, such as processors, storage providers and food handlers (Jones, 2002: 560) thereby increasing its vulnerability to both intentional and unintentional contamination (TISN, 2010: 3).

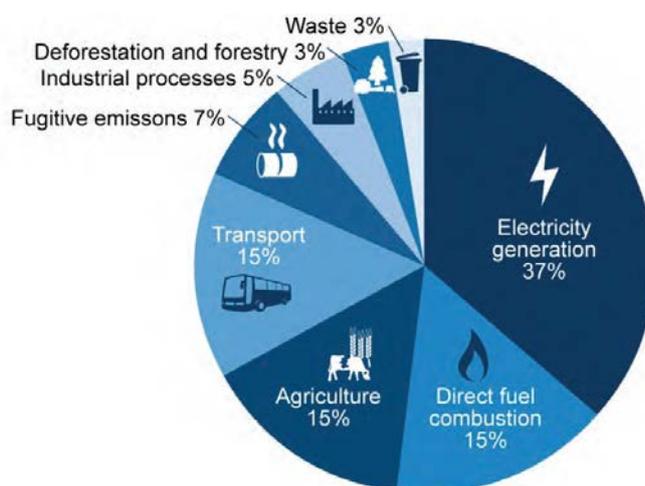
Pursuing biotechnology and food innovation is the dominant approach to stabilising Australia’s domestic food systems and is focussed on the industrialisation of the agricultural sector. In 2007, 42% of Queensland’s total greenhouse gas emissions were from agricultural production and land clearing (DERM, 2009: 26). Broad-scale agriculture has seen the “market-led private sector” drive the harvesting of vast acreage, mono-cultured crops (Magnuson, 2007: 333). It has become more widely understood that broad-scale farming sees farmers not only locked into contracts with the retail giants, but also trapped on the “pesticide treadmill” to keep the “natural enemies” at bay (Magnuson, 2007: 333). The systematic build-up of toxins in topsoil and waterways continues to be a challenging concern as big business turns to biotechnology for solutions as opposed to less carbon intensive food system models (Magnuson, 2007: 332; Millstone and Lang, 2003: 17).

Additionally, the dependence of the supply chain on long-distance transport is framed as a risk to human and environmental health. National and transnational food networks entail the transportation of food products over large distances placing high dependence on transport infrastructure and fossil fuels (UKCO, 2010: 6). The sales of the processed and packaged goods produced by companies are dependent on transportation to supermarkets as centralised food distribution points. Millstone and Lang (2003: 40) illustrate that long distances and time involved between the production and end-purchase of food products have seen agricultural research and development focus on improving the performance of products once they’ve left the farm. Examples include innovations in long-term storage, enhancing shelf-life and suitability for processing (Millstone and Lang, 2003: 40) and the development of food

standards (Ericksen *et al*, 2009: 374). Food colourings, antioxidants, thickeners, flavour enhancers, preservatives, emulsifiers, stabilisers, and anti-caking agents are all outcomes of this process (Millstone and Lang, 2003: 37), and highlight concerns for the current obesity epidemic (Dixon and Broom, 2007: 3).

Added to this profile, the amount of freight transported in Australia has “doubled over the last 20 years in tonne-kilometres” on account of economic growth (Garnaut, 2008c). Australia’s carbon pollution is driven by the use of fossil fuels and our “economy is heavily dependent on emissions-intensive energy sources” (CoA, 2011: xi, 12). Figure 1 below, illustrates that transport and agriculture each contribute around 15 per cent of total emissions (CoA, 2011: xi).

Figure 1: Australia’s carbon pollution profile



Source: 2009 emissions from the National Greenhouse Gas Inventory 2011 (DCCEE analysis cited in CoA, 2011: 13).

According to Millstone and Lang (2003: 67) trade related transportation is one of the fastest growing sources of greenhouse gas emissions. Food miles are a measure of the distances travelled by foods (McMichael and Friedmann, 2007: 297) from where it is grown or raised to where it is ultimately purchased by the end-user (Pirog, 2004: 2). Capturing this cost to the consumer is not a priority for the two super-chains locked into price-wars to win consumer loyalty. Rather, consumer loyalty studies have been conducted with the aim of understanding consumer behaviour and values for promoting marketing strategies (Grunert and Juhl, 1995; Pearson, 2001; Wier and Calverley, 2002), and informing policy agendas (Schoon and TeGrotenhuis, 2000).

The more processes and actors involved in the handling of food, the greater and more complex the food regime⁸. This can involve scenarios where actors “lose the capacity to predict the results of their actions, or those of other actors” (McMichael and Friedmann, 2007: 294) making transparency, traceability, and accountability difficult (Blanco *et al*, 2011). Global food security now requires a comprehension of the multiple ways in which these potential vulnerabilities or dimensions can underpin domestic food systems⁹ (Ericksen *et al*, 2009: 373). In spite of these food regime analyses, is defined as nutritionally adequate in terms of quantity and quality and is seen acceptable within the given culture of government facilitation of food industry objectives. These gate-keepers define for us, as consumers, the food security dimension of nutritional adequacy and its acceptability within our culture.

Risk perceptions according to the Ethical Consumerism movement

Nutritional adequacy of food in terms of quantity and quality and its acceptability within the given culture is an agreed feature of food security from an ethics perspective. The notion of ethical consumerism has infiltrated public debate through the rise of eco-labelling of food products (Grankvist and Biel, 2001). The organics industry and the Biological Farmers' Australia (BFA) which advocates for the industry, has contributed to an overhaul in the meaning of food adequacy. The BFA was formed over two decades ago to “progress the interests of farmers who wished to promote and protect the message of organics, including the setting of organic standards” (BFA, 2012b). This involves “working with industry for industry” and the BFA offers a range of services to the organic industry members from farm through to retail (BFA, 2012b). In 2006, more than \$13 million worth of organic produce was imported and distributed throughout mainstream outlets in Australia, with more than half of this in the form of processed products such as tea, coffee, breakfast cereals, pasta, biscuits, chocolate, and soup. As Lyons (2006) argues, these products are transported considerable distances depleting fossil fuels and emitting greenhouse

⁸ Food regimes are “organised by implicit political-economic rules that flow from specific power configurations in the inter-State system” (McMichael and Friedmann, 2007: 294, 307).

⁹ The issue of supermarket food governance, its industrialisation through biotechnological solutions and politics is discussed extensively in food regime literature. For example, Lawrence and Burch (2007) outline that as a British colony, Australia's first “extensive food regime” from 1870 to the First World War, was through trading cheap food-stuffs like lamb, wool and wheat. Between the First and Second World Wars a second regime evolved in the 1950s with ‘durable foods’ to include trading with the United States (2007: 12). They argue that more recently, a third regime has emerged, where supermarkets are dominant in which they “utilise neo-liberal policy settings to enhance their global ‘reach’” (2007: 13). Australia's current dominant food regime is indicative of this third style.

gases. This conventionalisation of organic food can therefore undermine the characteristics of organic food by consumers as contamination free (Lyons, 2006: 163). However, the organics movement is a broader collective than the organics industry alone. Consumers report values of human and environmental health such as: 'chemical-free', 'natural', 'raw', 'flavourful', 'nutrient-rich', 'free from genetically modified organisms' and 'unprocessed' (Lyons, 2006: 155-158). Food cooperatives largely provide an outlet here (Borg, 2008: 10-14) and may be a source for providing information to other food movements.

Themes that have emerged from the research literature relating to ethical consumerism include sociological studies that demonstrate changing beliefs, attitudes, motivations, behaviour, commitment and preferences. Food acceptability is subject to feelings of responsibility for the consequences of one's choices, how risk perceptions are framed and a consideration of what constitutes ethical actions (Davies *et al*, 2002; Schwartz, 1970). The importance of moral attitudes in predicting organic food purchases (Arvola *et al*, 2008) and preferences for organic food has been widely researched (Bahr *et al*, 2004; Baker *et al*, 2006; Chinnici *et al*, 2002; Dreezens *et al*, 2005; Fillion and Arazi, 2002; Lea and Worsley, 2005; Lockie *et al*, 2002; Makatouni, 2002; McEachern and McClean, 2002). Likewise, the importance of feeling one has a good conscience and taking responsibility for family well-being through providing organic food is reported (Bahr *et al*, 2004; Baker *et al*, 2006; Makatouni, 2002).

Other research on ethical consumerism includes the importance of moral attitudes in food production practices (Bissonnette and Contento, 2001) including risks to animal welfare (Harper and Makatouni, 2002). This involves wider, environmental concerns that are thought to be addressed by purchasing organic food (Grunert, 1993; Lea and Worsley, 2004; Magnusson *et al*, 2003; Van Dam, 1991). Likewise, dietary choices due to climate change concerns have been reported (Carlsson-Kanyama, 1998) including the implications of genetically modified foods (Bredahl, 1999, 2001; Dreezens *et al*, 2005; Hursti and Magnusson, 2003; Lea, 2005; Magnusson and Hursti, 2002; Shanahan *et al*, 2001).

Research on consumers' food-related environmental beliefs and behaviours (Lea and Worsley, 2008) has also led to a rethinking of, or bridging of the gap between, food producers and consumers (Clancy, 1993; Duffy *et al*, 2005). As such, research on the preferences for locally produced food is growing (Brown, 2003; Feenstra, 1997;

Getz, 1991; Weatherell *et al*, 2003; Wilkins *et al*, 2002). This includes: the question of what drives farmers to move toward ecological farming practices (Schoon and TeGrotenhuis, 2000); the rise of alternative food system models (Kloppenburger *et al*, 2000); and, factors which spur farmers and community members to set up Community Supported Agriculture (CSA) models (Cone and Myhre, 2000) to minimise hazards to environmental and human health.

Other research has focussed on gender influences on food choices (Beardsworth *et al*, 2002; Fagerli and Wandel, 1999); the importance of fruit and vegetable consumption (Batt and Giblett, 1999; Cox *et al*, 1998); preferences for vegetarian diets (Dietz *et al*, 1995; Kalof *et al*, 1999; Lea and Worsley, 2003 and 2004; Povey *et al*, 2001); preferences for meat diets (Povey *et al*, 2001; Sapp, 1991); youth environmental attitudes (Fien *et al*, 2002); and social attitudes related to meat consumption (Worsley and Skrzypiec, 1997). From a welfare advocacy perspective, the Australian Council of Social Services (ACOSS) has drawn links between unemployment, poverty and the risk of hunger (ACOSS, 2012). Research in the area of public health by community nutritionists engaged in sustainable food initiatives is growing, as are the role of food in social services and welfare agencies such as Mission Australia and Foodbank¹⁰ (Borg, 2008: 10-14).

In summary, there is a general agreement between government, industry and the ethical consumer movement that food adequacy and acceptability is a key feature of food security. Risk perceptions about the government/industry priorities are based on food regime analysis and the values and symbology of food as argued by ethical consumerism. However, tensions rise in determining who should be included in partnership with this alliance, which currently sits outside it.

The issue of who to include as joint gate-keepers of food acceptability

The priorities of government/industry food plans and strategies which locate communities and consumers as stakeholders in food acceptability are outlined in Appendix 4. The use of words such as 'community' and 'consumer' however is often used interchangeably without considered distinction in how they differ. Additionally,

¹⁰ Foodbank is a non-denominational, charitable organisation which sources donated and surplus food from the food and grocery industry to distribute to welfare and community agencies that provide food assistance to people in need (Foodbank Queensland Limited, 2012).

how people's values should be considered when they fall outside industry priorities are neglected.

In contrast to these plans and strategies, the ethical consumerism movement has served to re-situate the acceptability of food and contextualised understandings of food risks. As social and life conditions change, so does the significance of food in our lives (Mead, 1970). Research on food values provides a range of criteria for evaluating people and events and to justify actions. As such they provide a "cross-roads" between individual motivations, beliefs and attitudes with social contexts (Grunert and Juhl, 1995: 40). Koc *et al*, (1999: 2) argue that "efforts to provide food without paying attention to the symbolic role of food in people's lives have failed to solve food-security problems". With regards to community based food plans (see Appendix 5): "this dimension of food security is important in determining whether information and food-system innovations will be accepted in a country, given the social and ecological concerns of its citizens" (Koc *et al*, 1999: 2). However, the traditional symbology of food can be eroded. For example, Stroink and Nelson (2009: 263) argue that "reliance on the mainstream food system that is supported by food values that place convenience, ease, and price" can erode values of "localness or cultural connectedness of the food". The values that have emerged since the rise of the mainstream food system are now understood by marketers and industry as strong driving factors in consumption choices (Grunert and Juhl, 1995; Pearson, 2001; Wier and Calverley, 2002).

The organics industry represents the least controversial model to corporate risk perceptions of the food supply chain, because the corporatisation of organic food has seen organic products mainstreamed on supermarket shelves, leading to the conventionalisation of organic food (Lyons, 2006: 155). Likewise, buying local is represented with an Australian made brand, and fair trade and eco-labelling are widely available in supermarkets. Additionally, the mainstreaming of vegetarian diets as 'healthy' food is linked with the survival and competitiveness of the soy industry (Lockeretz, 1988; Moon *et al*, 2011). These factors serve to encourage consumers' passive dependence on ease and convenience in food provision at the expense of more contextualised values.

This thesis argues that the understanding of food safety and the acceptability of risks are predominantly framed by the government and business sectors. Partnerships and networks that share responsibility for food acceptability reflect these priorities. As it

currently stands, government driven support of community values and agreements in ethical consumerism only occur when it conforms to the food industry model. This thesis postulates that the inclusion of people's food values raises a question mark over the primacy of the TISN government/business alliance as the predominant gate-keepers of food safety. Research into community values and ethical consumerism indicate a potential for new partnerships and networks engaged with food acceptability issues and how dependencies can be re-located. This supports Habermas's (1974: 3) claim that in the absence of a broader dialogical approach centred in the praxis of consensus and negotiation, action will be restricted to social-technical recommendations.

Understanding the risks to food availability at all times

The term 'available', means that something is "suitable or ready for use, at hand and of use or service" (Delbridge and Bernard, 1998: 66). Availability requires that the food chain operates effectively to secure access to food for all people. The life-cycle of the food chain involves its production, distribution, handling and exchange of produce through to the consumer (Ericksen *et al*, 2009: 374; Koc *et al*, 1999: 1). This implies the need for an adequate investment in infrastructure to deliver the food from the production site to the consumer (Pingali *et al*, 2005: 5; de Haen, 2008: 28). As outlined in Appendix 4, the alliance of government and business provides the primary model for framing food availability on an every-day basis and during emergency events and recovery. As will be discussed next, the objectives of food availability are underpinned by the priorities of the Department of Agriculture, Fisheries and Forestry (DAFF) *National Food Policy Working Group* and the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) *Expert Working Group* (2010).

Priorities of the Department of Agriculture, Fisheries and Forestry (DAFF) National Food Policy Working Group

The aim of the *National Food Policy Working Group*¹¹ was to "advise government on issues and policies affecting Australia's food chain" in order to devise Australia's first

¹¹ The membership of the *National Food Policy Working Group* indicates the key industry representatives of interest, they are: Managing Director and CEO Woolworths; CEO Linfox Logistics; Deputy Chief Executive of CSIRO; Managing Director Simplot Australia; CEO of OBE Organics; President of the National Farmers' Federation; CEO Boost Juice; CEO Australian Food and Grocery Council; CEO Elders Ltd; CEO Choice (Australian Consumers Association); Managing Director and CEO Graincorp; ACTU Secretary; Academic representation of Nutrition and Dietetics; and the University of Wollongong (DAFF media release, 2010: 3).

National Food Plan (DAFF media release, 2010: 2). Minister for DAFF, Senator Joe Ludwig, called for “views from key industry representatives about how the Government can support industry growth and productivity” and stated that the working group would “provide a forum for active communication between the food industry and government to foster a common understanding of the industry’s priorities, challenges and future outlook” (DAFF media release, 2010: 3). This working group currently consists primarily of critical infrastructure elites within the food supply chain. As stated, group membership represents the goal of industry growth and productivity. This focuses on what de Haen (2008: 28) calls “productivity enhancement”, which involves investment in productivity, natural resources, infrastructure, knowledge, and markets to secure the availability of food. That is, they are focussing on the supply side of food provision and neglecting the demand side with its appeal to community-based food provision. From this background the *Issues Paper to Inform Development of a National Food Plan* was released in 2011 for public comment, and as a further development in this process, the *National Food Plan Green Paper* was released in 2012 (see Appendix 4). The final *National Food Plan* is forthcoming.

Priorities of the Prime Minister’s Science, Engineering and Innovation Council (PMSEIC) Expert Working Group (2010)

The Prime Minister’s Science, Engineering and Innovation Council (PMSEIC) *Expert Working Group*¹² produced the *Australia and Food Security in a Changing World* report in 2010. The policy recommendations for greater resilience to the impacts of climate change on the agricultural and food supply chain include increased investment in agricultural research and development to harness national expertise and take a leading role in national and international programs targeted to improving low input farming systems (PMSEIC, 2010: 65). It also involves the development of incentives to recruit and nurture innovative and adaptive farmers, researchers and associated professionals for the Australian food production and processing sectors

¹² Membership of the *Expert Working Group* of the PMSEIC includes: the CEO of the Australian Centre for Plant Functional Genomics at the University of Adelaide; the president of the Academy of Technological Sciences and Engineering; the Group Executive of the CSIRO Agribusiness division; the Head of the School of Animal Studies at the University of Queensland; a Senior Lecturer from the School of Environmental and Rural Sciences at the University of New England; a Theme Leader from the Climate Change Adaptation Flagship of CSIRO; an Independent Consultant; a Manager of Rural Affairs at the National Farmers’ Federation; the Director of Nutrition Research at the Illawarra Health and Medical Research Institute; and the Director of the Smart Foods Centre at the University of Wollongong (PMSEIC, 2010: 71).

(PMSEIC, 2010: 66). The potential of genetically modified (GM) technology for crop improvements and nanotechnologies are supported. The role of food technology research and development is highlighted as the central concern for food innovation (PMSEIC, 2010: 45, 48).

Risk perceptions about supermarkets in emergency re-supply

From these membership profiles, it is clear to see that supermarkets play a key role, together with the food and grocery sectors and the processing and packaging industries, as the gate-keepers of food safety. Dixon (2007: 30) and Delforce *et al*, (2005: 379) point out that in Australia, the two supermarket chains, Coles and Woolworths, control around 70% of grocery sales. They have been identified as privately owned critical infrastructure to the functioning of our food system.

Supermarkets serve as large centralised distribution points with a large provision for parking and links with public transport. This capacity underpins the government's operational procedure during disasters to re-supply bulk orders via delivery to the "normal retail/wholesale facilities" (SDMG, 2010a: 11) within that community. This default arrangement underpins the importance of supermarkets as key supply chain distributors under disaster conditions. In times of food crises, the Queensland's State Disaster Management Group (SDMG¹³) refers to the *Queensland Resupply Guidelines* for re-supplying isolated communities. The term 'isolated community re-supply' is activated when "the persons residing in that community have ready access to retail outlets however the retail outlet is unable to maintain the level of essential goods required due to normal transport routed being inoperable as a result of a natural event or events" (SDMG, 2010a: 6). Given the interdependence of the transport network, "distance is not considered an isolating factor if such communities... are accessible by road, rail or water transport" (SDMG, 2010a: 7). The aim of the re-supply guidelines is to "ensure that communities are not disadvantaged by isolation" (SDMG, 2010a: 9). The government currently undertakes to pay these additional transport costs to ensure communities have the basic

¹³ Membership of the Queensland SDMG includes: Director Generals of the: Department of the Premier and Cabinet (Chair); Department of Community Safety (Deputy Chair); Department of Communities; Department of Education and Training; Department of Employment, Economic Development and Innovation; Department of Environment and Resource Management; Department of Infrastructure and Planning; Department of Justice and Attorney-General; Department of Public Works; Department of Mains Roads; Queensland Health; Commissioner of the Queensland Police Service; Queensland Treasury; Assistant Director-General of Emergency Management Queensland; and the Chief Executive Office of the Local Government Association of Queensland (SDMG, 2010b: 52). However, with the change in State Government in 2012, many of these departments have been re-arranged.

essentials for survival and are not economically disadvantaged by paying for these costs. However, the guidelines also acknowledge that this approach is not sustainable over the long-term and does not promote self-reliance within communities (SDMG, 2010a: 9).

This raises the issue of our interdependent transport system. Food supply chain interruptions due to severe weather events have become the key emergent issue for understanding our vulnerability to food insecurity in times of crisis. The United Kingdom's *Draft Strategic National Framework for Community Resilience* (UKCO, 2010: 6) identifies that food supply chains "reach across the globe". The issue of our reliance on "complex and interdependent infrastructure" in the daily lives of people is articulated:

Transport networks enable us to move around with relative ease and independence. Our ability to live day to day relies on these systems operating efficiently. The consequences of emergencies are demonstrated by the impacts on the infrastructure we rely on.

In the *Critical Infrastructure Resilience Strategy*, the Australian Government defines critical infrastructure as (CoA, 2010a: 8):

Those physical facilities, supply chains, information technologies and communication networks which, if destroyed, degraded or rendered unavailable for an extended period, would significantly impact on the social or economic wellbeing of the nation or affect Australia's ability to... ensure national security

The critical point to understand here is that our critical infrastructure for food security consists of interdependent transport systems (i.e. built assets and facilities such as road and rail that extend over large distances requiring constant access to affordable oil-supply to function). It also consists of food supply chains (i.e. various players which form a network asset dependent on the efficient and uninterrupted functioning of this built environment and communication networks). To illustrate this point, the Australian Government explains that "bringing food from the paddock to the plate is dependent not only on particular key facilities, but also on a complex network of producers, processors, manufacturers, distributors and retailers and the infrastructure supporting them" (CoA, 2010a: 8). Given these dependencies, a key vulnerability in the Australian food supply is the just in time management of the logistics, meaning that there is rarely more than a few days of supply available in a supermarket. This supply is distributed through a handful of nodes of which all food must flow, apart from that produced locally. Reliance on even a few days' supply can be undermined by panic buying in anticipation of a disaster event that sees no available car parking at supermarkets, their shelves cleared and long queues at the

checkout (Lodree, 2011). This brings into question the planning horizons of logistics networks and their timely management (Ozdamar *et al*, 2004) given that when the demand for emergency relief occurs is close in time to the need for the demand (Farahani *et al*, 2009). The NSDR makes a clear statement on our dependence on our infrastructure and why we need to change (COAG, 2011: 2):

*Every year, Australian communities are subjected to the damaging impacts of disasters caused by destructive bushfires, floods, and severe storms. **The impacts of these disasters on people, the economy, our infrastructure** and the environment remind us of the need to continue improving our resilience to disasters (Emphasis added).*

Added to this increasingly complex mix, the development of our vast transport system as a key feature of our built environment and the use of oil are closely linked. The term “peak oil” refers to the increasing and widespread demand for oil and growing concerns for when oil production will peak (Cribb, 2010: 120). When demand outweighs access to affordable oil, then we have the potential for an “oil crisis” (Brunori and Guarino, 2010: 41). In recent times the impact of political unrest in Middle-Eastern countries on oil-supply has seen oil prices rise. Garnaut (2008c) advises that “oil prices have risen steeply over the last few years and are likely to remain well above those of the late 20th century”. Based on the United States Energy Information Administration, Garnaut (2008c: 506) states that, “world oil prices have more than tripled from an average of under US\$30 per barrel in the 1990s to an average of over US\$90 so far in 2008, with a peak of nearly US\$150 in July 2008”. Although prices dipped during the global financial crisis (GFC) the long-term trend is upwards (NASDAQ, 2013). Since then, the International Energy Agency¹⁴ (IEA) claims that the price of petrol will “only get more expensive” with oil prices “likely to rise 30 per cent over the next three years” from 2011 (Birol, cited in Herbert, 2011: 1). Crude oil spiked at more than US\$110 in 2011, just below that again in 2012 and the current price of crude oil as of February, 2013 sits at US\$98 (NASDAQ, 2013). The IEA warns that “governments around the world need to rethink their reliance on oil” (Herbert, 2011: 1).

It is speculated that higher oil prices will “improve the competitiveness of alternative fuels, such as synthetic diesels, bio-fuels and electricity” as they may “provide incentives to travel less or by more fuel-efficient vehicles and modes” (Garnaut,

¹⁴ “The IEA is an independent, multi-government agency formed out of the wake of the 1973 oil crisis. It forecasts oil production, monitors the international oil market and other energy sectors” (Herbert, 2011).

2008c: 506). However, Conceicao and Mendoza (2009: 1160) advise that an increasing global trade-off between food and bio-fuels is occurring to address the need for alternative energies due to oil prices and climate change reduction targets. Oil-supply vulnerability is now identified as an additional hazard to understand in terms of our need to move freight (DIP, 2009a: 39). Therefore food processing and packaging relies heavily on the food supply end of food distribution.

Risk perceptions according to the food sovereignty movement

Sovereignty is about having power and authority (Delbridge and Bernard, 1998: 1111). Food sovereignty movements therefore agree that disparities in authority over how food is made available are subject to the assumed on-going and effective operation of the food chain to secure access to food for all people. Food sovereignty literature further questions the appropriateness of labelling 'the community' as passive recipients and mere 'consumers' of food. Therefore, the use of the term ethical consumerism is also put to the test as 'consumers' are re-defined as 'co-producers' embedded within the food supply chain. This argument intrinsically addresses the issue of power – how, where and why is it located, and its consequences (Blanco *et al*, 2011). With regards to Food Sovereignty Movements (see Appendix 6), the research literature includes: The Alternative Agriculture Movement that articulates the nature of farmer relationships with this alliance (Beus and Dunlap, 1990; Lockeretz, 1986); the Slow Food and Eco-Gastronomy Movements in terms of buying arrangements and the "traceability of food" (Lyons, 2006: 164); the Community-Controlled Economic Development movement which provides a critical lens to the issues of community self-reliance (Green *et al*, 1992; Shuman, 1998); the Community-Supported Agriculture (CSA) movement that outlines methods for embedding food into the city (Borg, 2008: 10-14); the Community Food Security (CFS) and the Food Localisation Movements (FLM) which both articulate localised food strategies (Beus and Dunlap, 1990; Gottlieb and Fisher, 1998; Korten, 1998; Pelletier *et al*, 1999: 401; Welsh, 1997); the Food Citizenship and Soil Citizenship movements that highlight the central role of 'place' on citizenship (Delind, 2002: 223; Esteva and Prakash, 1998); and the Food Democracy and Food Justice movements that emphasise democratic and empowerment practices (Fisher, 1997; Welsh and MacRae, 1998: 246). The word democracy has its roots in Greek to mean "rule by the people". This involves the direct participation of citizens in the decision-making processes of government (Laxer, 2009: 7). As will be discussed throughout

this thesis, democratic practices can occur in a variety of ways. Placing the spotlight on these issues as they relate to food availability highlights tensions in the need for government driven support of these initiatives.

The issue of who to include as joint gate-keepers of food availability

Government driven support of community-based food sovereignty is not currently part of the official food availability model. In response to the development of the *National Food Plan*, the Australian Food Sovereignty Alliance¹⁵ (AFSA) released the draft of *A People's Food Plan* in 2012. The AFSA advocate for inclusion of community-based perspectives in food planning and its mission is to work toward, "fair, diverse and democratic food systems for the benefit of all Australians" (Parfitt *et al*, 2012: 2). With regards to community-based food plans (see Appendix 5), values and principles are expressed that reflect the commitment to re-locating power and wider collaboration (Parfitt *et al*, 2012: 2). AFSA critiques the *National Food Plan* arguing that the "business-as-usual" model is not an option for a sustainable and resilient food system (Parfitt *et al*, 2012: 4). The *People's Food Plan* is resonant with a number of other Australian based food security position papers that confirm the dominance of this government/food industry alliance, and provide compass points for relevant partnerships. They include: the Tasmanian Government's *Food for All Tasmanians: A Food Security Strategy* (2012); the Australian Heart Foundation's, *Food-sensitive planning and urban design* (2011); the Public Health Association Australia (PHAA) *A Future for Food: Addressing public health, sustainability and equity from paddock to plate* (2009); the Australian Conservation Foundation (ACF) *Paddock to Plate: Policy propositions for sustainable food and farming systems* (2009); the Australian and Queensland Red Cross *Food Security Position Paper* (2008); and the Victorian Eco Innovation Lab *Sustainable and Secure Food Systems for Victoria* (2008). Additionally, two other national precedents for the democratisation of national food plans include the Scottish Food Manifesto and the People's Food Plan for Canada (see Appendix 5).

Food sovereignty movements unanimously agree that food availability is defined and framed through the lens of government/food industry relationships with inequitable implications for democratic processes. In line with the PMSEIC approach for biotechnology and food innovation, and the *National Food Policy* focus on industry

¹⁵ Please see Appendix 5 for details on AFSA's membership.

priorities, the dominant view for stabilising Australia's domestic food systems is focussed on the industrialisation of the agricultural sector. As will be discussed in Chapter 6 on governance implications, Blanco *et al*, (2011: 304) postulate that these elitist models of power with privileged access are core features of policy networks. According to the democratic performance of networks, as scrutinised by network theory and theorists, they come under the banner of hierarchical modes of governance (Blanco *et al*, 2011), and perpetuate elite connections (Etzioni-Halevey, 1993), demonstrating the pitfalls of territorial representative democratic institutions (Nyseth, 2008) and the shortcomings of representative democracy (Sehested, 2004). The lack of resulting transparency and accountability is solidified by an exclusive approach to working group membership and consultation. These plans give voice to other social contexts and how their various risk perceptions are formed.

Food sovereignty calls for scrutiny of existing power relationships is a major tension as it serves to de-link food provision from the global corporate food system (Baker, 2004: 308), and provide alternative social safety-nets or back-up plans for addressing food-related disasters (de Haen, 2008: 28; Holzmann and Kozel, 2007: 8; UN, 2005: 11). However, degrees of de-linking may be deemed appropriate as the NSDR calls for alternatives to business-as-usual in disaster resilience. They advise that empowering individuals and communities to exercise choice and take responsibility requires "availability and accessibility of transparent, accurate and trusted sources of information in various forms" (COAG, 2011: 10). Additionally, members of a disaster resilient community should have "the confidence to seek information from multiple trusted sources to be better informed about local hazards and risks, and are able to exercise choice on how to deal with them" (COAG, 2011: 10, 11). Blay-Palmer (2009: 401) recommends that "shifting the discussion from food security to food sovereignty" enables "a suite of agendas" to be acknowledged. Furthermore, this makes "the food lens more visible and relevant to policymakers" (Blay-Palmer, 2009: 401). These arguments support Habermas's (1987) assertion that ideologies and discourses are derived from lived experiences that further generate diverse life-worlds. Speech forums permit the natural attitudes underlying the life-world, with its reproduced patterns of belief, legitimacy and perceptions to be reflected upon and made visible.

In summary, perceptions of risk and food availability are framed predominantly by the government and business sectors, allowing these players to exercise their influence. Productivity enhancement is seen as the avenue for framing the understanding of risk, and current arrangements for emergency food re-supply assumes this ongoing

arrangement. Partnerships and networks to share responsibility reflect these priorities with notions of community planning based on industry agendas. The emergence of national and international food sovereignty movements serves to recast partnerships and networks for facilitating democratic involvement of community based priorities. Government driven support of community-based food initiatives have been articulated through food sovereignty movements and the recent upsurge of community-based plans. The emergence of these plans is congruent with the NSDR calls for various forms of trusted sources of information as a necessary function of empowered, resilient communities. However, de-linking consumers from the corporate model is seen as a key tension as it re-positions consumers as potentially competitive co-producers. While the NSDR calls for shared responsibility and community empowerment, corporate food agendas intrinsically need ongoing, and indeed, growth in consumer food dependency. Availability of food is also closely interwoven and best understood within the context of the criterion of food access.

Understanding the risks to food accessibility

Access-ability has to do with the *ability* to access food (Ericksen *et al*, 2009; Koc *et al*, 1999; Walker *et al*, 2010). According to the Macquarie Dictionary, the word 'access' refers to the "way, means or opportunity of approach" (Delbridge and Bernard, 1998: 66). Ability is defined as "the power or capacity to do or act in any relation". This can involve "competence in any occupation or field of action, from the possession of capacity, skill, means, or other qualification" and the use of "talents; mental gifts or endowments" (Delbridge and Bernard, 1998: 2). Food sovereignty movements and community-based food plans serve to highlight the theme of 'ability' in accessing food.

Issues of food access involve ensuring direct and immediate access to food (de Haen, 2008: 28). Indicators of one's ability to directly access food can be understood in terms of the following factors. First, the cost of food, socio-economic dynamics, and perceptual factors has been considered by welfare and health professions. Second, location and mobility factors have been considered by the urban and environmental planning profession. The themes that follow demonstrate agreements within the research literature on the key issues that underpin concerns over food access and highlight the areas of tension on how to address them.

Safety-nets for food access: Consideration of food costs and socio-economic dynamics

The *National Strategy for Disaster Resilience* (NSDR) advocates for widespread an approach which is mindful that: “Australian communities are varied in their composition and in their level of exposure to disaster risk” (COAG, 2011: 2). With this in mind, it advises that: “within individual communities, certain members are more vulnerable and may need tailored advice and support” (COAG, 2011: 2). According to the review of the literature, this applies to issues of food affordability and its associated socio-economic factors. The food plans as they are devised by both the government/industry alliances (Appendix 4) and the community-based alliances (Appendix 5), agree that this is important; however, they approach the issue in different ways.

Risk perceptions about supermarkets as gate-keepers of food affordability

In terms of food costs and income to pay for those costs, supermarkets are highly competitive which tends to put smaller operators at a disadvantage (Chung and Myers, 1999; Kaufman *et al*, 1997). In terms of affordability the supermarkets can out-compete smaller local grocery stores because they have a much greater “throughput” of stock and a wide variety of goods for sale (Lawrence and Burch, 2007: 2). For example, the King Kullen Grocery company store which opened in Queens, New York in 1930 used the slogan, “pile it high: sell it low” (Lawrence and Burch, 2007: 3). This provision of cheap food in Depression-era America was a success for the consumer and the company. As Lawrence and Burch (2007: 3) illustrate “in adopting the principle of mass merchandising (selling high volumes at relatively low margins), King Kullen became a model for future supermarkets operations”. As Australia’s national broadcaster, the Australian Broadcasting Corporation, or “the ABC”, announced that our current ‘price wars’ in milk, bread, eggs and chicken illustrate the competitive advantage of supermarket chains in delivering cheap staples to the consumer (Laird, 2012). Additionally, during the Queensland floods of 2010-11, Coles and Woolworths were reported by the Herald Sun¹⁶ to combine their efforts in order to “supply supermarkets in affected areas with fresh food, using supplies from as far away as Adelaide to stock flood-affected areas in southern Queensland” (Wilson, 2011: 1). Growcom¹⁷ CEO Alex Livingstone (Cited

¹⁶ The Herald Sun newspaper is a Victorian-based subsidiary of News Ltd.

¹⁷ Growcom is an independent, not-for-profit organisation that advocates for the commercial interests of the horticulture industry.

in Wilson, 2011: 1) predicted that “southern state producers may move to speed their production to take advantage of higher prices” subsequent to this event. With these factors in mind, access to supermarkets has been argued as an important feature of food security.

There is, however, some divergence in the literature on associations between socio-economic factors and accessibility of fresh food outlets (Black *et al*, 2011). On the one hand, socio-economic factors can underlie spatial disparities in food access. For example, several American studies have drawn links between lower income neighbourhoods with less access to healthy food options provided by supermarkets, and more access to poor quality foods and fast food outlets (Beaulac *et al*, 2009; Morland *et al*, 2002; Powell *et al*, 2007a, 2007b). Conversely, some studies in the UK found that socio-economically deprived areas house more food stores overall than affluent areas (Cummins and Macintyre, 1999 and 2002; White *et al*, 2003). New Zealand stores were generally closer in the most deprived areas (Pearce *et al*, 2007) and with few differences in food store availability among urban demographic areas in Australia (Winkler *et al*, 2006). Additionally, obesity has been linked with reduced access to supermarkets (Inagami *et al*, 2006; Morland *et al*, 2006; Morland and Evenson, 2009), with other studies demonstrating no linkages with neighbourhood food store availability (Jeffery *et al*, 2006; Mobley *et al*, 2006).

In spite of the government/industry arrangement, food costs and the income to pay continue to pose risks. Risk perceptions that emerged from the research literature included: issues of affordability (Ball *et al*, 2009; Hendrickson *et al*, 2006); the identification of price-barriers (Cassady *et al*, 2007); inequalities in retail choice (Kirkup *et al*, 2004); price variations according to store location (Kaufman *et al*, 1997; McDonald and Nelson, 1991); volatility in the global commodity markets and subsequent costs of food (Cohen and Garrett, 2010: 467; Conceicao and Mendoza 2009: 1160); and the economic slowdown due to the global financial crisis has become an emergent issue in food affordability (Brunori and Guarino, 2010: 41; Conceicao and Mendoza, 2009: 1160).

Risk perceptions about poverty and food affordability

These risk perceptions are even more magnified by those living in poverty. Borg (2008: 2, 3) identifies that as of 2008 approximately 5% of the Australian adult

population were food insecure with 60,000 Queenslanders requiring Foodbank assistance each week. The Red Cross *Food Security Position Paper* identifies the growing pockets of food insecure people in Australia. Single parents and indigenous people are at higher risk of food insecurity (NSW Centre for Public Health Nutrition cited in Borg, 2008: 7). The most significant cause of food insecurity was found to be low disposable income, unemployment and high living costs (Borg, 2008: 2, 7). These factors persist today. In 2012, the Australian Council of Social Services (ACOSS) released its national food report entitled, *When There's Not Enough to Eat: A National Study of Food Insecurity among Emergency Relief Clients: Poverty in Australia*. It states that the most striking feature of the risk of poverty is "those whose main household income source is social security payments" (ACOSS, 2012: 26). They argue that: "It is likely that most of these people live in households where people receive part time earnings only, or are raising children on a low wage" (ACOSS, 2012: 27). Malnutrition can also result from poverty (Borg, 2008; IFRC, 2010). Anglicare (2012) also advocates for the food disadvantaged and says that Australia's poorest are going without food, sometimes for up to 24 hours. This report is based on a national survey of families receiving its emergency support. They claim that up to 45,000 Australian households cannot always afford food. Anglicare director Kasy Chambers said that: "Twenty-two thousand adults are going without food for a whole day most weeks... to eke out family budgets" and "almost 1 in 10 of the households surveyed reported their children did not eat for an entire day on a regular basis" (Hall, 2012: 1). They assert that there are further flow-on effects to these dynamics (Anglicare, 2012: 137):

In short, we can see that food insecurity is isolating. All manner of normal social interactions, for children and adults, become impossible when you can't pay your way, join in, or offer hospitality. It denies belonging and participation through the dignity of contribution. The emotional impact and consequent stress and tension in families and across social groups are evident in the interviews and personal accounts.

The International Federation of Red Cross and Red Cross Societies (IFRC) is the world's largest humanitarian organisation which coordinates international assistance to victims of disasters and emergencies. The IFRC produced the *World Disaster Report* in 2010 with a focus on urban risk, stating that: "food insecurity is another type of disaster event that is now recognised as seriously affecting urban dwellers" (IFRC, 2010: 37). It is argued that urban food insecurity is largely "considered to be a food access problem" borne of affordability and socio-economic issues rather than a "food availability problem" which can be reduced in cities during disaster conditions.

Should those conditions become protracted, food insecurity as it relates to poverty and malnourishment are reported outcomes (IFRC, 2010: 37, 38).

The issue of who to include as joint gate-keepers of food access for the socio-economically disadvantaged

Borg (2008: 15) recommends “viewing food security as part of a broader understanding of livelihood security and wellbeing”. Actions need to be place-based, long-term and allow people to identify their own capacities, vulnerabilities, needs and plans for interventions. Government interventions are referred as safety-nets, which are used as a metaphor for safely catching those who are rendered vulnerable to food disadvantage in government or support agency programs and resources. As will be discussed next, social safety-nets can involve a mix of formal and informal measures.

Formal safety-net measures include financial interventions such as subsidies for essential goods, the waiving of fees and direct cash transfers (Alwang and Norton, 2011: 142). Most government supported interventions take the form of emergency food relief such as re-supply during floods, meals on wheels, and Red Cross *Good Start Breakfast Clubs* of which the recipients, for good reason, pay nothing (Borg, 2008: 15-19). Welfare based, Non-Government Organisations (NGOs) not only seek government support for emergency relief, but also outline social policies to address socio-economic disparities and employment issues as they relate to food access. They are important partners for providing safety-nets for food disadvantage (see Appendix 7).

Formal safety-net measures also include health policy, involving the redistribution of food or services through health care (Baxter and Mechanic 1997: 7; Alwang and Norton, 2011: 142). Some examples of major nutritional programs in the USA include food stamps, supplemental food programs for women and children and school breakfasts and lunches (Kennedy, 1999: 325). The Local Government Association of Queensland (LGAQ) *Healthy Communities Project* also constitutes a social safety-net policy through the broader agenda of healthy living¹⁸.

¹⁸ The efficacy of this project and its funding is under review as of December, 2012. No details concerning continued funding of the *Healthy Communities Project* is available on the LGAQ website.

Finally, formal safety-net measures can also include labour policy, something that is recognised by the World Bank. This requires acknowledgement of equity issues involved (Holzmann and Kozel, 2007: 8) such as generating employment through cash or food (Alwang and Norton, 2011: 142). From the Australian Red Cross perspective, Borg (2008: 15-19) suggests that interventions can include two categories which may be used at different times depending on the need. They are: 1) food security development such as local food initiatives, training and education, and community kitchens and gardens; and 2) food security advocacy such as food councils, training, advertising, recruitment, and interagency networking. The community-based food plans provide a number of compass points for addressing employment issues through local food (see Appendix 5).

Informal safety-net measures include: family members helping out through the provision of employment and food; sharing resources and mutual assistance arrangements; and receiving loans from family or community groups (Alwang and Norton, 2011: 142). Informal measures may also be encapsulated in community-based attempts to deal with the structural causes of food insecurity. Key features involve: strengthening diversity; building local institutions and support networks; and reinforcing local knowledge (Pingali *et al*, 2005). The NSDR concurs that: “increased disaster resilience is not solely the domain of emergency management agencies; rather, it is a shared responsibility across the whole of society” (COAG, 2011: 3). Community-based food plans (as outlined in Appendix 5) aim to articulate how our most vulnerable can be supported by our informal relationships by sharing our resources and looking out for each other. They also aim to give a greater voice to socio-economic concerns. However, the main issue is again one of inclusion and empowerment for various community-based food initiatives to address these disparities. Chapter 6 discusses avenues for ‘formalising the informal’ through incremental steps within existing agencies. Inclusion of the broader socio-economic arguments within the food security debate is resonant with Habermas’s (1992: 89) that “when someone correctly interprets an unclear situation, he or she not only has the success of advancing just a bit towards the truth, but may also influence a self-understanding which in the long-run helps determine political orientations”.

In summary, risk perceptions of food disadvantage and the need for welfare measures have resulted in partnerships between government health and community agencies, and between government and community groups to provide help and support the most vulnerable. However, government driven support of community-

based food initiatives is primarily through food welfare and tenuous funding of community health development. These may address symptoms of socio-economic issues and not the cultural dynamics which underlie them. Community-based food initiatives aim to address these underlying dynamics and therefore represent untapped partnerships. As will be discussed in Chapter 6, formalising these informal arrangements may be a pathway forward in community-based food resilience. These community initiatives also have implications for planning for food access.

Planning for food access: Consideration of complexities in location and mobility

Risk perceptions about food location and mobility

The NSDR call for understanding and mitigation of food risks can be seen as a planning issue for local governments, as the deliverers of community services, and sustainable urban design. Residential proximity to food outlets is a planning concern. Location refers to the proximity in which people live in relation to food outlets. Some risk perceptions that emerged from the research literature include: location in relation to shopping outlets (Ball *et al*, 2009; Cummins and Macintyre, 1999; Kaufman *et al*, 1997); availability and accessibility of supermarkets (Apparicio *et al*, 2007; Latham and Moffat, 2007; Smoyer-Tomic *et al*, 2006, 2008); food store availability (Powell *et al*, 2007b); and appropriate urban planning measures to overcome spatial disparities (Black *et al*, 2011). Mobility is also identified as a key feature of the ability to access food. Some risk perceptions that emerged from the research literature include access to independent transport and travel means to visit supermarkets (Coveney and O'Dwyer, 2009; Garasky *et al*, 2004) or conversely, the lack of transport due to low-income is a potential constraint to access (Cotterill and Franklin, 1995). Lack of attention to these factors contribute to health inequalities and are identified as potential obesogenic drivers in the urban built environment (Townshend and Lake, 2009). The link between poverty, obesity and food insecurity has been well researched (Black *et al*, 2010; Borg, 2008). Several studies have drawn links between low income neighbourhoods and elevated rates of obesity (Drewnowski *et al*, 2007; Pothukuchi, 2009); individual and area-level influences (Janssen *et al*, 2006a); factors depriving neighbourhoods (van Lenthe and Mackenback, 2002); and women's income (Mobley *et al*, 2006). These findings support the claim that socio-economic status influences healthy food consumption (Baker *et al*, 2006; Chung and Myers, 1999; De Irala-Estevez *et al*, 2000; Inglis *et al*, 2005) and attitudes and beliefs

about healthy lifestyles and the role this plays in food awareness (Wardle and Steptoe, 2003). Food choices are therefore heavily laden with perceptions (Richards and Smith, 2007; Smith and Morton, 2009).

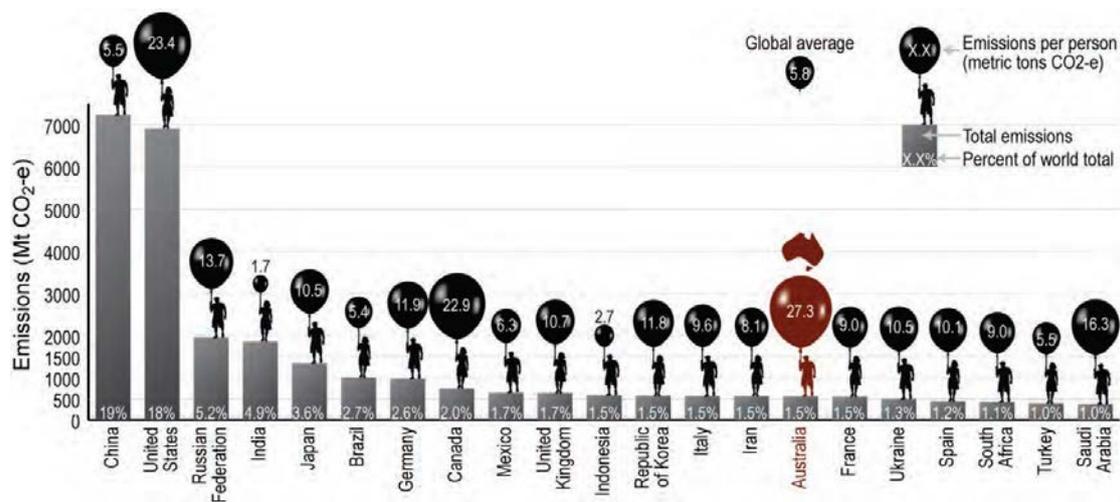
Additionally, planning for transport is important, as is the physical ability to walk or drive to food outlets (Borg, 2008: 2, 7). A neighbourhood's walk-ability is defined by provided opportunities for shaping physical activity and obesity risk. Access to shops along with walking destinations and recreational facilities are therefore key planning considerations (Black *et al*, 2010; Frank *et al*, 2004; Gordon-Larsen *et al*, 2006; Inagami *et al*, 2006; Mujahid *et al*, 2007; Saelens *et al*, 2003). Other factors are the physical ability walk and carry groceries including the knowledge and skills to budget, prepare and store food. The social, cultural and mental factors such as self-esteem, lack of time and unfamiliarity with available foods are also relevant (Borg, 2008: 2, 7). As discussed next, planning for these factors is further compounded by rapidly increasing urban populations, climate change impacts and potential vulnerabilities on access to supermarkets as our main provision of food.

Risk perceptions about our rapidly increasing urban population

Planning for a rapidly increasing population is a key consideration for planners in South East Queensland. The NSDR states that, "the increasing complexity and interdependencies of social, technical, and infrastructure systems are... playing a role in increasing our vulnerability to disasters" (COAG, 2011: 2). Our transport networks enable us to move around with relative ease and independence, and our food supply chain reaches across the globe (UKCO, 2010: 6). The widespread dependencies on our transport infrastructures also increase carbon emissions. Queensland's transport sector is the fourth largest emitter of greenhouse gases in that state and they have increased by almost 59% between 1990 and 2007 (DERM, 2009: 29): "moving people, goods and services to where they need to be underpins Queensland's economic and social wealth". Therefore the key challenges for reducing Queensland's emissions involve Queensland's large geographical size, it's dispersed and continued high population growth and finally a large resource industry. These factors are set to continue to increase the state's transport-related emissions (DERM, 2009; 29).

Australia’s greenhouse gas emissions represent 1.5% of global emissions but “Australia produces more carbon pollution per head of population than any developed country in the world, more even than the world’s biggest economy, the United States” (CoA, 2011: xi). It is also one of the top 15 polluters in terms of total annual tonnage of carbon dioxide equivalent emissions (see Figure 2). Due to the industrialisation of food, the conference on “Food security and environmental change” held in Aril 2008 in Oxford, UK, identified that a key topic was “managing carbon embodied in food” (cited in Ericksen *et al*, 2009: 375). Cribb (2010: 120) refers to the use of petroleum to power food production as “eating oil”. For the consumer, or end-use phase of the food supply chain, the environmental and social impacts of the oil embedded within these foods represent uncaptured costs.

Figure 2: Global comparison — overall and per person emissions in 2005



Note land-use change is excluded.

Source: Climate Analysis Indicators Tool, Version 8.0 (World Resources Institute, 2010) cited in CoA, 2011: 13).

A regional vision of the *South East Queensland Regional Plan (SEQR) 2009-2031*¹⁹ is to address oil-supply vulnerability. In terms of risk identification and responding to this, the key principle is to “identify people, economic sectors and areas that are at risk due to oil-supply vulnerability and increase their resilience to the effects of oil-supply vulnerability” (DIP, 2009b: 46). Planning for more localised food provision is

¹⁹ The *SEQR* is currently being reviewed as is the Sustainable Planning Act and the Local Government Act. The intention of the new state government is to cut ‘green tape’ so it is likely that many of the initiatives set up under the former government will be annulled. Similar changes are happening at the local government level.

currently an emergent policy issue. A range of Brisbane City Council (BCC) policies are beginning to acknowledge, at least in rhetoric, that planning for local food is a desirable course of action for a growing population dependent on carbon-embodied food (see Appendix 10). Examples include: *Our Shared Vision: Living in Brisbane 2026*; the *Brisbane City Plan*; *Brisbane's plan for action on climate change and energy 2007*; the *WaterSmart Strategy*; the *Brisbane Clean Air strategy*; the *Green Heart Program*; the *Food in the City Strategy*; and BCC's *Community Gardens and City Farms Strategy 2009*. These policies also acknowledge the significance of climate change events on a growing population's need for food production.

Risk perceptions about climate change events and our dependence on the food production industry

It is internationally recognised that areas prone to drought, flood, cyclones and other hazards can weaken agriculture-based livelihoods (UN, 2005: 11). The IPCC (2007 and 2012) specifically mentions Australia as a country that is particularly vulnerable to the impacts of climate change, particularly with regards to the increased risk of extreme weather events. The Council of Australian Governments, the Australian federal government and the *Garnaut Review* also acknowledge that climate change will result in the increase severity and frequency of these extreme weather events in Australia (CoA, 2011: x, 4; COAG, 2011: 2; Garnaut, 2008b). The Australian Government's *Climate Action Plan* outlines that due to climate change, Queensland can expect a decline in agricultural production due to higher temperatures, reduced rainfall and extreme weather events. The primary industries in Queensland are "particularly vulnerable to the impacts of climate change and changes in global economic activity" (CoA, 2011: 5). This premise is worrisome since the occurrence of more frequent drought and drier conditions with long-term impacts on economic returns have been predicted (IPCC, 2007, 2012).

The systemic and far reaching urban and rural vulnerabilities due to severe weather events are well documented. The NSDR recognises bushfires, floods, severe storms and coastal erosion as yearly and ongoing impacts not only upon the natural environment, but also on Australian communities, infrastructure and the economy (COAG, 2011: 2). Cyclonic activity, drought, heat waves and inundation are linked to land degradation, crop damage, livestock deaths, wildfires, water supply disruption, power outages, disease outbreaks and soil erosion among other things (Cribb, 2010: 137). According to the NSDR, Australia's "vast and diverse regions, landscapes and

climatic variations mean we will continue to be at risk from the damaging impacts of disasters” (COAG, 2011: 7). The Australian Red Cross acknowledges that the changing nature of vulnerability may be additionally impacted by the expected increase in extreme weather events (Borg, 2008: 9). Vulnerabilities are now understood as multi-faceted and changeable. The NSDR states why we need to change from business as usual (COAG, 2011: 2):

The size, severity, timing, location and impacts of disasters are difficult to predict, and our changing climate increases the uncertainty about future risks. Scientific modelling suggests that climate change will likely result in an increased frequency and severity of extreme weather events. Rising sea levels are increasing the likelihood of coastal erosion and severe inundation.

With these factors in mind, in 2008, the then Prime Minister Kevin Rudd stated that “climate change represents a most fundamental national security challenge for the long term future” (cited in COAG, 2011: 2). Likewise, the *Food Security and Environmental Change Conference* held in April 2008 in Oxford, UK, identified that a key topic of the conference was “adaptation to climate change to enhance food security” (cited in Ericksen *et al*, 2009: 375). These links between climate change with more frequent and severe weather events and the resulting concern with disaster mitigation and adaptation are mounting (de Haen and Hemrick, 2007: 31). Garnaut (2008a) argues that “understanding the implications of climate change at a local level will be centrally important in the future planning” of emergency services. In terms of Queensland’s response, one regional vision of the *SEQRP 2009-2031* is to address climate change²⁰ (DIP, 2009b: 11). It is stated in that: “The sooner we start reducing greenhouse gas emissions and adapting to the effects of climate change, the smaller the cost of climate change will be in terms of the region’s economic growth and lifestyle” (DIP, 2009b: 39). With regards to natural hazards and the subsequent need for climate change adaptation, the key principle is to “increase the resilience of communities, development, essential infrastructure, natural environments and economic sectors to natural hazards including the projected effects of climate change” (DIP, 2009b: 44).

²⁰ With the election of the Newman government in 2012 climate change has disappeared from the Queensland government agenda, the Office of Climate Change has been shut down, the regional plan is being reviewed, and there is a move to change legislation to cut ‘green tape’.

Risk perceptions about centralised food distribution points and the growing population's access to food

During the 2010-11 Queensland floods, the *WAtoday* newspaper, a subsidiary of Fairfax Media, reported that “The nation's biggest supermarkets are flying, shipping and trucking tonnes of supplies to isolated parts of Queensland, with vital transport routes severed by floodwaters”, and fresh food was proving most difficult to distribute (Greenblat and Miletic, 2011: 1). Coles and Woolworths had combined to “supply supermarkets in affected areas with fresh food, using supplies from as far away as Adelaide to stock flood-affected areas in southern Queensland” (Wilson, 2011: 1). Distribution had become a key issue. It was reported that Linfox had “150 trucks stranded after making deliveries to supermarkets” (Wilson, 2011: 1). Additionally, Coles said it was “working around the clock to get food back on the shelves of 150 affected Queensland supermarkets with the assistance of the Queensland Government, especially the 50 stores isolated by flood waters”. Coles managing director, Ian McLeod, said that “at their worst, the floods inundated four Coles stores, closed a further 11, and cut food supply to over 50 stores across the state” (AFN²¹, 2011: 1).

Hugh Tobin, from Ausveg, an organisation which represents the vegetable grower's industry, said: "There are problems from the farmer level to the transport network and the Brisbane markets have also been shut down" (cited in Greenblat and Miletic, 2011: 1). As the main fresh food distribution point for Brisbane, the Brisbane Markets opened for business in 1964 in the suburb of Rocklea. The markets were also shut for trading in the January/February flood of 1974. It was reported that the flood “at its peak left only the roofs of market buildings above water” (BML, 2007: 1). Now managed by Brisbane Markets Limited (BML, 2007: 1), they report of the 1974 flood:

The outlook at that time in much of metropolitan Brisbane was one of desolation. The population was stunned by the catastrophe of the flood. A breakdown in the supply of vital fresh foodstuffs would have been unbearable to people already faced with despair. But there was no workable fresh fruit and vegetable market, it was under water, and even when the water receded the Market was a disaster area full of mud and rotting food.

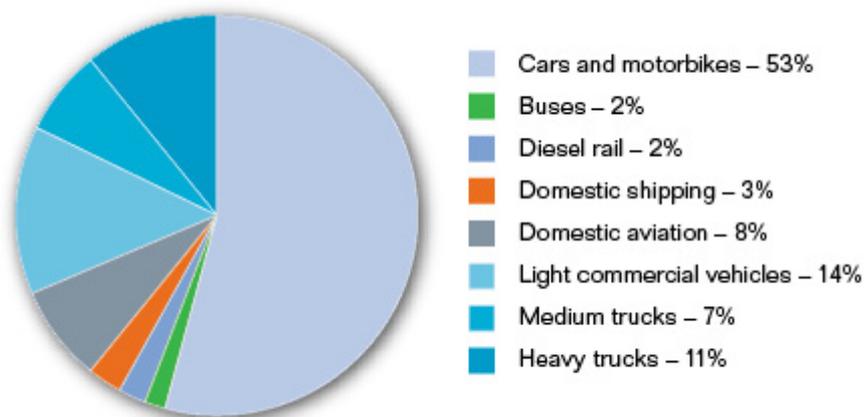
The BML (2007: 1) stated that: “Under the existing ownership model, which has a strong industry focus, it is planned that the current Rocklea site will be the home of the Brisbane Markets well into the future”. No plans have been published by the BML

²¹ The Australian Food News (AFN) is an online news site for the food industry

to reassess this position since the 2010-11 floods which left a remarkably similar picture to the 1974 profile above.

In addition to the vulnerability of Brisbane's fresh food distribution point, supermarkets rely heavily on the transport system to distribute goods to their centralised retail outlets which in turn are characterised by their large parking lots. Distribution of food is also carbon intensive from the demand-side of the equation. As such, the *SEQRP* identifies that car dependency needs to be reduced (DIP, 2009b: 11). The Australian Government states that: "Australia emitted 565 million tonnes of carbon pollution in 2009, the latest year with available figures. On a per person basis, that is the equivalent of every Australian adult driving a medium-sized petrol-powered car almost 200,000 kilometres during the year" (CoA, 2011: 11). Passenger travel per person has increased as incomes have grown faster than the costs of car use (see Figure 3) (ABS 2008c, 2008d cited in Garnaut, 2008c). Emissions from the transport sector have grown rapidly with the increased demand for transport, particularly higher-emissions forms of transport (Garnaut, 2008c).

Figure 3: Australian domestic transport emissions, 2006



Note: Excludes electric rail and trams. Source: Department of Climate Change (DCC) (2008a) Australia's National Greenhouse Accounts, Australian Greenhouse Emissions Information System (cited in Garnaut, 2008c: 505).

Garnaut (2008c: 506) advises that the "increases in the scarcity and price of oil will profoundly affect the costs of our current transport patterns... and modes of transport". Garnaut (2008c: 505) outlines that:

Low fuel prices, in combination with patterns of urban development and the low priority given to public transport, are a key factor behind the extensive use of fuel-intensive modes of transport in Australia, including trucks and cars. These modes accounted for over 85 per cent of Australia's transport emissions in 2006.

As previously stated, supermarkets are one of the most globally influential transnational and corporate forces (Lawrence and Burch, 2007: 1). Dixon (2007: 30) and Delforce *et al* (2005: 379) outline that in Australia, the two supermarket chains, Coles and Woolworths control around 70% of grocery sales. They have been identified as privately owned critical infrastructure to the functioning of our food system. Supermarket reliance on our interdependent transport system, which is also understood as critical infrastructure, results in significant vulnerability to climate change impacts on Australia's economic prosperity (CoA, 2011: x, 5).

Illustrative examples of the inherent vulnerability include economic modelling for the *Garnaut Climate Change Review* in 2008 which estimated that the "negative impacts of unmitigated climate change may produce Australia's gross national product by around 2 per cent by 2050 and by around 7 per cent by 2011. Most of this would be due to reduced performance or failure of infrastructure" (CoA, 2011: 6). A recent analysis by the *Department of Climate Change and Energy Efficiency* of the risks in a scenario with a 1.1 metre sea level rise on coastal assets found that "more the \$266 billion worth of homes, industrial properties and road and rail infrastructure would potentially be exposed to inundation and erosion impacts around the turn of the century" (CoA, 2011: 6). Additionally, the 2011 flooding in Queensland and Cyclone Yasi provide an "insight into the types of events that Australia could increasingly face. These events are estimated to have cost the economy about \$12 billion in lost output" (CoA, 2011: 6).

McMichael (2007) asserts that Al Gore's movie *An Inconvenient Truth*, did not address one of the most inconvenient truths - the contribution of industrial agriculture to green-house gas emissions. McMichael contends that analyses of food regimes can shed a lens on the intractable problems facing the global community with industrial food supply chains. In summary, our rapidly increasing urban population relies on the uninterrupted functioning of the current food supply chain as critical infrastructure. This highlights the potential problem for the end-user side of the food supply chain in terms of continued and growing dependency on cheap oil, carbon intensive food, and the absence of climate impacts. The capacity for authorities and communities to respond to food-related disasters will be subject to a culmination of effects and interconnections between climate changes, vulnerabilities in our food supply chain, oil demand and rapidly populating urban centres. This requires getting parties to work together in new and flexible ways for food disaster preparation.

The issue of who to include as joint gate-keepers of planning for food location and mobility

The complexities of planning for food location and mobility are subject to a number of interconnected and largely uncertain dynamics including climate change impacts on our critical infrastructure and the growing urban population's predominant dependence on the food industry's capacity to maintain uninterrupted supply to centralised food distribution nodes. The presence of these complex relationships support Habermas's (1987) notion that the life-world is the inter-dependence between one's life and the world. The life-world is therefore the inter-subjective, lived experience of various individual and collective actors. The clash of worldviews sees varied degrees of trust in the food industry's capacity to maintain uninterrupted supply. Planning for food location and mobility reflects high levels of trust in this capacity. The urban agriculture worldview is predominantly viewed by planners with a comparable degree of distrust.

Lawson (2004: 151) cites three reasons why urban agriculture innovations are not a priority for planners: 1) the use of garden space is seen as temporary; 2) gardening is associated with private land-use; and 3) uncertainty on how to engage with people to run urban agricultural projects. Other tensions include: low levels of urban food awareness in land-use planning (Howe, 2003: 258), overcoming bureaucratic mindsets (Jamison, 1985: 473), perceptions (Francis, 1987: 9) and "whims of city planners" (Patel, 1996: 45). There are reports of the continued lack of land-use rights and re-zoning needed of such projects (Moskow, 1999: 133) which may be promoted by the views that small food producing units are of limited relevance or impact to food security (van Vuuren, 1988: 4; Moskow, 1999: 133; Patel, 1996: 45). With these tensions in mind, Harris (2009) and Howe (2003) advise that planners are situated to support urban agriculture. Chapter 6 argues that planning has a key role to play in formulating community-based food demonstration projects.

In summary, the understanding of food access risks as they apply to location and mobility are acknowledged by local government planning measures. However, an abundance of planning rhetoric in urban food procurement is not matched by planning actions. Partnerships and networks to share responsibility for access to food have seen the emergence of policy objectives that recognise location and mobility as important issues. Additionally, health dimensions are acknowledged. Government driven support of community-based resilience and food initiatives is emerging as part of the food access agenda or addressing issues of location and mobility. Local

government policies signify an evolutionary step from national food policy priorities towards recognition of food access as a planning issue.

Conclusion

The main research question of this thesis is: *Can opportunities for the democratic management of the networks necessary for community and school gardens to function as hubs for building social resilience and food security be facilitated?* To progressively scaffold this multi-faceted question, the research sub-question addressed in this chapter was: *What is food security and how can we understand the risks to achieving it?* This chapter applied the NSDR criteria for leading change and coordinating effort on understanding risks to food security risk perceptions in the literature. Risk perceptions were highlighted as they emphasise that risk can be constructed in different ways depending on social contexts. It was found that a richer appreciation of food-related risk dimensions can be derived if it is acknowledged that individuals, organisations, communities and ultimately, their cultures, are all key elements in system design, operation, monitoring and failure of emergency and sustainability measures. Re-articulating the possibilities for food provision has demonstrated tensions in where notions of *dependency* and *control* can be appropriately located. On the one hand, the notions of appropriate placement of dependency and control are subject to the food industry's risk perceptions of its own economic survival with key partnerships based on this. Outcomes for food security repeatedly highlight that these notions of dependency and control often result in unequal and often inequitable social and environmental consequences. On the other hand, community-based food initiatives have demonstrated compass points for government-driven support. Risk perceptions which include community-based and cultural values of food reveal various underlying and inequitable dynamics in our current food system. Giving a 'voice' to these risk perceptions will further clarify pathways to community-based partnerships and shared responsibilities upon which government support can be adhered. Therefore, the issue of who to include as gate-keepers of food availability, adequacy and access is a key tension.

Finally, the dimensions of food availability, adequacy and access raise questions as to the sufficiency of the food chain life-cycle to meet the needs and values of the given culture. From these three key dimensions, we can see that food security has moral dimensions to be addressed (Ericksen *et al*, 2009: 374). Issues of food equity will need consideration of socio-economic differentials (Koc *et al*, 1999: 1) and the

importance of customs (Ericksen *et al*, 2009: 374). As the notion of food security continues to grapple with increasing complexities, it has arguably evolved to include the need for a long-term focus for the food supply chain. This serves to deepen our understanding of potential risks and moral responses. As such, the challenges of food security require an integrated approach so that mutual understandings and common interests may be arrived at. In light of these complexities, speech forums provide a deliberative and integrative platform for reaching understanding and cooperative outcomes between the varieties of disparate worldviews (Habermas, 1992). The NSDR attempts to answer Habermas's call for communicative action by intentionally bringing worldviews together. Accordingly, the NSDR has advocated that (COAG, 2011: 7):

Leaders from all levels of government, business, the not-for-profit sector and communities strive to recognise and understand the risks disasters pose to their own and their community's interests. They take responsibility for mitigating these risks and apply the concept of disaster resilience to strategic planning processes, and to those roles where they can exercise influence.

Chapter 4 on social resilience and the prospects for resilience-building activities will further contextualise how mitigation of those risks is currently framed and how the concept of resilience needs a broader scope.

Chapter 4: Social resilience-building activities and the role of government support

Introduction

The Australian Government acknowledges the importance of building the capacity of communities to be self-sufficient in times of crisis. Government has a role to play in facilitating community efforts in strengthening their own resilience (COAG, 2011). This chapter will focus on the second NSDR priority action for leading change and coordinating effort through support of community-based resilience efforts. It will analyse the reviewed literature on how social resilience is understood and how it relates to food security and climate changes. The research question addressed in this chapter is: *What is social resilience and how can it be applied to the problems of food security and climate changes?* The *National Strategy for Disaster Resilience* (NSDR) advocates that (COAG, 2011: 7):

*Governments help business, not-for-profit and community leaders by preparing and providing guidelines, information and other resources to support community efforts in **resilience-based planning, including resilience-building activities**, disaster risk management, stakeholder and **community engagement**, disaster response and recovery and **capability development** (Emphasis added).*

Chapter 6 clarifies the governance implications of what resilience-based planning could look like. As a precursor to this, this chapter serves to highlight the potentials and challenges for resilience-building activities, how they relate with community engagement, and the development of community-based capabilities. The first theme will examine the role of 'Resistance' and 'Recovery' as resilience-building activities in the context of food security and climate changes. The key issue in terms of resilience-based planning is its focus on organisational resilience, internal to agency concerns and to the exclusion of community-based resilience activities. Integrating resilience into the prevailing Prevent-Prepare-Respond-Recover (PPRR) model of emergency management and broadening the scope of resilience are discussed as challenges.

The second theme explores the role of 'Betterment' as a resilience-building activity in light of climate impacts and food security concerns. The betterment approach as a form of capability development is highlighted and reveals four sub-themes of interest. They include: 1) self-reliance and self-organisation; 2) inclusiveness and social ties; 3) learning and adaptation as developable human qualities; and 4) empowerment and participation. The manner in which communities are engaged is a key issue for

resilience-based planning. This involves the consideration of the meanings and parameters of: 'resilience'; 'community'; and 'community engagement'. It is necessary to explore the general consensus in the literature on what "resilience-building activities" could mean as we attempt to forge a robust understanding of the term and how it may contribute to communicative action.

Resistance and recovery as resilience-building activities

Resistance as a feature of resilience-building activity

Salter (1996: 8) points out that knowledge of natural disasters in particular are heavily focussed on the "hazard agents" such as fire, flood or cyclone. The orthodox paradigm, as Hewitt phrases it, therefore focuses on the "sense of causality or the direction of explanation... from the physical environment to its social impacts" (cited in Salter, 1996: 8). Scholarly research on the resilience paradigm can be found in the areas of natural hazards research (Janssen *et al*, 2006b: 240); urban risk (IFRC, 2010); disaster risk management (Manyena, 2006: 435); and emergency operations (Kendra and Wachtendorf, 2003). Engineers view the term vulnerability in terms of constructing urban infrastructure (Twigg and Bhatt, 1998) so the strengthening of communities to tackle disasters has been driven in large part by engineering legislation (Manyena, 2006: 445). Additionally, insurance companies are concerned with level of risk and potential exposure (Insurance Council of Australia, 2008). These perspectives have made substantial contributions to our conceptualisations of urban hazards, their consequences and the need for vulnerability reduction (Manyena, 2006: 435). They have also influenced various disciplines, which have adapted their theories of resilience to social systems (such as the fields of sociology and geography) (Adger, 2000; Blaikie and Brookfield, 1987; Stockholm Environmental Institute, 2004; Van der Leeuw and Leygonie, 2000). Therefore, much has been clarified for disaster preparedness in terms of the links between: 1) *Vulnerability*, that is the conditions determined by physical, social, economic, and environmental factors or processes which increase the susceptibility or risk of a community to the impact of hazards (UN, 2005: 1); 2) *Hazards*, which can be potentially damaging physical events, phenomena or human activities that may cause loss of life, injury, damage, disruption or degradation (UN, 2005: 1); and 3) *Risks*, that is the probability or likelihood for vulnerabilities to turn into significant hazards (NEMC, 2010: 33).

A cross-section of definitions is consistent with a focus on the vulnerability-hazard-risk approach to social resilience. Here, resistance refers to the “degree of disruption that can be accommodated without the community undergoing long-term change” to the functioning of the social structure (Maguire and Hagan, 2007: 17). Common understandings include the analysis of natural hazards and design issues, where a locale is able to withstand an extreme natural event without suffering devastating losses, damage, diminished productivity, or quality of life and without a large amount of assistance from outside the community (Miletti, 1999). The analysis of human geography is consistent with the vulnerability approach, with an emphasis on resisting the force, stress or shock resulting from a natural hazard (Smith and O’Keefe, 1996). The term disaster resilience is commonly viewed as a shield, shock absorber or moderating buffer to guarantee minimal loss of life and livelihoods and to allow the affected community or system to return to normal within the shortest possible time (Manyena, 2006). From the ecosystem functioning perspective (that may be used as a template for social functioning) reference is made to the buffer capacity or the ability of a system to absorb perturbation, or the magnitude of disturbance that can be absorbed before a system changes its structure by changing the variables (Holling *et al*, 1995). Finally, the notion of “buffer capacity” highlights the importance of characteristics such as “absorption, stability, thresholds and withstanding force” (Maguire and Cartwright, 2008: 4, 5).

With these perspectives in mind, resilience-building activities and their appropriate planning actions are illustrated by the construction of the Wivenhoe Dam that was intended to flood-proof Brisbane City after the 1974 inundation. While it appeared to work well for 30 years, it failed to be a solution in the extreme monsoonal events of 2011. This provides a case study in the compromised capacity for social resilience based on a focussed dependency on the built environment as a moderating buffer to extreme weather events.

Recovery as a feature of resilience-building activity

The term resilience generally entails the ability recover from a stressful event, such as a disaster of some kind (Cardona, 2003). The 1996 Australian Academy Symposium defined natural disasters as “any natural phenomenon which causes such widespread human, material or environmental losses that the stricken community cannot recover without external assistance” (Cited in Salter, 1996: 8).

Recovery involves “objects capable of regaining their original shape after bending, stretching, compression or other types of deformation” rather than just withstanding stressful conditions (Manyena, 2006: 438). This is where a “more resilient community returns to its pre-disaster state quickly and efficiently whereas a less resilient community recovers more slowly, or will fail to recover at all” (Maguire and Hagan, 2007: 17).

Common understandings in defining resilience as a form of recovery involve viewing community resilience as the ability to withstand a crisis event and an enhanced ability to recover from residual impacts (Insurance Council of Australia, 2008). In terms of disaster risk management, resilience can be seen as the capacity of the damaged ecosystem or community to absorb negative impacts and recover from stress (Cardona, 2003). In terms of the engineering use of the term resilience, it relates to the ability of a material to return to a pre-existing state after being stressed (Pimm, 1984). A common use of the term is a capacity to bounce back to the desired level of functioning (Maguire and Cartwright, 2008). In terms of emergency operations, resilience can be viewed as the ability to respond to stressful or unique events (Kendra and Wachtendorf, 2003). Finally, social resilience can be viewed as the ability to cope with and adapt to hazards and their stresses (Pelling, 2003).

Concepts of social resilience can be applied to the problems of climate change and food security in terms of the 2011 Brisbane floods and their impact on the markets at Rocklea. This demonstrated that interruptions to the supply chain caused localised food isolation within various parts of the city that required emergency re-supply. The *Queensland Resupply Guidelines* outlines procedures for the re-supply of isolated communities in times of crisis. As stated in the previous chapter, the term ‘isolated community re-supply’ is activated when “the persons residing in that community have ready access to retail outlets however the retail outlet is unable to maintain the level of essential goods required due to normal transport routed being inoperable as a result of a natural event or events” (SDMG, 2010a: 6). Given the interdependence of the transport network, distance is “considered an isolating factor if such communities” are inaccessible by “road, rail or water transport” (SDMG, 2010a: 7). With State-wide transport systems interrupted or ruined by inundation, this was most certainly the case across Queensland in 2011. The aim of the re-supply guidelines is to enable food recovery by ensuring that communities are “not disadvantaged by isolation” (SDMG, 2010a: 9), which in this case was State-wide.

According to the Herald Sun, resilience or ability to respond to and recover from this event was witnessed during the national effort to re-supply food to Brisbane and other Queensland communities (Wilson, 2011). However, the perception of resilience according to this approach is dependent upon the government's continued undertaking to pay these additional transport costs to ensure communities have the basic essentials for survival and are not economically disadvantaged (SDMG, 2010a: 9). With this in mind, the NSDR warns that the "government's desire to help communities in need, and pressure to help those affected may be creating unrealistic expectations and unsustainable dependencies" (COAG, 2011: 2). This draws attention to the need for government agencies as organisational bodies to re-assess the focus on internal emergency operations as the driving-force for building resilience. This necessarily involves consideration for the nature of, and potential for building resilience and self-reliance within communities (Howes *et al*, 2012a).

Resilience-based planning and the issue of focus on organisational resilience to the exclusion of community-based resilience activities

Howes *et al* (2012a) argue that given impacts of climate changes, the disaster risk management focus on organisational resilience needs rethinking. As outlined in Australia's *Critical Infrastructure Resilience Strategy*, the term resilience is currently taken on board by disaster risk management as building *organisational resilience* within and among sectors such as energy, water services, communications, transport, food chain, health, and banking and finance (CoA, 2010a: 10). Here, sector groups and advisory groups form the basis of the *Trusted Information Sharing Network* (TISN) for critical infrastructure resilience (CoA, 2010a, 17). Organisational resilience focuses on building common understandings between and within business on the complexities to be addressed due to infrastructure interruptions (CoA, 2010a: 18). The TISN conceptualise resilience as beginning with organisational resilience within and among its sectors. This flows on to build community resilience and, this in turn, flows on to build disaster resilience (CoA, 2010a: 10). Resilience is a new concept which emergency practitioners are now obliged to 'deal' with given that the climate related implications reach outside its core business (Reis *et al*, 2013 forthcoming). Price-Robertson and Knight (2012: 1) concur that "it is a concept that can be difficult for service providers, practitioners and policy-makers to translate into concrete actions".

Integrating community resilience into the PPRR model

The term resilience is a core feature in the 2010 *Queensland State Disaster Management Plan* (QSDMP). This framework makes provision for the five main guiding principles of the QSDMP which are the: 1) comprehensive approach; 2) all hazards approach; 3) all agencies approach; 4) local disaster management capability; and 5) a prepared, resilient community (SDMG, 2010b: 5) (see Appendix 1). Integral to the comprehensive approach is the focus on Prevent-Prepare-Respond-Recover (PPRR) model (SDMG, 2010b: 5) which in theory would make provision for preparedness and resilience at the community level. With this in mind, the QSDMP covers factors such as: the capacity of systems and communities to be resilient; capacity for learning; community awareness; self-organisation; willingness to take action; behaviour change; and self-reliance (SDMG, 2010b: 24, 25).

Cronstedt (2002: 12) argues that PPRR as an approach to disaster resilience has been criticised as setting up artificial barriers between its four elements. This implies the assumptions of clear delineations between the four elements and equal importance placed on each element in all circumstances. Furthermore, they are seen as sequential. In this way, PPRR may be biased towards action-based treatments rather than softer options involving social dimensions. Cronstedt (2002: 12) argues that this may be “carry-over from the emergency management paradigm” which focuses on the hazard.

Murphy (2007) argues that top-down approaches, which highlight the relative importance of operational procedures internal to disaster risk management, are favoured in PPRR over bottom-up approaches that empower communities and enable them to share in taking responsibility. The outcome is that “top-down paternalistic official activities do not lead to meaningful resilience” (Murphy, 2007: 313). Drawing on the experiences of Hurricane Katrina, Hurricane Andrew, Miami-Dade County and the city of New Orleans, Morrow (2008: 12) argues that, “it requires hard work at the grassroots level to build strong community social structures and for government and officials to earn public trust”. Olson (2000) states that, “this is one reason why political change often occurs after disasters”. Likewise, tensions exist in the reconstruction phase of disasters. Nelson *et al*, (2007: 23) argue that, “torn between a top-down and a bottom-up process and conflicting goals for reconstruction, New Orleans engaged in five separate planning processes, and it took 21 months to develop a community-acceptable reconstruction plan”. Arguments

for bridging the gap between top-down and bottom-up approaches have also emerged in development policy (Chambers, 1983; Gaillard, 2010; Wisner, 1995) and integration of disaster risk reduction with climate change adaptation (Howes *et al*, 2012a,b, 2013; Jabeen *et al*, 2010; O'Brien *et al*, 2006; Reis *et al*, 2013 forthcoming; Shea, 2001, 2003).

Broadening the scope of resilience

Broadening the scope and possibilities for resilience brings social justice issues to the forefront. Morrow (2008: 12) argues that: “addressing basic social and economic problems is a major step toward building resilient communities. It will make us all safer - and will result in a higher quality of life”. As will be discussed in Chapter 6 on governance implications, “people need to have faith in their government and trust that they are being represented fairly. This requires community involvement” (Morrow, 2008: 12). Drawing on Vale and Campanella (2005), Morrow further argues that “a resilient city is a constructed phenomenon, not only in the literal sense of what gets built but in a broader cultural sense. Social justice should form an interpretative framework to guide planning at all levels of government” (cited in Morrow, 2008: 12). Geis and Kutzmark (2000: 4) caution that this, “calls into question a number of entrenched political and cultural attitudes about land, people, and ways of doing things that are in conflict with what actually needs to be done to achieve a quality-of-life and disaster-resistant society”. This represents the clash of Habermas’s worldviews and has consequences for how shared responsibility is framed and therefore who is included and how (McLennan and Handmer, 2011). The NSDR advocate that (COAG, 2011: 3):

This new focus on resilience calls for an integrated, whole-of-nation effort encompassing enhanced partnerships, shared responsibility, a better understanding of the risk environment and disaster impacts, and an adaptive and empowered community that acts on this understanding.

Morrow (2008: 12) argues that, “a community is only as resilient as its weakest link”. According to Mileti *et al*, (1995: 117) this means “sustainable local economics that are capable of supporting quality lifestyles and that foster an equitable distribution of costs and benefits, including meaningful jobs, adequate income, substantial housing, good education, access to health care, and safe neighbourhoods”. Morrow (2008: 12) argues that this “essential resiliency or degree of true resilience will define the level of risk to any hazard, including hurricanes”. The International Federation of Red Cross and Red Crescent Societies (IFRC) (2012: 7) concur that following the 2004

Indian Ocean tsunami, resilient communities require a holistic foundational base. They assert that a safe and resilient community is knowledgeable and healthy. It is organised and connected with infrastructure and services. Furthermore it has economic opportunities and can manage its natural assets (IFRC, 2012: 3). In terms of conceptualising resilience, Prosser and Peters (2010: 9) warn that “narrowing the scope to one aspect risks losing the robustness of the concept as a whole”. Habermas’s (1992) theory of communicative action aims to permit people to reach understanding among themselves and inform their political orientations. Capturing the robustness of the concept of resilience allows for the interests of the community level and their ideas about essential resiliency to be acknowledged. Recognition of resilience as ‘betterment’ broadens the scope and options for resilience-building activities.

Betterment as a resilience-building activity

Betterment is “represented by a gain in resilience achieved as part of the recovery process” (Maguire and Hagan, 2007: 17). There is a growing development in disaster resilience policies which are now characterised not only by capacities to ‘bounce back’, but include a consideration of capacities to ‘bounce-back better’. This betterment or creativity feature of resilience appeals to the community capacity to go beyond just regaining an original state or level of functioning, to instead adapt to change and assume a “new state” or a higher level of functioning that is more sustainable to current and on-going conditions (Maguire and Cartwright, 2008: 4, 5; Maguire and Hagan, 2007: 17). As discussed in the previous chapter, climate changes complicate the measure and intensity of impacts due to our rapidly growing urban population, and its dependency on the uninterrupted functioning of our critical infrastructure. The implications for bouncing back better are more magnified.

Betterment and climate impacts

So, how can social resilience as betterment apply to the problems of climate changes? In recent times, human experiences of disaster are unlike any other period in history (Omand, 2005: 14-18). According to the International Federation of Red Cross and Red Crescent Societies (IFRC) (2010: 3-5) global themes of high concern involve the *urbanisation* of disaster risk. Key areas include urban disaster trends, post-disaster responses, threats of violence, health impacts and climate change risks. The nature of change and its impact on our life-worlds is increasingly complex

and interconnected. Pathways to betterment can be extraordinarily difficult as increasing resilience is seen as a policy goal and climate change adaptation is seen as the pathway to get there.

For example, Hurricane Katrina led to widespread urban chaos including a large number of deaths due to the lack of quick response measures. Lock down of transport systems, spikes in crime and a complete breakdown in the provision of food, water, law and services were reported. Colten *et al* (2008: 20) outlined that the lessons from New Orleans and Hurricane Katrina were about building community resilience because “the human and social disruption from the experienced trauma, the outmigration, and the breakup of community has... been extraordinary”. Furthermore, their research indicates that “cities and regions seeking to reconstruct after a disaster seem to simultaneously pursue goals to rapidly recover the familiar and to reconstruct in safer, better, and sometimes in more equitable ways” (Colten *et al*, 2008: 23).

The nature of the social fabric is of relevance here. In terms of the 2011 Queensland floods, an example of a betterment policy is found with the Queensland Reconstruction Authority (QRA) (2011a: 7) that was established to rebuild a “stronger, more resilient Queensland”. In this case betterment is not only applied to the built infrastructure, but includes the “social fabric” of an affected community. The QRA (2011a: 7) states that, “in some circumstances the resilience of a resource may be enhanced through a significant improvement or step change in the nature of that resource, this is called betterment”. Attention to the idea and benefits of social fabric were highlighted with the function of the ‘Mud Army’ during the clean-up process, where thousands of people turned up spontaneously to assist residents who had been flooded. In stark contrast to the Hurricane Katrina outcomes, the “nature of the resource” was the mobilisation of social capital and was reported as a testimony of the inherent resilience within communities that can be harnessed through coordinated action (QRA, 2011a: 7).

Betterment and capability development

The growing literature on betterment signifies a turning point to a more in-depth understanding of the various meanings and actions associated with social resilience, and not just in terms of response, as with the Mud Army, but of longer-term

preparedness. It is increasingly recognised that the orthodox framing of resilience, as encapsulated in the PPRR approach, requires a broader and holistic view of the concept (Prosser and Peters, 2010: 9) as we grapple with the demands for capability development and change management. The *International Strategy for Disaster Resilience* (ISDR) framework argues that a “holistic approach” toward preparedness is needed (UN, 2005: 12). To this end, the NSDR uses the term “holistic preparedness” to engender “better outcomes” through coordinated and integrated efforts (COAG, 2011: 3). A holistic approach requires inclusion of the community level and this is precisely what speech forums aim to achieve.

Community-based capability development is a key feature of the research literature. Reis *et al* (2013 forthcoming) reveal that this kind of development may not be possible in all communities. Those communities that are ambivalent or who do not wish to participate are not going to develop in this way and will continue to rely on government actions. The majority of communities who do wish to be involved, however, could take on some responsibility for building their own resilience. This would lighten the load of government agencies and allow them to concentrate their resources on those communities who need help the most. Emerging definitions and features of social resilience are derived from a number of disciplines and although the literature is wide and diverse, a common ground is emerging around which to frame and guide policy in support of community-based resilience efforts. Research within these areas has identified a spectrum of relevant human behaviours and abilities of capability development (see Appendix 8). They provide the basis of four criteria for assessing the relevance of community and school gardens for building resilience in communities: 1) self-reliance and self-organisation; 2) inclusiveness and social ties; 3) learning and adaptation as developable human qualities; and 4) empowerment and participation.

The roles of self-reliance and self-organisation in capability development

The move to capture an inclusive view of resilience is outlined in the *Hyogo Declaration* and the United Nation’s *International Strategy for Disaster Reduction (ISDR)*. The ISDR outlines a framework for action between 2005 and 2015 for building the resilience of nations and communities to disasters. Increased attention is now being placed on what communities can do for themselves in the face of adversity (UN, 2005). In line with speech forums, this perspective invites discussion

on the choices people make about future losses when decisions are made about enhancing community capacity to cope with disasters (Collins cited in Manyena, 2006: 437). This places more emphasis on the responsibility of potential losses to be shared by people rather than just a focus on withstanding the forces of nature (Mileti, cited in Manyena, 2006: 437). As discussed in the previous chapter, the main tension between the food sovereignty worldview and the food industry worldview is the de-linking of food production and consumerism from the global corporate food system (Baker, 2004: 308). While the criterion for self-reliance is particularly contentious, it is resonant with the NSDR call for disaster resilient communities whereby (COAG, 2011: 5, 6):

*People anticipate the impact of disasters on various facets of their personal and social systems, therefore minimising losses. They are **capable of organising themselves** so that social and economic activities are restored (Emphasis added).*

The ability of self-organisation lies at the heart of the NSDR priority action for partnering with those who can effect change. Here, “existing community structures and networks” should be used to promote and enhance disaster resilience (COAG, 2011: 10). Community-based food plans have been drafted by groups that are already organised and networked (see Appendix 5). This thesis proposes that self-reliance and self-organisation are emerging features of the resilience framework. This has happened largely independently of government support to date but appropriate policies such as speech forums could facilitate and accelerate this process. With reference to Chapter 5, it forms the first of four criteria for assessing the relevance of community and school gardens for resilience-building activities. The literature highlights self-reliance and self-organisation as key features of social resilience (see Table 2, Appendix 8). This includes the call for self-reliant communities (MCPEM-EM, 2008) self-organisation and self-reliance (Folke *et al*, 2002; SDMG, 2010b; UN, 2005) and strong social support networks (Buikstra *et al*, 2010; Luthans *et al*, 2006). This also requires diverse forms of knowledge and multiple levels of organisation (Krasny and Tidball, 2009a) and abilities for harnessing local resources and expertise to help themselves in an emergency (UKCO, 2010).

The roles of inclusiveness and social ties in capability development

The NSDR acknowledges the importance of social support systems and social cohesion such as: “neighbourhoods, family and kinship networks... mutual interest

groups and mutual self-help groups” (COAG, 2011: 5). Social ties form the basis of food sovereignty networks. This involves ties within and between groups according to community interests in terms of food availability, access and adequacy. Inclusiveness of minorities such as the elderly, youth, disabled, and ethnic groups is a common feature of localised food initiatives. As argued by community food plans a consideration of our most vulnerable and the equity issues involved are key concerns requiring smarter collaboration (see Appendix 5). In light of climate change pressures, the NSDR suggests that a key feature of a disaster resilience community is where (COAG, 2011: 5, 6):

*People **work together** with local leaders to prepare for and deal with disasters. They use **personal and community strengths**, and existing **community networks and structures**; a resilient community is enabled by **strong social networks that offer support to individuals and families in a time of crisis** (Emphasis added).*

The NSDR strives to enhance “community capability and confidence” which places “a better understanding of the diversity, needs, strengths and vulnerability within communities” (COAG, 2011: 2). Speech forums permit us to “assess what social actors do in variously structured situations” (Forester, 1985: xviii). This thesis proposes that inclusiveness and social ties are emerging features of the resilience framework and they require this kind of platform to reveal the underlying natural attitudes and opportunities for enhancing capabilities. It forms the second of four criteria for assessing the relevance of community and school gardens for resilience-building activities. The literature on social resilience highlights the importance of inclusiveness and creating social ties (see Appendix 8, Table 3) such as: strong social support networks with assets such as knowledge, skills and abilities (Luthans *et al*, 2006); trust in relationships (Enemark, 2006); neighbourhood actions (Breton, 2001); social cohesion and sense of community (Pooley *et al*, 2005; Poynting, 2006); the inherent capacities of a community (Maguire and Cartwright, 2008); diverse forms of knowledge (Krasny and Tidball, 2009a); and harnessing of local resources and expertise (UKCO, 2010). These features can be understood to engender collective efficacy (Moore *et al*, 2004).

The roles of learning and adaptation in capability development

The NSDR advises that “disaster resilience is a long-term outcome, which will require long-term commitment”. Furthermore, “achieving disaster resilience will require achieving sustained behavioural change” (COAG, 2011: 4). Again, the community food plans place high emphasis on education, training, and re-skilling for

competencies in food provision and literacy (see Appendix 5). Common ground is emerging in the literature on the relevance of learning and ability to adapt as developable human qualities. Innovations in how to think about and frame social resilience have been influenced by developments in ecological resilience research on adaptive behaviours. There has been an important shift in ecology away from the steady state theories of the 1970s towards chaotic models of the 1980s. For example, the field of ecology has led the way in terms of identifying the features of resilience and stability of ecological systems due to adaptive behaviours (Folke, 2006; Kondoh, 2003, 2005, 2006; Levin and Lubchenco, 2008; Uchida and Drossel 2007; Uchida *et al*, 2007). Aguirre (Cited in Maguire and Hagan, 2007: 17) advises: “In an ongoing process, a resilient community predicts and anticipates disasters; absorbs, responds and recovers from the shock; and improvises and innovates in response to disasters”. This weaving and integration requires the *ability to adapt and change* depending on the circumstance. The Resilience Alliance (Cited in Krasny and Tidball, 469: 2009a) outlines that “resilience thinking draws from the adaptive cycle as a metaphor for how change occurs, with periods of rapid growth and stability alternating with decline followed by reorganisation”. Therefore, “managing for change, rather than toward a stable state endpoint, is inherent to resilience thinking. Folke *et al* (Cited in Krasny and Tidball, 468: 2009a) advise that because “change is inherent to all systems resilience is an integral component of sustainability”. The literature demonstrates that sustained behaviour changes require the development of capabilities for: adaptive behaviours (Brooks, 2003; Comfort, 1999; Engle and Lemos, 2010; Gallopin, 2006; Horne and Orr, 1998; Mallak, 1998; Valdovinos *et al*, 2010); learning as a developable capacity (Armitage *et al*, 2008; Folke *et al*, 2002; Krasny and Tidball, 2009a; Luthans, 2002; Paton *et al*, 2000; SDMG, 2010b: 24, 25; UN, 2005; Wildavsky, 1991); and the ability to change and shape change (Maguire and Cartwright, 2008: 5, 8; MCPPEM-EM, 2008) (see Appendix 8 Table 4).

This thesis argues that capacities for learning and adaptation are emerging features of the resilience framework. As such, they form the third of four criteria for assessing the relevance of community and school gardens for resilience-building activities. Social capacity for adaptation is highlighted by the NSDR as a hallmark of what a disaster resilient community looks like (COAG, 2011: 5). Arguments for the importance of food sovereignty initiatives have linked the role of learning and sharing of information and skills. In line with the speech forum platform, the NSDR calls for local communities that are (COAG, 2011: 10, 11):

*Engaged and have knowledge and expertise of local risk, how a disaster resulting from that risk would affect the local community, and **how potential treatments can be harnessed**, to mitigate the risks (Emphasis added).*

The roles of empowerment and participation in capability development

The NSDR suggests that: “communities need to be empowered to take shared responsibility for coping with disasters” (COAG, 2011: 2). It states that (COAG, 2011: iii):

*Disaster resilience is the **collective responsibility** of all sectors of society, including all levels of government, business, the non-government sector and individuals. If all these sectors **work together with a united focus and a shared sense of responsibility** to improve disaster resilience, they will be far more effective than the individual efforts of any one sector (Emphasis added).*

Food sovereignty approaches have advocated for community empowerment and participation in food availability, access and adequacy. The empowerment of groups to exercise their values and influence features highly in community food plans (see Appendix 5). This advocacy role is resonant with the NSDR priority action for supporting capabilities for disaster resilience. The priority outcome here is to foster “local resilience-based planning arrangements” which “encourage and foster self-reliance tailored to community conditions” (COAG, 2011: 14). This thesis argues that empowerment and participation are emerging features of the resilience framework. They form the third of four criteria for assessing the relevance of community and school gardens for resilience-building activities. The literature highlights the following themes which support the NSDR actions for community-based activities in social resilience (see Table 5 of Appendix 8). These include the need for: leadership qualities and constructive flow of information (Ink, 2006); the use of skills, motivation and enthusiasm to encourage involvement of others (UKCO, 2010); enhanced community involvement (Clauss-Ehlers and Lopez-Levi, 2002; MCPPEM-EM, 2008); community participation (Krasny and Tidball, 2009a); and developing shared understandings (MCPPEM-EM, 2008). Resonant with the objectives of speech forums, this involves a proactive approach to developing the psychological capital that contributes to confidence and feelings of success (Luthans *et al*, 2006) ability to cope with, adapt to and shape change (Folke *et al*, 2002) and an appreciation of norms, attitudes and values (Oxfam, 2005).

The issue of resilience-based planning for community engagement

Defining the parameters of resilience

The NSDR locates resilient communities as the centrepiece of disaster resilience policy. Goode *et al* (2012: 20) argue that because community resilience is the “new driving principle”, there are at present tensions concerning a lack of consensus on its definition and the evidence-base for the efficacy of this new approach. The Intergovernmental Panel on Climate Change (IPCC) attempts a definition of resilience as (IPCC, 2012: 5):

The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through to ensuring the preservation, restoration, or improvement of its essential basic structures and functions.

However, definitions vary greatly due to the emerging complexities involved. In recognition of these complexities, the NSDR aims to create a “whole-of-nation” and “whole-of-government” approach to resilience (COAG, 2011: 3). Prosser and Peters (2010: 10) argue that the “whole-of-government approach to disaster resilience... brings with it broader cross jurisdictional and cross departmental policy challenges. Not the least of which is the different understandings of resilience, which may be used by departments and policy makers”. The NSDR refrains from providing a ‘neat’ definition of resilience, preferring instead to pose the question: “What does a disaster resilient community look like?” (COAG, 2011: 5). Posing this as a question rather than providing another definition serves two important functions. It shifts the focus from government bodies as the disseminators of resilience knowledge and wisdom and it invites a shared responsibility for pondering the possibilities and pathways. Prosser and Peters (2010: 10, 11) advise that the task is not so much about gathering consensus from various viewpoints around a single definition or interpretation of the term resilience. Rather, it involves the challenge of developing a “holistic approach” which generates a “common understanding that is robust enough to operate in different policy contexts”, as will be discussed further in Chapter 6 on the governance implications. In the absence of consensus, speech forums can highlight avenues for negotiation where resonance between worldviews produces some measure of mutual understanding (Parkin, 1996).

Definitions in the meanings of social resilience are evolving as our understanding and experience in dealing with disasters grows and changes. Prosser and Peters (2010:

9) advise that it is “important not to confuse a lack of a tight definition with a lack of conceptual rigour”. They continue that assumptions drawn from understandings of the term can lead to barriers to the development of policy and result in very different outcomes. Providing opportunity to talk among each other and see the differences and commonalities of worldviews allows for evolving views to emerge, be reflected upon and made visible (Berndtsson *et al*, 2007). As will be argued in Chapter 6 on the governance implications, facilitation of discussion around the meaning of the term for any given situation is important. Reis *et al* (2013 forthcoming) argue for a re-conceptualisation of community resilience as the new approach for integrating Climate Change Adaptation (CCA) with Disaster Risk Reduction (DRR). They argue that how ‘community’ and ‘resilience’ are framed is subject to *over-simplifications*. A more *contextualised* understanding of their relationship is argued with community engagement tailored to empower the community should they wish this. The Hon Robert McClelland MP, Attorney-General in his address to the Critical Infrastructure Advisory Council in 2009 (CoA, 2010a: 6), stated:

The time has come for the protection mindset to be broadened – to embrace the broader concept of resilience ... The aim is to build a more resilient nation – one where all Australians are better able to adapt to change, where we have reduced exposure to risks, and where we are all better able to bounce back from disaster.

Defining the parameters of community

The NSDR advises that “governments, business, the not-for-profit and communities [should] strive to recognise and understand the risk disaster pose to their own and their community’s interests” (COAG, 2011: 7). It is problematic to define what constitutes ‘community interests’ when there is little understanding or oversimplified notions of ‘community’ means (Reis *et al*, 2013 forthcoming). Emergency Management Australia (EMA) is a government organisation for the official response to emergencies and the coordination of volunteers. EMA locates understanding the community and its various forms of vulnerability as a key feature in understanding the risks for flood emergency planning. As such, “establishing a community profile” involves diverse considerations such as identification of the: elderly; poor; single-parent families; lack of mobility; newcomers to the area; cultural and linguistic diversity; disability; and geography (EMA, 2009: 11, 12). The United Kingdom Cabinet Office (UKCO) which supports the Prime Minister with the effective running of government recognises four kinds of community in the *Draft Strategic National Framework on Community Resilience* (UKCO, 2010: 10, 11).

The first category is *Geographical communities* which include parishes, towns, streets and villages (UKCO, 2010: 112). This kind of community is likely to be affected by the same kind of natural hazard and will have shared governmental authority such as a local council. Massey (cited in Masuda and Garvin, 2008: 113) asserts that struggles over meanings of a 'place' "generally take place at the local level, but are often linked to broader struggles in a globally connected world".

Second is *Communities of interest*. These consist of groups who hold affiliation based on interactions with each other and shared interest such as clubs, parent groups, faith, and web communities. They come together to achieve a common purpose but potentially for different reasons. Masuda and Garvin (2008: 113) argue that the diversity of interest groups which have particular preferences can "impose particular meanings" on to group activities and the associated natural and built environments. As such, people can take for granted what belongs or not, which further complicates the picture (UKCO, 2010: 112).

Third is *Communities of circumstance*. This is when people are affected by the same circumstance such as a train crash where people are unlikely to have similar interests or come from the same geographical area but form a community in the aftermath of an event. Some communities maintain strong ties long-term after an event (UKCO, 2010: 112).

Fourth is *Community of practitioners*. This involves professionals and service providers for emergency management such as police officers, St John Ambulance, the Salvation Army and Flood Wardens. Many practitioners live in and are affected by the same geographical circumstances (UKCO, 2010: 112).

Maguire and Cartwright (2008: 2) identify an additional category of *Emergent communities*. This refers to the situation when a community may emerge where previously there was no cohesion or organisation in response to a number of issues, for example, environmental or social change. Through speech forums relationships and shared histories provide indicators for how different groups within such a community may respond to change. Cuers and Hewston (2006: 1) assert that strong communities have "high levels of coordination and cooperation for reciprocal and mutual benefit".

Defining the parameters of community engagement

As suggested, facilitation of discussion around the meaning of resilience and community for any given situation is important. This raises the importance of appropriate forms of community engagement (Howes *et al*, 2013). As with most emergency policies, the *Queensland State Disaster Management Plan* (QSDMP) identifies community education and awareness as key strategies in disaster risk management. Objectives include developing awareness and understanding of risks and promoting self-reliance (SDMG, 2010b: 24). However, an analysis of three recent Australian disaster inquiries²² by Howes *et al* (2012b) reveal similar programs for community awareness which were found to focus primarily on communities as recipients of ‘better’ information rather than empowered citizens.

In such cases, Grant-Smith and Reis *et al*, (2012: 2) advise that pathways forward include changing the way disaster risk management agencies engage with the community, and support locally driven engagement and planning. As will be argued in Chapter 6, the need for public participation, distributed and participatory approaches are beneficial when tailoring engagement to include hazard awareness (Beck, 2011: 205; Cavaye, 2004). Dovers (1998: 9) advise that this can engender a sense of ownership and control. The role of applied critical theorists is to “investigate both the threats to freedom and the possibilities for emancipation” (Parkin, 1996: 425). The prospects for democratic politics (Forester, 1985) through a forum for social inclusion and participation are emerging as key features of the shared responsibility framework (McLennan and Handmer, 2011) which features highly in recent Australian disaster inquiries (GWA, 2011; VBRC, 2010a, b, c). In light of climate changes, engagement with communities is seen as an important step forward in risk management (Wiseman *et al*, 2010). This is because it aims to allow “interested parties to focus on a variety of diverse perspectives and potential solutions that would not ordinarily have been explored” (Cuers and Hewston, 2006: 5). However, Burton (2009: 264) cautions that a “preoccupation with rights-based conceptions of participation” can tend to assume that ‘engagement’ is always beneficial and warranted. Reis *et al* (2013 forthcoming) identify that imposing engagement where there is ambivalence or it is not wanted will be counterproductive. Conversely, they argue that where empowerment and activism is favourable,

²² The inquiries included: The Victorian Bushfires Royal Commission (VBRC, 2010a, b, c), the Perth Hills Bushfire Review (GWA, 2011), and the Queensland Floods Commission of Inquiry (QFCI, 2011, 2012).

opportunities are present for facilitating relationship building. Consideration of these points would enhance the success of resilience-based planning for community engagement.

Conclusion

The research question addressed by this chapter is: *What is social resilience and how can it be applied to the problems of food security and climate changes?* This chapter reviewed and analysed the themes and issues in the literature on resilience-building activities. This informed the NSDR criteria for leading change and coordinating effort on support for community-based resilience efforts which is inclusive community engagement and capability development (COAG, 2011: 7).

It was found that resilience has been widely understood in terms of capacities for resistance and abilities to bounce-back and recover. It is also framed as 'bouncing-back' *better*, which entails consideration of whole community dynamics and equity issues. This chapter has highlighted the importance of capability development that is socially anchored by learning experiences and opportunities for acquiring skills. This involved inclusiveness, democratic engagement and organisation through networks. As outlined in the previous chapter, community-based food plans provide a range of options for locating food procurement that emphasise the relevance of these forms of social resilience.

It is not a question of selecting which one of the resilience features is the most important or valuable, but of an integrated approach which weaves all into a more holistic and effective plan. Speech forums provide an arena for doing so. Tensions were found with a focus on organisational resilience and operational procedures to the exclusion of community-based resilience activities. It was also argued that the notions of community and resilience are primarily over-simplified in disaster risk management. Resilience therefore requires all three components of resistance, recovery and betterment. And based on these components, it is clear that disaster resilience and social resilience are intertwined. In line with the objectives of communicative action, viewing social resilience in this way can help us to address a range of complex and interconnected issues and better address the essential resiliency needed at the community level. The connection was found to be strong between the aims and objectives of community-based food plans and the four features of resilience as betterment. Therefore, as will be discussed in the next

chapter, the four criteria for resilience as betterment will provide the basis for assessing the relevance of community and school gardens for building resilience hubs within communities.

Chapter 5: Community and school gardens as sites for building social resilience and food security

Introduction

Community and school gardens have over 100 years of documented history as providers of urban food in times of hardship (Irvine *et al*, 1999). This chapter will focus on the *National Strategy for Disaster Resilience* (NSDR) priority action for leading change and coordinating effort through building shared responsibilities with garden networks and partnerships. It will review and analyse the literature on how community and school gardens contribute to building social resilience and food security. The research question addressed is: *How do community and school gardens contribute to building a community capacity for social resilience and food security?* The NSDR advocates that (COAG, 2011: 7):

Leaders drive development of partnerships and networks to build resilience at the government, business, neighbourhood, and community levels. These partnerships are based on a sense of shared responsibility, and an acknowledgement of the need for coordinated planning and response.

As outlined in the previous chapter on building social resilience, common ground has emerged in the literature around support for the development of capabilities at the community level. A spectrum of relevant human behaviours and abilities (or valid indicators) of capability development were been identified under four themes: 1) self-reliance and self-organisation; 2) inclusiveness and social ties; 3) capacity building, learning and adaptation as developable human qualities; and 4) empowerment and participation. Community and school garden initiatives have provided an extensive array of examples in sharing responsibility for local food procurement and literacy that have been well researched.

This chapter will first review and analyse the literature on community and school garden contributions to building social inclusiveness. Under this banner, the themes of empowerment and participation and then contributions to forming democratic spaces and social ties are explored. McLennan and Handmer (2011: i) argue that there are challenges which need to be considered when formulating shared responsibility frameworks, where frameworks refers to the “underlying structures of belief, perception, and appreciation” used to understand and make sense of the issues at hand. The politics of shared terrestrial commons between and within garden groups will then highlight the potential for clashes in worldviews. It

demonstrates the weaknesses in the main argument that gardens can function as hubs for building social inclusiveness as a key feature of social resilience.

Secondly, this chapter will outline the precedents in self-organised and coordinated planning of community and school gardens in times of food crisis. The role of neighbourhood improvement and safety as planning objectives are also discussed. Finally, the issues involved with the politics of connectivity, that is, relationships between garden groups with members of the broader policy communities also highlight the potential for clashes in worldviews. It further contextualises the weaknesses in the main argument that gardens can function as hubs, not only for building coordinated action but also self-reliance in food security.

Finally, emergent policy connections in the areas of health and education are outlined as avenues for learning and adaptation. The role of nutrition in the reduction of obesity is introduced as a growing policy concern. Building community health and wellbeing and then the role of education are also discussed as emergent policy areas. Finally, it is asserted that integrating the multiple worldviews into coordinated action is complicated. Furthermore, in spite of the various benefits that community and school gardens hold for building resilience and food security, they cannot be uniformly seen as positive.

Building community empowerment through social inclusion

The NSDR emphasises that leaders should “drive the development of partnerships and networks to build resilience” which is inclusive of the neighbourhood and community levels (COAG, 2011: 7). The *Community Garden Conference* held in Canberra in 2010, states that “community gardens play an important role in promoting health, social inclusion, active civic participation and practices of sustainable living in urban environments” (Turner *et al*, 2010: v). As will be discussed next, the emergent themes in the community and school garden literature as they relate to social inclusiveness involve contributions to: 1) empowerment and participation; and 2) democratic spaces and social ties. Issues with shared spaces within gardens networks will then be highlighted.

Empowerment and participation

A review and analysis of the literature in community and school gardens has revealed that shared responsibility with communities can be enhanced through empowerment and participation of those involved. This involves facilitation of opportunities to participate in settings appropriate to the needs and interests of: 1) school children; 2) youth; and 3) adults.

School children and provision of gardening and food-related opportunities

Opportunities for school-based gardening literacy and capability development forms an important part of international and national government's environmental education approach (see Appendix 12). The policy is supported by the literature. Lekies and Sheavy's (2007: 67, 73) survey of six community and school gardening sites in New York and Pennsylvania revealed that active participation in the decision-making, leadership and other involvement were strongly linked with gardening interests both directly and indirectly through gardening skills. Gardening skills were therefore demonstrated to hold the strongest influence on gardening interest, followed by participation in planning and management activities. Skelly and Bradley (2007) conducted questionnaires with 28 teachers of 427 third-grade students in Florida, USA about their school garden programs. Spanning over nine types of school gardens, the results revealed that all students had high scores for a sense of responsibility and positive environmental attitudes. The recommendation was for teachers to utilise school gardens to "foster students' sense of responsibility" through garden-related participation (Skelly and Bradley, 2007: 103). Hourigan (2011: 1, 2) identified three key emergent issues in building childhood resilience and sense of autonomy²³. First, is allowing the child to make decisions in the choice, preparation and eating of healthy food. Second, taking age appropriate risks allows the child to build confidence and less anxious about facing new experiences. Finally, building relationships with others and sharing experiences through social occasions, celebrations and growing food helps build autonomy. These three features promote a sense of: 1) Belonging - to a family, culture or community; 2) Being - allowing the child time to be and make meaning of the world; and 3) Becoming – the flourishing of skills, knowledge, identities and capacities.

²³ Presented at Queensland's Nutrition Australia public seminar, *Resilient children and healthy communities: Using food in the solution.*

Youth and opportunities for mentoring and engagement

In terms of youth, Vaske and Kobrin (Cited in Blair, 2009: 18) identified from a sample of teenage natural-resource workers that a “teenage identity with a place mediated the relation between dependency on the place and environmentally responsible behaviours”. Doyle and Krasny (2003: 91, 93, 111) report on the Garden Mosaics program at Cornell University highlights the importance of mentoring youth and guiding them to take responsibility for tasks. The study aimed to determine whether youth could effectively facilitate activities with gardeners and then identify learning outcomes. The study involved 31 educators and volunteers, 26 gardeners and 85 youth aged between 9 and 16 years of age. Their recommendation for younger children was to focus on gardening and building relationships with elders. For youths it was recommended to have them “working together” as a team with adults, which clearly defines their roles, prepares them for facilitating activities and engages them in community action. Mentoring of youth builds competency, self-esteem and empowerment. Lekies *et al* (2006) concur in their report with a New York State children’s garden consultant program, where the mentored girls reported such outcomes. Driskell (2002) and Hart (1992) assert that active participation for youth is linked with ownership, belonging and shared responsibility. These serve to strengthen self-esteem, allow youth to acknowledge the importance of their contribution and find ways to continue to contribute within their communities. Lekies and Sheavy (2007: 73) assert that the use of garden skills provides a “connection between mastery of particular competencies and a willingness to try new endeavours”.

Gardens expose children and youth to “how a plant goes from seed to plate” (Rahm, 2002: 175). Young people are given the opportunity to interact with each other and adult gardeners, they grow food within a local sustainable food project and compost waste on site (Graham *et al*, 2004; Moore, 1995; Morris *et al*, 2000), share their produce and feel the excitement of growing food from seed (Blair, 2009: 18). Youth opportunities to be mentored, interact and develop competencies are a recognised policy agenda (see Appendix 13). These activities and processes allow young people to view food production in new, positive and meaningful ways, as Thorp and Townsend (2001: 357) state that:

Gardening changes the status of food for all involved. When one gardens, food can no longer be viewed as a mere commodity for consumption; we are brought into the ritual of communal goodness that is found at the intersection of people and plants.

Adult contexts and opportunities to participate

Community gardens provide convivial spaces that can provide an invitation for sharing responsibility. The Slow Food Movement provides an articulation of this. Petrini and Padovani (2006: 184), the founder of the movement states that:

I do not like a term like 'consumers'. It implies 'consumptions' of the land, of the environment, of anything that is around us. Consumption has become too invasive a term. I prefer to define the Convivia (members) as co-producers. They have to be responsible for complex mechanisms: it is up to them to learn about food and to understand the environment that it comes from and how that ecosystem can be sustained. All these issues play a role in a new relationship between producer and co-producers.

Participation in the co-production of food provides opportunities for a variety of roles. For example, Twiss *et al's* (2003: 1435) studies into the community capacity of six community gardens in California outline that there is an increase in leadership, community participation and partnerships and opportunities for building on skills. King (2008: 111, 120) asserts that community gardens, that are a part of alternative agricultural systems, contribute to community resilience. Community gardens, that are becoming more prominent in Australia, contribute via community development processes such as the building of relationships, participation and inclusiveness, resource mobilisation and the sharing of skills and knowledge. These factors are important for the existence of networks. Additionally, Crabtree (cited in King, 2008: 120-21; Crabtree, 1999) claims that community gardens promote social resilience by using 'edges' or spaces in social organisation such as enhancing communication, information sharing and deliberate co-learning. This also involves 'replication' whereby each function is fulfilled by numerous people and each person fulfilling multiple functions. These facets create space for education and community development.

Buckingham (2003) reports that grassroots community gardens can empower disadvantaged social groups to participate. Drawing from 20 community gardens in upstate New York, Armstrong (2000: 319) found that low income neighbourhoods were more likely than higher income neighbourhoods to address other issues in addition through community garden activities. Armstrong (2000: 319) discovered links between community development and health promotion with strategies for empowerment. According to a community garden coordinator, descriptions of other community benefits resulting from garden organisation included getting to know people, activism in local politics and increased awareness of local issues. It also raised more awareness between groups because different programs interact through

the garden. Children's pride in ownership of land was reported as was community cohesion because people knew each other. These increased the strength of the neighbourhood watch program, the development of park and playground amenities and community babysitting (Armstrong, 2000: 324). Jamison (1985) reported increased development of community, self-worth, confidence, food production, equality and cooperation as benefits of community garden involvement. Rishbeth (2001) asserts that community gardens provide a space for preparing culturally preferred food, sharing of food, and socialising to ethnic minority groups.

Hynes (1996) argues that women feel particularly empowered in community garden settings. As stated, Buckingham (2005) concluded that children involvement in gardening is linked to women's involvement. Parry *et al* (2005) explore gender relations within the community garden context of St Louis, USA. They found that many women were empowered to seek new opportunities or responsibilities outside the garden context due to their involvement within the garden. Perkins and Lynn (2000: 74) reveal the motivations for a women's community garden in Townsville, Australia. In response to a culture of violence against women and the environment, the development of resourcefulness and community self-reliance contributed to empowerment of the women to act. Teig *et al* (2009: 1119-1120) suggest that the variety of functions and social processes served under the banner of garden activities highlight the importance of volunteering. Volunteered activities such as leadership, organised neighbourhood activities and recruitment within the overall garden environment create ownership and supports collective responsibility.

The NSDR recognises that empowering individuals and communities to exercise choice and take responsibility is a priority action. It recommends that local communities should be "engaged and have knowledge and expertise of local risk". Furthermore, "how potential treatments can be harnessed, to mitigate the risks", should acknowledge community awareness of the "vulnerable elements of the community and consider their needs in the development of programs and plans" (COAG, 2011: 11). In this way, risk reduction knowledge integrates and weaves with "relevant education and training programs" (COAG, 2011: 8). As recommended by the NSDR, empowered communities engage with "programs and activities in schools and the broader community [that] actively encourage volunteering" (COAG, 2011: 11). This has been demonstrated in the literature and confirms the NSDR call that "these partnerships are based on a sense of shared responsibility" (COAG, 2011: 7) and Morrow's (2008: 12) argument of essential resiliency.

Democratic spaces and social ties

A review and analysis of the literature highlights the need for democratic process which allow for social inclusiveness through the building of relationships and the strengthening of those ties. A range of research supports the claim that gardens can be viewed as demonstrations in democratic and inclusive spaces. For example, Shepard (2009: 273) argues that community gardens are democratic spaces that allow for people to gather, share and act together through the creation of inclusive, “convivial public spaces”²⁴. King (2008: 111) asserts that connecting people with people and people with food is central to “community resilience and contemporary agri-ecological systems”. Patel (1996: 36, 43) states that gardens provide a setting where people can gather as neighbours to discuss growing plants, and by association, other matters. Through sharing concerns, problems can be solved together. This can build neighbourhood activity, breakdown social barriers, engender positive views of other people and their surroundings and build new friendships. Glover (2004: 143) asserts that community gardens can promote reciprocity, trust and civic participation as needed forms of social capital. Buckingham’s (2005) research in the UK suggests that children’s involvement in gardening is linked to women’s involvement. Using the case of Latino community gardens in New York City, Saldivar-Tanaka and Kransy (2004) highlight that the numerous social, education, and cultural events occurring at the gardens created community activism and unique participatory landscapes. Shinew *et al* (2004) argue that community gardens bring ethnic backgrounds together, thus lessening racial segregation. Nemore (1998) asserts that community gardens in New York City are able to address the unique needs of diverse communities. Finally, Rishbeth (2001: 336) identifies that community gardens provide a space for preparing culturally preferred food, sharing of food, and socialising for ethnic minority groups.

McLennan and Handmer (2011: iii, iv) highlight that where support groups “work effectively together to achieve common goals through communication, learning, participatory decision-making, flexibility, accountability and transparency” the suitability of “command-and-control” style of management is brought into question. As previously discussed in Chapter 4 on social resilience, an analysis of three recent

²⁴ D’Alema identifies that food is a cultural expression which “requires love and art in its preparation and is a source of leisure, hence it has to be respected” (cited in Petrini and Padovani, 2006: 74). In this context pleasure is not frenzied but a more responsible, simple kind of *convivial* space. Convivial spaces are lively, friendly and enjoyable (Petrini and Padovani, 2006: 184).

Australian disaster inquiries²⁵ by Howes *et al* (2012b) revealed that disaster risk management programs for community awareness were found to focus primarily on communities as recipients of 'better' information rather than empowered citizens. Acknowledgement of "micro-level structures and process" as outlined above provides another lens how the shared responsibility framework may be viewed (McLennan and Handmer, 2011: iii). As such, they provide demonstrations on the alternatives to command-and-control methods and potentials for speech forums.

Social relationships which anchor their dependencies for food within localised spaces have strengths. However, these localised 'spaces of dependence' also have weaknesses for coordinated planning and response due to the potential nature and dynamics of partnerships and networks at the community and neighbourhood levels. Jarosz (2008: 233) asserts that these kinds of localisations of food systems cannot be assumed to be uniformly, good or progressive. The circumstances which are place-based, with their social, political and ecological flavours are necessarily complicated and can frustrate communicative action efforts. As will be discussed next, the politics of place is complicated by a type of geography known as the politics of shared terrestrial commons (Masuda and Garvin, 2008: 113).

Worldview clashes: The politics of shared terrestrial commons

The politics of shared terrestrial commons is based on the fact of shared space, where places are subject to ongoing negotiation and arguments between groups which are "sharing and intersecting" (Masuda and Garvin, 2008: 113). For example, the multiplicity of interest groups that have particular preferences can "impose particular meanings" on to group activities and the associated natural and built environments. As such, people can take for granted what 'belongs' or not (Masuda and Garvin, 2008: 112).

Ideological tensions can come from various sources both between groups and counterparts attempting to bridge allegiances and within groups attempting to bond social ties. Within these melting pots, ideologies may redefine and/or entrench notions of empowerment and equity. Glover (2004) asserts that community gardens can raise contexts in which social divisions are created or sustained, where exclusion

²⁵ The inquiries included: The Victorian Bushfires Royal Commission (VBRC, 2010a, b, c); the Perth Hills Bushfire Review (GWA, 2011); and, the Queensland Floods Commission of Inquiry (QFCI, 2011, 2012).

can be fostered and homogeneity perpetuated. As such, the collective and collaborative facets of community gardens can be problematic (Parry *et al*, 2005: 180; Tan and Neo, 2009: 531) and efforts for communicative action negated. Members of the collective may share worldviews on climate change adaptation, building social resilience at the community level and the need for access to locally produced food. However, certain natural attitudes that are taken for granted in everyday life and are not reflected upon (Habermas, 1992) can also reveal tensions between worldviews.

Equity issues involving minority groups including gender, ethnicity, race, disability, class, low income neighbourhoods and social groups remains a challenge for localised food groups (Jarosz, 2008: 233). Shaw (1999: 276) identifies that interactions with others of the same and opposite genders can consolidate and/or challenge notions of appropriate behaviours for men and women. On the one hand, women can feel particularly empowered by involvement in community garden settings (Hynes, 1996; Lekies and Sheavly, 2007). Conversely, difficulties were expressed by women in encouraging female involvement in a community garden in Townsville, Australia due to perceptions of wider, culturally entrenched violence against women and the environment (Perkins and Lynn, 2000: 74). These garden spaces are shaped by the “continual restructuring of gender relations” (Bhatti *et al*, 2009: 192) and therefore “larger social structures” need to be reflected upon (Parry *et al*, 2005: 181) as they relate to the natural attitudes underpinning such worldviews.

In terms of school gardens, tensions may include challenging the view that the “typical asphalt-covered or flat green school-yard” is desirable, which Blair (2009: 17) describes as “monocultures that minimise environmental complexity”. According to Teig *et al*, (2009: 1117) stresses can escalate due to other people’s expectations. Issues of trust can also involve fears of stealing, not trusting people outside the group, vandalism, lack of respect by outside visitors who may trample the gardens and neighbourhood instabilities. Another tension involves difficulties with communication such as domination by the same group of people only interested in their own agendas. This in turn negatively influences the prospects for coming to group consensus and mediation of conflicts. McLennan and Handmer (2011: ii) argue that social dilemmas can form an integral part of shared responsibility. Here, people and organisations can “make choices leading to short term, private gains but which create long term social costs that leave everyone worse off in the end”. As will be

discussed next, there are however, compelling precedents in self-organised and coordinated planning in food provision leading to social resilience in times of crisis.

Precedents in self-organised and coordinated planning

This section will look at the precedents in self-organised and coordinated planning. First, the emergence of garden allotments in noted periods of hardship are outlined. The role of gardens in neighbourhood improvement and safety is also flagged. Finally, the issue of how worldviews can clash between garden groups and members of the broader policy communities demonstrates the ways in which gardens as hubs for building social resilience and food security will not result in coordinated planning.

Emergence of garden allotments in noted periods of hardship

Community and school garden allotments have historically contributed to building social resilience. The tradition of English allotment gardens appeared in the early 19th century, providing agricultural land for city dwellers and employment for peasants evicted from the commons (Irvine *et al*, 1999: 36). Since then, emergencies, wars and economic depression have driven city dwellers to grow their own food during times of crises, which in time faded away as conditions improved (Patel, 1996: 37). Some notable periods of food self-reliance in history are related to war and economic depression. In the USA, for example, Detroit city was the first to organise community gardens in 1893 during economic depression with other cities to follow their lead (Patel, 1996: 37). The mass migration of the unemployed into urban areas placed increased pressure for accessible urban production for food (Ohmer *et al*, 2009: 379). During the First World War, *Liberty Gardens* were encouraged by government for self-sufficiency in food needs (Patel, 1996: 37). Then during the 1930s depression period, 'the great depression', urban gardening became popular when millions of people were desperate and unemployed (Patel, 1996: 37). Here, community gardens provided opportunities, particularly for the poor to grow food on vacant lots (Ohmer *et al*, 2009: 379). Following this, during World War II, 44% of food produced in the United States was produced from *Victory Gardens* in 1944 (Patel, 1996: 37). Implemented by the U.S Department of Agriculture, the fresh produce came from 20 million gardens across the country (Ohmer *et al*, 2009: 380).

In Cuba, Havana's 26,000 self-provision gardens addressed acute food scarcity problems when Soviet aid and trade were curtailed in 1989. During the period of

1989 to 1992 the average consumption of calories dropped by approximately 20% and protein by 27%. The Cuban's refer to this time as the "special period" (Moskow, 1999: 127; Rosset, 1998: 140), which is widely argued to be a key demonstration in local food procurement for urban and city environments.

The 1970s saw a resurgence of urban gardening in the West as ecology and the environment grew in popularity (Patel, 1996: 37) and inflation rose (Irvine *et al*, 1999: 36). More recently, sustainable community strategies such as the *Earth Summit 1992* and *Agenda 21* have promoted the functions and benefits of community and school gardens globally (Irvine *et al*, 1999: 35; Ohmer *et al*, 2009: 380).

From this history, it is clear that direct access to clean, fresh and affordable food in urban settings is a key issue for social resilience in times of hardship (Hopkins, 2002; Stocker and Barnett, 1998). Agreements in the literature include all kinds of benefits associated with direct access to food. McClintock (2010) argues for community gardens as a form of urban agriculture and common good to respond to economic need and the global financial crisis. Growing food independently saves money and creates feelings of self-reliance (Jamison, 1985; Linn, 1999; Schmelzkopf, 1995). Buckingham (2003) promotes grassroots community gardens which serve to produce cooperatives among the local population, local authorities and community groups. Gelsi (1999) states that community gardens are places where people come together, grow fresh food, improve local environments and contribute to humane, liveable cities and redefine consumption. Hanna and Oh (2000: 207) argue that the community gardens in Philadelphia provide benefits such as food production to ease poverty, the potential for small enterprises, neighbourhood improvement through the creation of social capital and community building and access to nature and fresh produce. King (2008) highlights the importance of resource mobilisation and produce exchange. Stocker and Barnett (1998: 182) found that food produced by individuals was also bartered or given freely to the public. These examples demonstrate a movement toward self-reliance through providing direct access to food, creating networks for the exchange of produce and diversifying the number of food production sites. Direct access to food is an influential factor in diet and health (Larson and Gilliland, 2009; Moore *et al*, 2008; Rose and Richards, 2004; Spence *et al*, 2009; Timperio *et al*, 2008). Patel's (1996: 36) study on urban gardens in New Jersey USA, demonstrate the production of fresh and nutritious food close to home at a reduced cost to the participants. Therefore gardening played a leading role in helping communities to help themselves. These gardens were managed by and for the members of the

community. Baker's (2004) research into community gardening in Toronto highlights that access to healthy, affordable food is a food security agenda. Additionally, Wakefield *et al*, (2007: 92) outline the benefits of direct access to culturally appropriate food. Svendsen and Campbell (2008) identify community gardens in northeast USA as part of a dynamic social network providing a reserve of social capital. Furthermore, they contribute to neighbourhood improvement and safety.

Neighbourhood improvement and safety

The *South East Queensland Regional Plan* (SEQRP) (which is currently under review) aims to achieve cohesive, inclusive and healthy communities which have a strong sense of identity and place, and access to a full range of services and facilities that meet diverse community needs (DIP, 2009b: 77). Multipurpose, flexible and adaptable social infrastructure is sought that can respond to changing the emerging community needs over time. Identifying opportunities to use surplus government land or infrastructure for community purposes contributes to liveability (DIP, 2009b: 130). As will be discussed next, the common threads in the literatures on improvements to urban environments from garden projects are diverse and widespread and highlighted a number of interests including the provision of food producing sites, urban revitalisation community involvement and quality of life.

In terms of the provision of food producing sites, DeKay (1997: 126) argues that community gardens as a part of an urban agricultural design are fundamental to sustainable urban centres. For example, Patel (1996: 35, 38) identifies that urban gardening transformed 30 acres of city waste-land in Newark, New Jersey into 1,900 food gardens involving approximately 6,500 city residents. The gardens played a pivotal role in producing fresh and nutritious food close to home at a reduced cost to the participants. Marginal lands were put to use by composting waste. Urban gardening was found to promote new visions for the city as food producers. Williams' (2008) report on community gardens in Baltimore, USA, reveals the cultivation of ecosystem services and a variety of vegetation which are important to urban food producing sites. Likewise, Matteson *et al* (2008: 140) reveal the contributions that community gardens in New York make for the provision of habitat for a range of bee species and the benefits to plant pollination in the urban surrounds.

Urban revitalisation has also played a significant role. Hynes (1996) asserts the community gardens have revitalised inner city neighbourhoods. Parry *et al* (2005:

179) argue that by converting “decaying urban spaces into ornamental or vegetable gardens or both” neighbourhood liabilities are transformed into assets. Elder (2005) found that community groups transformed wasted space from undeveloped areas and torn down derelict buildings in New York. Voicu and Been (2008: 241) found that community gardens in New York City had positive influence on the value of near-by properties. Urbis Keys Young’s (2004) review of five community gardens in Sydney found that safety for the neighbourhood was increased through reduced crime and vandalism. Ohmer *et al* (2009) report community gardening in distressed areas of Pennsylvania, USA, demonstrate revitalisation of neighbourhoods. Civic engagement was highly motivated in order to restore beauty, give to the community and support the conservation of green space.

Active community involvement in the gardening projects is pivotal to improving the landscape. Using the case of Latino community gardens in New York City, Saldivar-Tanaka and Kransy (2004) highlight the benefits to community building through social, education, and cultural events held at the gardens. These created community activism and participation to which people had a sense of ownership. Hanna and Oh (2000) argue that garden projects contributed to neighbourhood improvement in Philadelphia, USA through the creation of social capital and community building. Irvine *et al* (1999: 33, 42) suggest that from a sustainable land-use planning perspective, the Alex Wilson community garden of Toronto is connected with ecological restoration through community consultation and involvement. This contributed to the liveability of dense urban environments. Francis (1987: 9) documented the different meanings attached to community gardens as opposed to parks in Sacramento, USA from a planning perspective. Francis found that community gardens were used for more active and social pursuits than parks and gardens were rated higher on dimensions of beauty and visual quality than parks. Gardens were also seen as productive and beautiful places that improved the image and land values of the neighbourhood. Gardens were found to more closely match peoples’ ideal images of open space than do parks. Ober Allen *et al* (2008) assert that community garden projects can harness the creative energy of youth toward healthy living.

Finally, improvements to quality of life were found to be a key benefit of neighbourhood regeneration. Bartolomei *et al*’s (2003) study on the Waterloo public housing estate in NSW found that community gardens improved community life on the estate and fulfilled a number of roles including the building of community, access

to education and opportunities for cultural expression that are functions of human health. Alaimo *et al* (2005) illustrate the importance of community gardens in Michigan for building community, crime prevention, health and aesthetics. Harris (2009: 25) claims that urban agriculture reduces carbon emission and energy use and therefore protects open space. It further provides improvements to the local environment (Gelsi, 1999), parks and facilities (Armstrong, 2000), and safety (Armstrong, 2000; Glover, 2003; Waliczek *et al*, 1996). Garnett (2000: 477) argues that community gardens, as a part of urban agriculture in London, contributes to health, environmental, economic, educational and community outcomes. Finally, Crouch (2000: 135) highlights that the UK experience of allotments in the twenty-first century holds both environmental and community-building benefits. Community gardens can also be seen as therapeutic landscapes which contribute to physical, mental and spiritual health (Okvat and Zautra, 2011; Walter, 2012; Wilson, 2003).

The NSDR has clear intentions to integrate neighbourhood concerns with disaster resilience (COAG, 2011: 7). These agreements in the literature support Morrow's argument for an "essential resiliency" (2008: 12). In line with this, the NSDR advocates that land-use planning has an important part to play (COAG, 2011: 12, 13). Local government acknowledges these features of neighbourhood improvement and safety as important (see Appendix 10). However, planning rhetoric for local food provision is not currently met with practice due to low levels of urban food awareness in land-use planning (Howe, 2003: 258) and conflicts over land-use (Schmelzkoff, 1995: 364). As will be discussed next, the politics of place is complicated by another type of geography known as the politics of connectivity (Masuda and Garvin, 2008: 113).

Worldview clashes: Local community sustainability as disaster preparation vs. the neoliberalisation of space

Both the international and national disaster resilience literature and policies have called for better preparation for disaster events, particularly at the community level. The consultation findings from the United Kingdom Cabinet Office (UKCO) *Draft strategic national framework on community resilience, Consultation document* identify "concerns about a culture in which people expect immediate support and assistance whatever the emergency and the impact on them" (UKCO, 2010: 13). Additionally, Queensland's State Disaster Management Group (SDMG) recognises that "communities should not become reliant on such responses, and should make every

effort to become self-sufficient in all their needs in case they become isolated” (SDMG, 2010a: 9). Under the *Queensland Re-supply Guidelines*, the current scope for individual and community preparations for food survival is confined to stockpiling sufficient long-life foods and making arrangements with local suppliers for extended lines of credit (SDMG, 2010a: 9, 10).

The NSDR challenges this current notion of self-sufficiency by advising that, “local resilience-based planning arrangements” should be encouraged that “foster self-reliance tailored to community conditions” (COAG, 2011: 14). The NSDR suggests that people should be “capable of organising themselves so that social and economic activities are restored” (COAG, 2011: 5, 6). This highlights Morrow’s argument for an “essential resiliency” (2008: 12), which, according to Mileti *et al*, (1995: 117) is about “sustainable local economics that are capable of supporting quality lifestyles”. Therefore, the NSDR call for “coordinated planning and response” will need to enable these considerations at the neighbourhood and community levels (COAG, 2011: 7).

These calls raise tensions how people either connect to make these actions happen or disconnect, leading to inaction. The politics of connectivity is based on linkages between gardening groups with the wider social, economic and institutional environment where actors, places and institutions are as important as the shared space in deciding how the political issues will unfold (Masuda and Garvin, 2008: 112). In line with Habermas’s (1974) call for building consensus and negotiation through communicative action, the NSDR recommends that “strong networks” should “share information and build skills and understanding at all levels” (COAG, 2011: 9) and that partnerships should engage in “more effective collaboration” (COAG, 2011: 8). However, this is not necessarily always the case with establishing urban food producing sites. The case study of the New York City garden dispute may illustrate this tension between: 1) the neo-liberalisation of urban space that is common to urban environments and cities; and 2) garden agendas that emphasise localised food-producing spaces of dependence.

New York City embraces the role of urban entrepreneurial governance. Like other major global cities, New York engages global market competition to produce the economic growth and stability considered at central to the redistribution of social wealth and welfare (Harvey, 1989 and Jessop, 1997 cited in Schmelzkopf, 2002: 324). Accordingly, market privatisation is seen as ‘natural’. This is congruent with Habermas’s proposition that the life-world is underpinned by a natural attitude and is

taken for granted in everyday life. Smith and Kurtz (2003: 193, 197, 198) assert that legal mechanisms and ideology both consolidate the privatisation of public space through the norms of capital accumulation. According to Mitchell (cited in Smith and Kurtz, 2003: 198), this view is naturalised as:

The public space in the city is redefined ... as a landscape, as a privatised view suitable only for the passive gaze of the privileged as they go about the work of convincing themselves that what they are seeing is simple natural.

In the conflict over New York City's community gardens, Smith and Kurtz (2003: 193) highlight that the political struggle was due to challenging this neo-liberalisation of the city's urban space. The fight to save community gardens in New York City demonstrates issue of the "right to space", and what unfolded there-on was referred to as a "trial by space" (Schmelzkopf, 2002: 323). Under these conditions, conflicts over land-use (Schmelzkoff, 1995) and lack land-use rights (Moskow, 1999) can occur. Some often cited tensions in the demand for urban gardening space include gardener's uncertainty and feelings of anxiety due to insecurity of tenure (Elder, 2005: 773; Moskow, 1999: 133; Teig *et al*, 2009: 1119) and council impositions of garden rents on not-for-profit arrangements (Harris, 2009: 25). These tensions can be accompanied by gardener's frustrations on dealing with low levels of urban food awareness in land-use planning (Howe, 2003: 258) addressing the bureaucratic mindset in order to gain government support and funding (Jamison, 1985: 473) and feelings of precariousness due to the "whim of city planners" (Patel, 1996: 45). Gardens can therefore demonstrate the tension between the "use values" of the gardens as opposed to the "exchange values" as set out in the privatisation of public space (Smith and Kurtz, 2003: 201). The tensions are, in essence, the clash of worldviews - the naturalisation of neoliberal ideology on one hand (Smith and Kurtz, 2003) and the ideology of localism presented as a "counterpoint to superblock planning" (Elder, 2005: 774).

These tensions are applicable for the NSDR in its call for shared responsibility with communities for long-term disaster resilience. The NSDR states that the characteristics of disaster resilient communities include social support systems, networks, social cohesion, mutual interest groups, adaptive, flexible, capable of organising themselves, strong social networks, supportive in crisis, partnerships, activities informed by local knowledge, empowerment and sharing responsibility (COAG, 2011: 5). The ability to self-organise into network-based infrastructure is therefore a key feature of disaster resilience. The NSDR calls for partnering with those who can bring about change. Congruent with the objectives of speech forums

(Habermas 1974) the development of “innovative risk management approaches” are sought which acknowledge “existing community structures and networks” (COAG, 2011: 10). The conference on “Food security and environmental change” held in April 2008 in Oxford, UK, identified that a key topic was “governance of food systems in the face of global change” (cited in Ericksen *et al*, 2009: 375). The NSDR has identified that more focus is needed on action-based resilience planning to strengthen local capacity and capability, with greater emphasis on community engagement and a better understanding of the diversity, needs, strengths and vulnerabilities within communities (COAG, 2011: 2).

In spite of these policy prescriptions, community gardens are not a priority for planners as the use of garden space is seen as either the temporary use of vacant land (Francis, 1987) or is associated with private land-use (Lawson, 2004). The prospects that community and school gardens may function as hubs for building food security and social resilience are limited by the predominant view that small food producing units are inefficient, of limited relevance or impact, or just plain backward (Moskow, 1999: 133; Patel, 1996: 45; van Vuuren, 1988: 4). Community gardening may therefore appear to be a leisure activity that holds little relevance to the concerns of government and policy makers (Gelsi cited in King, 2008: 120) further compounding uncertainty on how to engage with people to run gardens even if they wished to (Lawson, 2004). Additionally, there may be perceptions that urban gardens will be competitive with rural agriculture (Moskow, 1999: 133). However, some incremental changes have occurred within local government to recognise such efforts. With regards to community and school garden groups in Brisbane and across Australia please see Appendix 9. These form part of a broader, *Food in the City* agenda as outlined in Appendix 10 on local government policy approaches.

The role of community and school gardens as part of the urban agriculture movement is therefore part of an emerging worldview on empowering communities to share their own responsibility for disaster resilience. McLennan and Handmer (2011: ii) identify that social contracts are important features of shared responsibility as they can signify conflicts between freedom of choice and “constraints or obligations” imposed by the State. Tensions within gardening groups can also complicate coordinated planning. Community and school gardens demonstrate many historical precedents in food-related self-reliance and organisation in times of crisis. They therefore represent emergent case studies in shared responsibility for resilience-building, coordinated planning and response (COAG, 2011: 7). Speech forums may be one avenue for

developing these social contracts. McLennan and Handmer (2011: ii) further argue this re-thinking and re-configuring of governance style is a valid lens for the shared responsibility framework, as it demonstrates a challenge to the legitimacy of our dependency on political institutions to deliver for us. Education and health are two areas forging new ground in the emerging worldview that community and school gardens can contribute to food security through building social resilience.

Emergent policy connections in health and education

Education and community health are emergent policy areas making connections between community and school gardens, their contributions to building capabilities through learning and adaptation, and finally improved outcomes for building resilience and food security. This section will introduce the role of improving nutrition through gardens and links with the reduction of obesity. The various benefits to community health and wellbeing agendas will then be discussed. School-based education and training of youth and adults are also drawing these links.

The role of nutrition in the reduction of obesity

Drawing from research from the National Centre for Epidemiology and Population Health (NCEPH), Dixon and Broom (2007: 3) argue that the combination of the accessibility of processed foods, sedentary lifestyles and the pervasive use of labour saving devices are contributors to the incidence of obesity in Australia and worldwide. Obesity can lead to diabetes, and these two conditions are well known to increase the risk of coronary heart disease (CHD) (Millstone and Lang, 2003: 24). CHD continues to be the biggest killer of humans in Australia (Dixon and Broom, 2007: 4) and its reduction is therefore a key action for Queensland Health (see Appendix 11). It is well documented that individuals and groups interact with their environments and these interactions influence their levels of physical activity and food intake (Lake and Townshend, 2006: 262). As will be discussed next, the evidence linking community and school gardens with improved nutrition, reports access to: 1) improved levels of fresh food consumption; and 2) healthy eating choices in schools.

There are a number of studies that demonstrate the link between access to fresh, nutritional food and the maintenance of long-term needs as they relate to human health. These benefits are also demonstrated to extend to community assistance in

times of need. Hopkins (2002) advocates for community gardens in the provision of clean, fresh and affordable food in urban settings. Other research provides support. Patel (1996: 38) reports improved diet and nutrition, socio-economic well-being and a better quality of life for low income families from involvement in an urban gardening program in Newark, New Jersey. Ober Allen *et al* (2008: 418) assert that youth participating in voluntary work in two Michigan community gardens engaged in healthy eating through increased vegetable consumption. Alaimo *et al*'s (2008: 94) survey of 776 community garden participants in the US found that participants were more likely than non-participants to consume fruit and vegetables. Twiss *et al*'s (2003: 1435) research on six community gardens in California identifies participants demonstrate increased physical activity and consumption of fruit and vegetables. Lautenschlager and Smith (2007: 245) identify that the learning opportunities for healthy eating choices were enhanced for youth due to participation in gardens.

The research has also identified links between access to fresh food and behaviour change in terms of food choices and preferences in school settings. Somerset *et al* (2005: 25) argue for the re-establishing healthy relationships with food in school children via school garden activities including the consumption of fresh produce. Nutritional benefits are often reported in association with well-being. The following five examples are drawn from Blair's (2009: 30) survey on nutrition in schools implementing school garden projects. Lineberger and Zajicek (2000) conducted a quasi-experimental test for measuring attitude changes toward fruit and vegetables in 111 third to fifth grade students from 5 schools in Texas, USA. Using a teacher's activity guide, questionnaires and food journals, an increased preference for vegetables was reported with an increased preference for both fruit and vegetables as a snack. Morris *et al*, (2001) conducted a study on the feasibility of a school gardening program for nutrition education and food behaviour change. First grade students from 2 California schools, one with school gardens and one without were tested. The gardening children produced higher scores on food-group identification and were also more willing to taste the vegetables. McAleese and Rankin (2007) conducted an assessment of garden-based nutrition education on the consumption of fruit and vegetables with 122 sixth-grade students from three elementary schools in Idaho, USA. Two of these schools proceeded with nutrition lessons only, and one school added gardening activities to the nutrition lessons. The findings revealed that fruit and vegetable consumption only changed at the school that integrated gardening into the lesson. The tuckshop servings of both fruit and vegetables more than doubled. The intake of vitamins C and A, and fibre also increased at this school.

Morris and Zidenberg-Cherr's (2002) study on garden enhanced nutrition education curriculum with fourth-graders demonstrated improvements in the children's knowledge of nutrition and preferences for some vegetables. Finally, Canaris (1995) reports on a study with first to fourth grade students in Vermont, USA, working with an organic farmer to develop a snack garden and learn where food comes from. The findings included an increase in student nutrition, creativity, food literacy and community involvement. The connections between community-based health and general well-being are increasingly documented as an emergent policy area in long-term community resilience.

Community health and well-being as an emergent policy area

As stated, Queensland Health aims to address the long-term health needs of communities through the strategic reduction of obesity (see Appendix 11). Additionally, the Queensland Department of Communities aims for long-term community health through active promotion of social inclusion. A review and analysis of community and school garden literature revealed four benefits for community-based human health and well-being that are generated from gardening activities. As will be outlined next, they include access to: 1) fresh food; 2) reflective spaces; 4) education; and 4) social connections.

Access to fresh food

Armstrong (2000: 319) suggests that gardens provide access to fresh food, enjoyment of nature and health benefits. Wakefield *et al* (2007: 92) demonstrate that health benefits for participation in community gardens in Toronto include a wide range of well-being indicators including access to fresh food, physical activity, cultural exchanges and social support. Blair *et al*'s (1991) evaluation of a Philadelphia urban gardening project found that gardeners ate more vegetables than the control group. The reasons for involvement included recreation and exercise. Benefits to mental health and life satisfaction were reported as was access to produce and nature. Henderson-Wilson's (2005) surveys with Melbourne and Sydney inner-city residents demonstrate that access to green spaces including community gardens increases individual's quality of life. D'Abundo and Carden (2008: 83) assert that respondents of a community garden education program in North Carolina USA, designed to reduce obesity, reported nutrition benefits, community development and sense of wellness.

Access to reflective spaces

Hynes (1996: viii) asserts that community gardens of America's inner cities serve to nourish the body and the soul. Donati *et al* (2010: 208) suggest that community gardening is an embodied practice that brings "other ideas into dialogue" that can "highlight the forms of knowledge that might be excluded" from neoliberal approaches to sustainability. Focussing on the pleasures of gardening, connections between people and between human and the non-human are explored. In line with this, Francis and Kellagar (1999) relate that nature's seasonal cycles challenge people with their own changes and mortality. This provides moments for the loosening of the imagination, reflection and introspection on the transience of life. Additionally, nature provides experiences of reproduction, generation, optimism and vitality (Gough, 2007: 25, 26). Delind (2006: 127) argues that there are cultural and non-rational elements fundamental to understanding people, their relationship with local food and ethical decisions (Delind, 2006: 121). Therefore being in a place, such as a garden, provides opportunities for learning, play, engagement, identity formation and political initiatives – all as prerequisites for civic action.

Kingsley *et al* (2009: 207, 212) conducted semi-structured interviews with ten members of the Port Melbourne community garden. They reported enhancement to health, wellbeing, where they would come together to form a 'sanctuary' from pressures and gain social support. A sense of worth and involvement with spiritual, fitness and nutritional benefits due to their participation was argued. Furthermore, a "connection with the earth" and being "in touch with nature" was seen as important. Jamison (1985) and Waliczek *et al* (1996) report intangible factors from community garden involvement such as self-worth and self-confidence. Glover asserts community gardens can promote reciprocity, trust and civic participation as needed forms of social capital (2004: 143) which in turn, contribute to the formulation of networks as a governance tool.

Access to education opportunities

In terms of troubled youth, Hudkins (1995) reports that horticultural therapy has been used with success to improve self-confidence and esteem. Studies also focused on school garden opportunities. Alexander *et al* (1995) conducted a pilot study to identify and evaluate the short-term effects of the master gardener classroom-gardening project. Observations and interviews with the principal of the San Antonio school, 5

teachers, master gardener, 3 parents and 52 second- and third-grade students, revealed key themes. Moral development related to life lessons were reported to be embedded in gardening activities and these benefitted by the presence of parental support. Enthusiasm and involvement were said to have increased, as was student's experience of pleasure and their satisfaction in their own efforts and the teamwork. The master gardener also played a key role as a mentor. Brunotts (1998) evaluated the Pittsburgh Civic Gardening Centre's school garden outreach program. Open-ended and closed questions were posed with teachers, parents, 150 kindergarten children and second and fourth-grade students in groups. Identified themes included broadening of students' horizons, fun, hope, pride and excitement in learning. More parental involvement as seen as beneficial as was cooperative teamwork, taking responsibility and caretaking.

Thorp and Townsend (2001) conducted phenomenological interviews on the impact of a garden-based agricultural education curriculum on 5 teachers and 40 elementary students. The themes that emerged from this work included reshaping of the school culture toward hope, growth and community. Improved sense of control and place and children's experience of comfort, security, belonging, pleasure and wonder were reported. Opportunities for self-expression and deeper meanings related to food were drawn.

Moore's (1995: 75, 79) study of the development of an environmental pedagogy of outdoor teaching to promote sustainable development values was based in a Californian primary school. With collaboration from university faculty, students and an outdoor resource teacher the themes that emerged included children's emotional involvement with the living systems within the garden. The constant change and interaction with the surroundings were found to facilitate adaptation to new circumstances. A collective sense of purpose through shared experiences centred on getting their hands in the soil and freedom of expression and discipline were reported.

Brynjegard's (2001) interviews with students, parents and teachers at 3 elementary schools in the San Francisco Bay area investigated children's insights into environmental issues through the school gardens. Key themes involved children's opportunity for responsibility and decision-making which promoted attachment, empowerment and ownership. The opportunity for making detailed nature

observations were reported to lead to both cognitive and heart-felt understandings of the natural world and an identification with and appreciation for living things²⁶.

Access to social connections

Social inclusiveness is a psycho-social dimension of the health agenda (Kingsley *et al*, 2009: 207). There are a number of studies that demonstrate this link between social inclusion and the development of long-term needs as they relate to human health. For example, Pooley *et al* (2005: 71) concur that “sense of community reflects the feelings of attachment and belonging that an individual has towards a community”. Teig *et al*'s (2009: 1115) interviews with members from 29 community gardens in Denver Colorado, identifies a link between social connections and health through the role of ‘collective efficacy’. Sampson *et al* (1997) described collective efficacy as the meeting ground between mutual trust and shared willingness to act for the neighbourhood's common welfare. Solidarity therefore results in social cohesion (Armstrong, 2000; Sampson *et al*, 1997). Social processes as described by community gardeners in Teig *et al*'s (2009: 1115-1120) study include social connectedness, mutual trust, reciprocity and care, collective decision-making and civic engagement. As such, Teig *et al* (2009: 1116) assert that community gardens are an example of a place-based strategy for strengthening community health across people's life-spans. As an example of community-based environmental change, it can transcend age, ethnicity, race, income and education.

Likewise, Kingsley and Townsend's (2006: 525) small qualitative study with the ‘Dig In’ Melbourne community garden, demonstrated benefits from members in: 1) social cohesion – sharing values and common aims and codes of behaviour; 2) social support – people to turn to in crisis; and 3) social connections – creation of social bonds and networks. Jamison (1985: 473) reports increased development of community self-worth, confidence, food production, equality and cooperation as benefits of community garden involvement. Urbis Keys Young's (2004) review of five community gardens in Sydney found that decreased social isolation contributed to the health of gardeners. Becoming active community members, taking on leadership roles and joining group efforts toward collective goals has reported health benefits (Langhout *et al*, 1999; Myers, 1998).

²⁶ These five case studies involving school gardens are distilled from Blair's survey of the literature (2009: 28, 29).

Education as an emergent policy area

The key themes emergent from the social resilience literature analysed in the previous chapter highlighted actions and capacities to be developed and encouraged at the community level. Areas of importance include strengthening the assets of human and social capital such as existing knowledge, skills and abilities. It stressed the importance of using, adapting and sharing those assets to prepare for the consequences of disasters. Building local capabilities is a core theme in building disaster resilience. The literature on community and school gardens highlights the importance of access to opportunities for active engagement in learning, education, training and re-skilling. This theme is discussed below in three stages: 1) primary school children's involvement in school gardens as formal education settings; 2) youth and high-school learning and engagement; and 3) adult involvement in community gardens.

Primary school children in formal education settings: Positive attitudes and learning through school gardens

Platonic philosophers used gardens as teaching tools over 2400 years ago²⁷ (Sayre, 2002). The variety of activities generated from living gardens has enhanced classroom lessons for 200 years in the West (Becker, 1995; Berghorn, 1988; Braun *et al*, 1989; Canaris, 1995; Neer, 1990; Stetson, 1991; Subramaniam, 2002). Exposure to gardens is linked with the generation of positive attitudes concerning the natural environment. For example, growing up in proximity to natural elements is linked with positive attitudes toward trees, with the strongest influences rising from active gardening activities (Lohr and Pearson-Mims cited in Lekies and Sheavly, 2007: 68). Francis' (1995) qualitative interviews with 100 Norwegian and Californian gardeners focussed on childhood memories of gardens and the significance of their meanings as described in adulthood. All participants reported "vivid memories of favourite private places in gardens that were protected, sheltered, or hidden" (cited in Blair, 2009: 19). Francis (1995: 8) suggests that the interviews indicate that the meanings attached to gardens are "a complex ecology of ideas, place and action. It was found that when children become involved as gardeners or farmers rather than

²⁷ According to the Internet Encyclopaedia of Philosophy (IEP), a peer-reviewed academic resource, the word "Academy" (*Academia*) originated from "a public garden or grove in the suburbs of Athens". It was surrounded with a wall and "adorned with statues, temples, and sepulchres of illustrious men; planted with olive and plane trees, and watered by the Cephisus" (Greek river God). Within this enclosure, Plato used a small garden in which he "opened a school for the reception of those inclined to attend his instructions". From this "arose the Academic sect, and hence the term Academy" (IEP, 2001). Plato's garden can be viewed as a teaching instrument which uses horticultural metaphor for aspiring to the greater Good (Sayre, 2002).

as passive observers of gardens, a deeper significance and meaning is established". Bradley *et al* (2000) identified that college students pursuing of horticulture as a major was strongly influenced by exposure to gardening experiences during childhood.

There are many studies which have connected learning experiences occurring within the context of natural environments with the building of pro-environmental knowledge, behaviour and attitudes (Ballantyne and Uzzel, 1994; Ballantyne *et al*, 1998; Ballantyne *et al*, 2001a, b; Blair, 2009: 15; Bogner, 1998; Lai, 1999; Lohr and Pearson-Mims, 2005; Palmer, 1999; Rickinson, 2001; Skelly and Zajicek, 1998; Tanner, 2001; Waliczek and Zajicek, 1999). Ballantyne and Packer (2006: 15) claim that "learning in the natural environment is potentially a powerful medium for developing students' environmental sensitivity, bringing about concrete understandings of environmental issues, and engaging students actively with ecological issues".

In formal education settings, research with teachers has shown school gardens to enhance learning of students and promote learning (DeMarco, 1999; Skelly and Bradley, 2000), improve students' academic learning (Alexander *et al*, 1995; Canaris, 1995; Klemmer *et al*, 2005; Sheffield, 1992) and promote positive outcomes in the areas of science achievement and food behaviour (Blair, 2009: 15). DeMarco *et al* (1999) conducted a school-gardening survey of 322 elementary schools. Of the 73% questionnaire return rates who were assumed to be mostly teachers, 61% reported that the gardens were successful at enhancing student learning. The gardens were used for teaching in the areas of science, maths, language arts, health and nutrition, ethics, social studies and history. The themes of student ownership and the integration of the school garden with other subjects emerge as crucial for the school garden success. Additional benefits include improved knowledge and attitudes related to nutrition (Canaris, 1995; Lineberger and Zajicek, 2000; Pothukuchi, 2004), physical activity (Pothukuchi, 2004), development of moral attitudes (Alexander *et al*, 1995) and interpersonal communication and skills (Alexander *et al*, 1995; Canaris, 1995; Pothukuchi, 2004). Doyle and Krasny (2003: 91) argue that there are educational benefits of engaging students in research as it applies to community gardens. Learned methods included collecting oral histories and mapping garden processes. Lekies and Sheavly's (2007: 67) study with primary school children at a school garden site in New York State indicated that gardening skills had the strongest effect on their interest in gardening. Likewise, based on 13 school gardens

in Queensland, Somerset *et al* (2005: 25) advocate school-based community gardens as a method to embed into school curriculum children's enjoyment, consumption and learning of fresh produce. As such, inclusive landscapes can be designed. In terms of designing landscape, Salvadori (2001: 87) advocates that children can design community kitchen gardens and outdoor spaces for play. In terms of an informal education setting, Byrd *et al* (2007: 39) report on the designing of a children's water garden as an informal education 'lab' forming part of the *South Carolina Botanical Garden Children's Garden Design Project*. Students were reported to have gained "invaluable real-world experiences solving problems and interacting with clients while contribution to the local community". Finally, Blair's (2009: 21, 31) review of seven qualitative studies of school gardens effects in elementary schools demonstrates a variety of benefits for children's essential resiliency²⁸.

These benefits were taken on board in the former Queensland State Government's formulation of the *Queensland Environmentally Sustainable Schools Initiative* (QESSI) Alliance, and other government and community based initiatives (see Appendix 12). Therefore, building the essential resiliency of children through the

²⁸ Blair's review of seven qualitative studies of school gardens effects in elementary schools includes (2009: 21, 31):

1. Student delight and motivation from the pleasures of gardening, exploration and getting dirty outside (Alexander *et al*, 1995; Brunotts, 1998; Brynjegard, 2001; Canaris, 1995; Faddegon, 2005; Moore, 1995; Thorp and Townsend, 2001);
2. There is an improved student attitude and pride in the gardens and the produce generated from them. Improved parental involvement in the school because of their children's involvement (Alexander *et al*, 1995; Brunotts, 1998; Brynjegard, 2001; Canaris, 1995; Faddegon, 2005; Moore, 1995; Thorp and Townsend, 2001);
3. The gardens had a strong community-building element, teamwork, student bonding, more adult interactions and community outreach (Alexander *et al*, 1995; Brunotts, 1998; Brynjegard, 2001; Canaris, 1995; Faddegon, 2005; Moore, 1995; Thorp and Townsend, 2001);
4. The gardens provided a diversity of learning experiences such as environmental stewardship, math and science lessons, recycling, creative reuse of materials, propagation, germination and seed saving (Alexander *et al*, 1995; Brunotts, 1998; Brynjegard, 2001; Canaris, 1995; Faddegon, 2005; Moore, 1995; Thorp and Townsend, 2001);
5. Vegetable gardens provided food and nutrition education; understanding of food-systems, opportunities for tasting, snacking, cooking, food sales and philanthropy. This included a supply of food for work done (Canaris, 1995; Faddegon, 2005; Moore, 1995; Thorp and Townsend, 2001);
6. Non-formal learning environment of the garden settings provided opportunities and approaches for the discovery and exploration of natural phenomena (Brynjegard, 2001; Canaris, 1995; Moore, 1995; Thorp and Townsend, 2001); and,
7. As many elementary teachers lacked experience of agricultural science and skills for growing plants (Brunotts, 1998; Faddegon, 2005), school gardens required dedicated and experienced adult volunteers and gardeners or paid coordinators in order to flourish over the long-term (Alexander *et al*, 1995; Brynjegard, 2001; Canaris, 1995; Thorp and Townsend, 2001).

broader agenda of school-based environmental education is an acknowledged government agenda²⁹.

Youth and high-schoolers: Learning and engagement through formal and non-formal garden participation

Blair (2009: 31) identifies that research of gardening involving high school students is rare compared with primary school. Fusco (2001: 860) advocates for the role that community gardening can play for high-school students and their learning in the context of science education. Fusco demonstrates the relevance of engaging student's interests within the broader community to enable their ideas to come to fruition. A variety of studies have therefore linked youth learning with experiences of environmental action (Emmons 1997; Jenson, 2002; Melchior and Bailis, 2004; Volk and Cheak, 2003). Emmons (1997) defines environmental action as a strategy which entails decision-making, planning, implementation and reflection by those who intend to achieve a particular environmental outcome. Such actions can both directly contribute to solving problems and indirectly influence others to contribute to the solving of the problem (Jensen and Schnack, 1997; Schusler *et al*, 2009). Likewise, Schusler *et al* (2009: 113) identify that those who teach or are non-formal educators of youth participation facilitate "multiple forms of action" within any given project. They outline five forms of youth environmental action: 1) physical environmental improvements through restoration and enhancement; 2) community education through organisation of events and production of advertising media; 3) inquiry, which utilises assessments, mapping, surveys, monitoring and evaluation; 4) public issue analysis and advocacy for policy change involving research and analysis of impacts and policy recommendations; and 5) products or services contributing to community development such as growing and selling of food and distribution of food to local food pantries.

Learning through experience is important for adolescents. Barratt Hacking *et al* (2007) suggest that young people learn through experience and that local environmental research projects are a pathway for youth to be engaged and participate. Schusler *et al* (2009: 111) advocate involving youth in local environmental action. They argue that this produces active citizenship in both their present and future lives. The study was based on semi-structured and open-ended

²⁹ Queensland State education policies are currently under review with the new State Government elected in 2012.

interviews of 33 professionals in guiding youth in environmental action in the USA. The research reports on these facilitator's accounts of the "harvests" of youth participation in environmental action of 10 to 18 year olds. The interviewees reported "a strong faith in young people's abilities coupled with a passion for the natural environment and/or social justice they enjoyed sharing with youth"³⁰ (Schusler *et al*, 2009: 114, 116).

Opportunities for learning are important for adolescents. For example, Rahm (2002) cites the importance of emergent learning opportunities in an inner-city youth gardening program. Sturman's (2006) interviews with adolescents suggests that programs linked with youth interest identify key features of importance to them such as being consulted, access to activities providing experimentation and feeling respected for their contributions. Lautenschlager and Smith (2007: 245) identify that the learning opportunities for the skills needed for understanding and cooking food are enhanced for youth due to participation in gardens. Ober Allen *et al* (2008: 418) assert that two Michigan community gardens provide opportunities for youth to participate in meaningful voluntary work, develop positive identity and build self-esteem and skills. Reduced neighbourhood crime was also reported. Krasny and Tidball (2009b) report on an American out-of-school program called Garden Mosaics for adolescents. Arguments are made for interactive models of learning with multiple opportunities for learning that are not a part of the formal classroom structure.

These actions and examples from child and youth gardening experiences enhance the development of 'action competencies' (Jensen and Schnack, 1997). Action competencies promote capabilities for critical thinking and responsible actions (Simovska, 2000: 30) and develop the learner's ability to critically assess a situation

³⁰ Some of the success stories from Schusler *et al* study included:

- A science teacher's account of transforming a misused school courtyard into a working butterfly house and native plant sanctuary included multi-dimensional outcomes such as releasing butterflies into the wild; youth enthusiasm; influencing of the broader community through the project; inclusion of young students; connecting youth with the community; the capability of youth given the opportunity and guidance; and the joy of the teacher's observations (2009: 118, 119);
- A teacher's account of an ecology course where students undertook sustainability action initiatives also included multiple dimensions such as: improvement of the environment through the planting of a garden full of flowers and vegetables; involvement of community members; connections between young people; continuing involvement outside the class structure; and unpredictable moments such as a young person's inspiration, ideas and acts (2009: 119, 120); and
- An outreach coordinator's account of involving youth in transforming vacant lots into urban gardens for food security through a neighbourhood-based program included: youth actions (planning, requesting donations and distributing 'food facts') contributed to community outcomes (hundreds of people inquiring about sustainable urban agriculture); youth pride in their abilities; and successes in the "synergy arising in the interactions between youth and community development" (an ongoing cycle of transformation between the individual and community levels) (2009: 120).

and act based on their assessment and values (Jickling, 1992; Jickling and Spork, 1998; Schusler *et al*, 2009: 113). An interest in any given activity will develop into a specific set of skills through exposure and experimentation. Competence is built as the skills are learned leading to a longer-term commitment of the activity (Lekies and Sheavly, 2007). Community gardens provide opportunities for informal apprenticeship (Walter, 2012) and employment training programs for youth (Pudup, 2008). The previous government links formal training of youth with community groups for acquisition of skills and training. Various community groups listed in Appendix 13 participate in this initiative.

Adult contexts: Training and re-skilling in community gardens

Community gardens have been seen as a pathway for the re-skilling of sustainable behaviours and practices through non-formal education and training opportunities (Howe and Wheeler, 1999; Stocker and Barnett, 1998; Walter, 2012). For example, Stocker and Barnett's (1998: 179, 184) research on the King William community garden in Western Australia argues for community-based sustainability projects. In addition to the creation of community places, and the production of fresh food generated from these spaces and contributes to the use and dissemination of community science (such as horticultural techniques and skills) and innovative technologies (such as grey water use, solar and wind power generation). Based on a study of city farms and community gardens in Leeds and Bradford in the UK, Howe and Wheeler (1999: 13) concurs that education connected with urban agriculture and community development lead to more sustainable development.

Some researched examples for non-formal education and learning settings are provided here. Corkery (2004: 61) highlights the non-formal education aspects for learning through involvement in community gardens in a Sydney public housing estate. Opportunities for learning included gardening practices and self-management. Urbis Keys Young's (2004) review of five community gardens in Sydney found that opportunities for learning and work skills were present. Fulton (2005) outlines community garden contributions to the organic movement through enterprises, gardening practices and raising of awareness about organic agricultural benefits. In terms of the generation of skills, Elliott (1983) emphasises the community and job training benefits of community gardens as a form of urban agriculture. Drawing on five case studies, Feenstra *et al* (1999) illustrate the benefits of productivity,

employment, training and entrepreneurialism of community gardens in California. Flowers and Chodkiewicz (2009: 71) agree that local communities can work with schools to become “key sites” for actions addressing sustainability and climate change issues. Additionally, the *Margaret River Alternative Technology Centre’s* organic garden in Western Australia is located adjacent to a high school. The space is used for casual and permanent employment and to train young people in organic gardening methods and self-support skills (Stocker and Barnett, 1998: 82). Many authors concur that community gardens serve as: education spaces for self-help skills and economic development (Patel, 1996); informal education spaces providing “free-choice” learning programs (Skanavis and Sakellari, 2009: 9); pedagogical sites for learning (Hall *et al*, 2011); incidental learning (Foley, 1999); and short term, voluntary and experiential learning that is “flexible and adaptable to the needs and interests of learners” (Walter, 2012: 3).

The NSDR suggests that “a sense of shared responsibility” will contribute to coordinated planning and response and that communities should be “supported through appropriately targeted training and awareness activities, including those that highlight the role of volunteers to enhance local capacity to mitigate and cope with disasters” (COAG, 2011: 7, 9). Volunteers are key contributors to community and school garden initiatives and form key partnerships in supporting capabilities for disaster resilience through the targeted promotion of community resilience, social inclusion and social enterprise (see Appendix 14). Volunteers build capacities for resilience through informal training, education and re-skilling. Through locally based volunteer efforts, these approaches for food literacy and knowledge could address the NSDR call for (COAG, 2011: 8):

*Risk reduction knowledge [that] is included in relevant **education and training programs**, such as enterprise training programs, professional education packages, schools and institutions of higher education (Emphasis added).*

It would form a key part of the need to communicate with and educating people about risks thereby ensuring that: “vulnerable individuals have equitable access to appropriate information, training and opportunities” (COAG, 2011: 9). McLennan and Handmer highlight that socio-cultural contexts are an important dynamic for shared responsibility. Here, the “multiple perspectives” which exist within our education and training bodies, including society, need to be “sought out, understood, and engaged with actively” (2011: iii) as a key approach to developing essential resiliency. However, as will be discussed in the following chapter 6, how to capture multiple perspectives or worldviews is problematic and requires an understanding of how

networks forged between these worldviews remains a challenge. As argued in this chapter, social relationships which anchor their dependencies for food within localised spaces have strengths. However, these localised 'spaces of dependence' also have weaknesses for coordinated planning and response due to the potential nature and dynamics of partnerships and networks at the community and neighbourhood levels. On the up-side, spaces of social dependence serve to foster skills training, entrepreneurial ventures and education programs (Blair *et al*, 1991; Goldsmith and Randolph, 1993; Payne *et al*, 2001). Additionally, community and school gardens within urban spaces emphasise the human role in contributing to community development processes such as the building of relationships, participation and inclusiveness, resource mobilisation and the sharing of skills and knowledge (King, 2008: 111, 120). On the down side, Jarosz (2008: 233) asserts that these kinds of localisations of food systems cannot be assumed to be uniformly, good or progressive. The circumstances which are place-based, with their social, political and ecological flavours are necessarily complicated.

Conclusion

The research question addressed in this chapter was: *How do community and school gardens contribute to building social resilience?* It explored the NSDR criteria for leading change and coordinating effort for shared responsibility through the coordinated planning of partnerships and networks.

Community and school gardens were found to contribute to building social inclusiveness by providing opportunities for community empowerment and participation and by providing democratic spaces to strengthen social ties. However, McLennan and Handmer (2011) asserted that the underlying structures of belief and perception can be a challenge to make sense of and deal with. The politics of shared terrestrial commons between and within garden groups demonstrated the potential for clashes in worldviews and the weaknesses in the main argument that gardens can function as hubs for building social inclusiveness as a key feature of social resilience.

Despite this weakness, there are precedents in self-organised and coordinated planning of community and school gardens in times of food crisis. Additionally, garden development has improved neighbourhoods and their safety. However, the relationships between garden groups with members of the broader policy

communities also highlight the potential for clashes in worldviews. It further consolidated the weaknesses in the main argument that gardens can function as hubs, not only for building coordinated action but also self-reliance in food security.

Emergent policy connections in the areas of health and education were outlined as avenues for learning and adaptation. The role of nutrition in the reduction of obesity was shown as a policy concern. Building community health and wellbeing and then the role of education were also discussed as emergent policy areas. In summary, the challenge of integrating the multiple worldviews into coordinated action was found to be complicated. Ideological tensions can arise within and between community groups and between these groups with government agencies and businesses. This need to bring the various worldviews together has been discussed as a core feature of communicative action. How these dynamics can be addressed is ultimately a question of governance and its ability to anticipate and respond to the inherent complexities of food risk perception, resilience-building activities and shared responsibilities that are anchored at the community level. It is to this challenge of developing an integrated governance approach that we now turn.

Chapter 6: Framing the implications for Network Governance

Introduction

The previous literature review and analysis chapters demonstrated the need for more inclusive and holistic approaches so that the community level can share responsibility for its own resilience and food procurement. There are, however, some broader issues relating to democracy, so the research question addressed in this chapter is: *What governance opportunities and challenges are posed for the democratic management of networks and relationships?* The aim is to review and analyse the literature to reveal how government, business and communities are implicated in the management of the necessary networks.

The first theme that is addressed frames the broad field of Network Governance. A differentiation is made between Policy Networks and Governance Networks as they both fit under the broad umbrella of Network Governance. Establishing a clear conceptual framework between the two is done by looking at their historical contexts, network focus and policy alignment and worldviews. This will facilitate a clearer critique of the implications for policy options.

The second theme addressed in this chapter frames Network Governance as a form of policy 'holism' and 'integration'. The *National Strategy for Disaster Resilience* (NSDR) aims for a whole-of-government approach to disaster resilience. Governance structures are therefore needed to enable policy to integrate agendas across and between government departments for building food-related disaster resilience and democratically manage locally-driven food garden initiatives. These calls are congruent with the objectives of speech forums to produce mutual understanding and collaborative action. However, such actions are also subject to four measures of network performance. First, the issue of inclusiveness within the network is examined. The idea of formalising informal networks is discussed with reference to the Australian Landcare project, land-use planning, and the Local Government Association of Queensland (LGAQ) relationships with community health and disaster resilience agendas. The prospects for 'demonstration projects' are discussed in terms of incremental and iterative approaches and policy learning. Second, in terms of public participation and involvement, Governance Networks can, at times, be ineffective in producing tangible outcomes. Third, Policy Networks are discussed in

terms of the issues with transparency and accountability for their actions. Finally, meta-governance issues highlight the complicating role of power and politics. The implications of these four issues for communicative action are discussed.

Framing Network Governance

Network Governance is a broad school of thought that has been defined and applied in a variety of ways. As stated in Chapter 2, the word governance relates to the “exercise of authority” and control where all sectors (the State, the private sector and the community) participate, whereas government refers to the “form or system of rule” by the State. Governing involves the right to exercise influence and authority (Delbridge and Bernard, 1998: 484). Network Governance then, is about how those within the network of relationships exercise their authority and control. It is assumed that we are all located within networks of relationships (social, economic, and political) in both our personal and professional lives. Further, it is assumed that power is transmitted through this network of relations.

Network Governance can be defined as the social mechanisms such as information gathering, communication, decision-making and conflict resolution (Ziggers *et al*, 2010: 343) that influence the capacity for adaptations, coordination and exchanges within the network (Jones *et al*, 1997). According to social network theory, these exchange relationships become embedded in webs of social attachments, and as ties that promote trust and reciprocity between partners (Uzzi and Gillespie, 2002; Ziggers *et al*, 2010). Granovetter (1992) refer to these processes and relationships as structural embeddedness. For Madhok and Tallman (1998) it is the relational capital which facilitates cooperative behaviour between members of the network. Literature on marketing, administration and organisational management indicate that higher levels of relational capital engender trust, commitment and lack of conflict (Arino *et al*, 2001; Kauser and Shaw, 2004; Ziggers *et al*, 2010), thus producing effective functioning (Palay, 1985), confidence and a sense of reliability and integrity (Morgan and Hunt, 1994; Ziggers *et al*, 2010), as well as high quality information and incentives within the network (Larson, 1992; Uzzi, 1996; Ziggers *et al*, 2010). Therefore, governance at the network level contains social mechanisms which are structurally embedded within them (Ziggers *et al*, 2010: 346). Blanco *et al* (2011: 297) caution that such attempts to define Network Governance see a “continuing tendency to conflate and confuse difference concepts” underlying the notion of networks. They call for a clear differentiation between the concepts of Policy Network

and Governance Network which are often used interchangeably under the banner of Network Governance.

Issues in differentiating between Policy Networks and Governance Networks

Policy Networks and Governance Networks are two distinct conceptual frameworks that are often grouped together under the banner of Network Governance. This section highlights the differences between the two approaches with regards to their conceptual frameworks and their respective views on democratic processes. With clear differentiations in mind, Policy Networks and Governance Networks can be seen as “important elements of a broad theoretical repertoire upon which political scientists can draw in seeking to understand the ongoing fragmentation and recombination of modes of governance and policy making” (Blanco *et al*, 2011: 305). This involves differences in their historical contexts, network focus and policy alignment.

Historical contexts

Blanco *et al* (2011: 298) identify that Policy Networks arose from traditions in the 1960s in the UK and the USA such as “policy communities”, “iron triangles” and “issue networks”. It “reacts against the ideas of a monolithic State that controls the process of policy making alone”. They assert that Policy Networks require that “policy making takes place in policy domain-specific subsystems consisting of a variable number of actors” dealing with the relative visibility of policy issues, membership expectations and the traceability of policy outcomes (Blanco *et al*, 2011: 298, 300). As policy making can be viewed as “a process involving a diversity of actors who are mutually interdependent” (Adam and Kriesi, 2007: 146), Policy Networks are therefore a long-standing and standard feature of policy making as they are “really” made (Blanco *et al*, 2011: 298).

Alternatively, Blanco *et al*'s (2011: 300) survey of Governance Network literature points to a fundamental difference in historical interpretation from Policy Network literature. Governance Networks focus on past and present comparisons and shifts between the notions of government and governance and their paradigms relating to markets, hierarchies and networks. Governance Networks therefore represent “part of a historical sequence” which challenges the ethos and practices of hierarchical

governance, social democratic welfare states, market forms of neo-liberalism and the new public management paradigm (Blanco *et al*, 2011: 299).

Network focus

Blanco *et al* (2011: 300) identify that Policy Network literature is not concerned with past-present comparisons, focussing rather, on “cross-national and cross-sectoral variations”. With this in mind, Marsh and Rhodes (1992) outline the relevance of “issue networks” that are characterised by larger, more diverse and unequal groups, and “policy communities” that are characterised by smaller, more cohesive and stable groups. An example of issue networks is the Australian Government’s *Trusted Information Sharing Network* (TISN) that facilitates a national forum for “owners and operators of critical infrastructure to discuss critical infrastructure vulnerabilities with relevant government agencies” (CoA, 2010a: 11). In terms of policy communities, the TISN consists of *Infrastructure Assurance Advisory Groups* for a number of different business sectors (TISN, 2010: i). Sector groups include banking and finance, health, the food chain, transport, communications, water services and energy (CoA, 2010a: 17).

Surveys of the literature by Blanco *et al* (2011: 300), Kriesi *et al*, (2006), Marsh and Rhodes (1992) and Scharpf (1997), highlight that: “cross-national and cross-sectoral comparisons inform (and are informed by) a number of network typologies underpinned by different analytical dimensions such as their openness/closeness, the number of actors, the degree of diversity/symmetry among actors, the power structure of the degree of consensus/conflict” (Blanco *et al*, 2011: 300). These sector groups are overseen by the *Critical Infrastructure Advisory Council* that “provides advice to the federal Attorney-General on the national approach to critical infrastructure protection” (TISN, 2010: i). The Department of Agriculture, Fisheries and Forestry (DAFF) oversees the *Food Chain Sector Group* (FCSG³¹) that operates under the banner of the TISN (CoA, 2010a: 17). The industry membership forms the food chain sector concerns for the Australian Government’s *Critical Infrastructure*

³¹ The industry membership for the *Food Chain Sector Group* (FCSG) of the TISN includes: Aldi Supermarkets; Animal Health Alliance; Australian Chamber of Commerce and Industry; Australian Chicken Meat Federation; Australian Food and Grocery Council; Australian Food Safety Centre for Excellence; Australian Meat Council; Coco Cola Amatil Ltd; Coles Group; Croplife Australia; Dairy Australia; Food and Beverage Importers’ Association; Franklins Supermarkets; Foodbank; George Weston Foods; Grain Trade Australia; Horticulture Australia Ltd; Kimberley Clark; McDonalds; Meat and Livestock Australia; Metcash Trading Ltd; National Farmers’ Federation; National Foods; Nestle; Packaging Council of Australia; Produce Marketing Association; Refrigerated Warehouse and Transport Association; Simplot; and Woolworths (DAFF, 2011b: 1).

Resilience Strategy (CoA, 2010a: 17) and therefore represents a relative degree of symmetry and consensus within the issue network based on a relatively closed profile of policy communities. Here, the focus is on a functional or policy anchor whereby “traditional policy fields at the national level, like agricultural, industrial or economic policy... corresponds to the departmental boundaries of national governments” (Blanco *et al*, 2011: 301).

A particular strength of Policy Networks is that they seek to explain the differences between policy communities and the resulting consequences (Blanco *et al*, 2011: 300). Adam and Kriesi (2007: 137) argue that international policy innovations can “influence Policy Networks at the national level by... opening up new access points, and creating new venues that allow for reopening matter previously settled at the national level”. For example, in terms of the global policy framework for addressing social resilience in the face of natural and economic crises, the *International Strategy for Disaster Reduction* (ISDR) developed under the United Nations, produced the *Hyogo Framework for Action 2005-2015* (UN, 2005). The resolution of the ISDR was to call upon governments to establish national platforms (UN, 2009: 2). In response, the Council of Australian Governments (COAG) developed the *National Strategy for Disaster Resilience* (NSDR) as the guiding document for “building our nation’s resilience to disasters” (see Appendix 2) (COAG, 2011: ii, 1). The NSDR seeks to “develop and embed new ways of doing things that enhance existing arrangement across and within governments” (COAG, 2011: 2). It argues that it is “important to understand that the concept of disaster resilience builds upon rather than replaces existing strengths and arrangements” (COAG, 2011: 3). As such, the NSDR exists within a Policy Network framework, but also challenges this framework to extend beyond traditional policy communities so that the complexities may be addressed in a more strategic fashion.

In terms of addressing these complexities, Governance Network literature focuses on the analysis of innovation in modes of governance, which in turn, leads it to concentrate on emergent policy areas, such as the need for collaborative relationships including the third-sector³² (Althaus *et al*, 2007; Nyholm and Haveri, 2009; Perri 6 *et al*, 2002). For the NSDR we see the development of partnerships

³² Lyons (2001: 5) comprises the third sector as: Non-Government Organisations (NGOs); the social economy or civic society; non-profit, community-driven and voluntary sectors; and lobby and interest groups. According to Lyons (cited in Althaus *et al*, 2007: 18) such organisations are characteristically: “private; formally organised; derived from collective action and generating common values and benefits; voluntary in membership; not seeking personal profit; and usually democratically controlled”.

with those who can effect change (COAG, 2011: 9). This also includes the tackling of wicked issues or intractable problems (Althaus *et al*, 2007; Bevir, 2010; Christensen, 1999; Clarke and Stewart, 1997; Rhodes, 1997) and messy problems which require messy solutions (Rhodes, 1997: xv). For the NSDR we see the identification of disaster vulnerability due to the “increasing complexity and interdependencies of social, technical, and infrastructure systems” (COAG, 2011: 2).

Another relevant area is increasing social complexity, dynamism and diversity (Kooiman, 1993). Again, for the NSDR we see the importance of disaster vulnerability due to community fragmentation, population density and mobility and socio-economic status (COAG, 2011: 2). The call for more integrative approaches given the recognition of fragmented organisational frameworks (Rhodes, 1997; 2007) and the need for institutional renewal are cited as relevant (van Bortel *et al*, 2009). For the NSDR we see the statement that the “strategy is the first step in a long-term, evolving process to deliver sustained behavioural change and enduring partnerships” (COAG, 2011: ii) and the call for more “integrated and coordinated disaster resilience” (COAG, 2011: 3). The recognition of social demands for an increased voice in decision-making and disenchantment with representative governance is highlighted (Dalton, 2005). For the NSDR we see “effective community resilience will rely on good working relationships” within and between communities (UKCO cited in COAG, 2011: 15).

Finally, social inclusion, neighbourhood regeneration or environmental sustainability are prominent themes (Blanco *et al*, 2011). For example, the Australian Sustainable Schools Initiative (AuSSI) aims to embed education for sustainability as part of school curriculum with the assistance of broader networked relationships. These networks include clusters of sustainable schools to share information and resources and provide support to each other (Davis and Ferreira, 2009: 68). Davis and Ferreira (2009: 59, 67) assert that the current arrangements that utilise the “product approach” (limited distribution of a program within a school) would benefit from a widened range of options. They propose that a “continuum of cultural change strategies” include the “facilitated product approach” and the “network of facilitators approach” that increases the roles of power-sharing with ‘experts’ outside the school. They further propose that the “webbed network approach... shows the most potential” for achieving these goals as it “offers a change process built on participant engagement, capacity building and power-sharing” (see Appendix 12 for government and community initiatives in support of this). For the NSDR we see targeted policy

actions for developing community empowerment, adaptive capacity and community capability and confidence (COAG, 2011: 2).

Governance Networks highlight that “socio-economic transformations have paved the way for a ‘crisis’ in traditional bureaucratic government and the emergence of new ways of regulating social conflict” and networks are therefore seen as an “emerging policy paradigm” (Blanco *et al*, 2011: 298) which have occurred within post-modern, post-industrial and post-Fordist literature (Stocker, 2004: 9). Additionally, Governance Networks are influenced by literature such as “sociological communitarianism” in the USA (Etzioni, 1993); social democracy as renewal in the UK (Giddens, 1998); and neo-Keynesian views on global market economies (Blanco *et al*, 2011: 299). Governance Network literature therefore critiques the arrangement of networks within their spatial or territorial areas. Pirson and Turnbull (2011: 103) see these avenues as humanistic in that they “are intrinsically motivated to... serve humanity through what they do”.

Policy alignment and world-view

As indicative of the Policy Network approach, Althaus *et al* (2007: 91) outline that “the traditional policy process presumes a hierarchical government bureaucracy interacting with society to repetitively and uniformly carry out government objectives”. Vertical alignment therefore seeks to “connect goals, resources and structures so that policy intent matches program design and delivery” (Althaus *et al*, 2007: 138). Therefore, Policy Networks can be understood as a worldview whereby stable structures of social relations between players who are interdependent, are framed around policy problems and programmes (Nyseth, 2008). A worldview is a point-of-view held by an individual or collective that reinforces why things are going on and what is considered important. Althaus *et al* (2007: 139) advise government must “match resources with its selected framework to ensure that its objectives are met in an efficient and effective manner”. The drafting of Australia’s *National Food Plan* and the Prime Minister’s Science, Engineering and Innovation Council (PMSEIC) food security report reflect this form of policy alignment and worldview (see Appendix 4).

In terms of Governance Networks, Goldsmith and Eggers (cited in Althaus *et al*, 2007: 30) expand the concept of networking to include “third-party government”. Governance Networks therefore go beyond the government sector to include

business and the community. This can occur at one level or several levels such as local, state and/or national. Sorensen and Torfing (2008: 9) define Governance Networks as:

Relatively stable, horizontal articulations of interdependent but operationally autonomous actors, who interact through negotiations which take place within a regulative, normative, cognitive framework that is self-regulated within limits set by external agencies and which contributes to the production of public purpose.

Goldsmith and Eggers (cited in Althaus *et al*, 2007: 30) assert that third-party government requires “cooperation and competition in service delivery and achieving policy goals”. Horizontal alignment therefore refers to the “need for inter-organisational cooperation and collaboration” in order to combat factors which “stifle coordination” and hinder positive contributions to “innovations, quality and new ideas” (Althaus *et al*, 2007: 138). This worldview is congruent with the worldview of community-based food plans and Non-Government Organisation (NGO) food security position papers that articulate third-party pathways (see Appendix 5). In light of these differences between Policy Networks and Governance Networks, Althaus *et al* (2007: 30) argues that the broader concept of Network Governance extends both “horizontally across sectors as well as vertically within government”. It essentially covers the priorities and concerns of both worldviews.

Framing Network Governance as policy holism and integration

The NSDR is a case study in policy holism and integration. Under the broad band of Network Governance, the NSDR employs both approaches of Policy Networks and Governance Networks to provide opportunities and prospects for the better management of networks. The two approaches highlight workable common ground for achieving the same goals as they form part of a broader range of theories that call into question the monopoly of State bodies over policy-making processes. They also conceive policy making as an interactive process involving different kinds of actors often taking the form of Working Groups³³ and they stress notions of mutual dependence and the development of trust and reciprocity as the basis for the development and maintenance of networks (Blanco *et al*, 2011: 304). Furthermore, documented case studies as demonstrations in past successes of collaborative effort are seen as useful pathways through wicked problems.

³³ Working groups are consultative bodies that consist of various partners with an interest in the issue at hand. These groups can take various forms and influence the implementation of defined outcomes and the nature of democratic processes involved.

The capacity for authorities and communities to respond to food-related disasters will be subject to a culmination of effects and interconnections between climate change, vulnerabilities in the food supply chain, oil demand/supply and rapidly populating urban centres. McMichael (2007) concurs that the contribution of industrial agriculture to green-house gas emissions is an intractable problem and one of the most inconvenient truths not addressed in Al Gore's movie, *An Inconvenient Truth*. Althaus *et al* (2007: 54) assert that wicked problems are those which are "not open to easy formulation" because they are "characterised by embedded interdependences where a possible 'solution' can create yet another interlocking complex problem". The Australian Public Service Commission (APSC) which works with agencies to promote best practices, also reported on tackling wicked problems from a public policy perspective (APSC, 2007). This is particularly so since Rittel and Webber (1973) assert that wicked problems: 1) are difficult to formulate and define; 2) they have no stopping rule such as an end or boundary; 3) solutions differ widely as there are no agreed criteria to judge their correctness; 4) there is no traceability of all the unknown consequences of solutions; 5) the consequential traces of a solution cannot be easily undone if they turn out to be wrong; 6) there are no criteria to prove that all solutions to a wicked problem have been identified and considered; 7) every wicked problem is essentially unique which means that there is no suitable precedent to guide decision makers; 8) every wicked problem can be considered to be a symptom of another problem, therefore they are interconnected with other problems; 9) the existence of discrepancies representing a wicked problem can be explained in numerous ways, therefore there is no agreed explanation of the problem; and 10) those who work with interconnected systems are caught up in the ambiguity of their causal webs, therefore mistakes are very costly.

Althaus *et al* (2007: 138) argue that "the demand for consistency and coherence in government policy making has seen experimentation with whole-of-government initiatives". The National Institute of Governance (2004) concurs that such programs are "aimed at tackling problems of vertical and horizontal alignment" (cited in Althaus *et al*, 2007: 138) or as Habermas would coin as conflicting worldviews. "Joined-up government", can refer to both vertical and horizontal networking within the government sector. For example, the Australian Conservation Foundation (ACF) *Paddock to Plate: Policy propositions for sustainable food and farming systems* (2009) advocates for joint-up governance and leadership on sustainable food and farming. They advocate for a broad based food strategy task force comprising of industry and representatives across sectors of the food chain including consumer

and environmental groups. Suggestions are for integrated governance with clear environmental, social and economic measures and targets. This entails assessment of food system resilience and vulnerabilities and a green, healthy and fair food procurement policy (Campbell, 2009: 9-12) (see Appendix 5).

This suggests that an integrative approach can be made for harnessing the opportunities and prospects of both governance styles. Integrative approaches can adopt ideas from adaptive management (Berkes *et al*, 2003; Bodin and Norberg, 2005; Colding *et al*, 2003); multi-level learning processes (Ostrom, 2001, 2008; Pahl-Wostl, 2007, 2009; Young, 2007); interactions and feedbacks in multi-agent systems (Janssen and Carpenter, 1999; Janssen *et al*, 2000); and processes for “capturing persistence or robustness of institutions in the face of change” (Anderies *et al*, 2004; Folke, 2006: 262). The NSDR is an example of this experimentation in joined-up and integrative governance. According to Prosser and Peters (2010: 10) two important shifts have occurred in disaster resilience. The first shift is government thinking in how to manage the growing complexities of disasters. The second is the need for a whole-of-government approach which facilitates the movement of decisions outside the traditional scope of disaster risk management. They further argue that the “whole-of-government approach to disaster resilience... brings with it broader cross jurisdictional and cross departmental policy challenges” which includes developing policy approaches that “integrate, rather than compete, with existing policy priorities and emergency management arrangements”. This requires “complementing organisational responses” with “non-linear and holistic frameworks” which aim to grasp the interconnections and broader contexts. This also involves the facilitation of a bottom-up approach which supports local flexibility (Prosser and Peters, 2010: 10).

The NSDR is therefore a case study for the optimistic promise of Policy Integration (the synthesis of complexity and differences) and Policy Holism (whole-of-government approach), together with the support of local capacity to be resilient. This challenge of developing a “holistic approach” also contains within it, opportunities for generating “common understanding” of resilience pathways that are “robust enough to operate in different policy contexts” (Prosser and Peters, 2010: 10, 11). Building robustness involves integration of top-down approaches with bottom-up approaches (Murphy, 2007; Nelson *et al*, 2007). As discussed in Chapter 4 on resilience-building activities, “essential resiliency” or “degree of true resilience” (Morrow, 2008: 12) will integrate consideration of “sustainable local economics” which are “capable of supporting quality lifestyles... including meaningful jobs, adequate income,

substantial housing, good education, access to health care, and safe neighbourhoods” (Mileti *et al*, 1995: 117).

The role of long-term preparation is consistently highlighted for disaster resilience. In terms of the implications for the community level, the NSDR uses the term “holistic preparedness” which aims to consider the “diversity, needs, strengths and vulnerabilities within communities” (COAG, 2011: 13). The ISDR also aims to foster a “holistic approach” toward preparedness through strengthening the networks which facilitate the flow of information and support (UN, 2005: 12). To this end, the NSDR recommends multiple trusted sources stating that, the “availability and accessibility of transparent, accurate and trusted sources on information in various forms” will facilitate empowerment to act appropriately (COAG, 2011: 10, 11). These calls are congruent with the objectives of speech forums to produce mutual understanding and collaborative action (Habermas, 1987). Movements toward policy holism and integration will however, face issues in terms of performance or ability to exercise influence.

Issues in network performance

Network performance measures enable the analysis of where and how particular interests can exercise their influence. Network performance analyses have been scrutinised by network theory and theorists in terms of: locating authority in pluralist, public decision-making processes characterised by the fragmentation of political power (Blanco *et al*, 2011; Pierre, 2000; van Bortel *et al*, 2009); focussing on implementation rather than desired outcomes (Kapos *et al*, 2009); democratic anchorage of both Policy Networks and Governance Networks (Sorensen and Torfing, 2005; van Bortel *et al*, 2009); and meta-governance implications (Bogason and Musso, 2006; Jessop, 2003). Network performance based on working groups may be measured using a number of criteria. Crossfield and Byrne (1994: 4) advocate for a three-fold approach including: 1) efficiency, whereby inputs are used to maximise outputs; 2) effectiveness of outcomes to achieve stated objectives; and 3) appropriateness of those objectives to remain consistent with government priorities and these in turn continue to be consistent with community needs. This is comparable to Althaus *et al* (2007: 182) who outline four types of evaluation that are possible depending on the objective. Each evaluation type³⁴ is appropriate for a

³⁴ Althaus *et al* (2007: 179) assert that evaluation comprises both the end and a re-starting of the beginning of a policy cycle. The final step, they assert, serves three purposes: 1) it asks how well a

different step in a policy cycle: 1) appropriateness evaluation helps decision maker determine whether a new program is needed, or whether an existing program should be maintained. A key question in appropriateness evaluations is the delivery mechanism – should government, the private sector, or the third sector or community deliver the service?; 2) efficiency evaluation examines how well inputs are used to obtain a given output; 3) effectiveness evaluation asks whether the program is producing worthwhile results; and 4) meta-evaluations assess the evaluation process itself. However, for the purpose of this thesis a four-fold criteria will be used for measuring network performance of both Policy Networks and Governance Networks in term of: 1) inclusiveness; 2) public participation and involvement; 3) transparency, accountability; and 4) meta-governance.

Issues with inclusiveness of multiple trusted sources

A key feature of speech forums is to include a variety of voices, so that as people talk with each other, they come to appreciate the differences and commonalities that can inform political orientations (Habermas, 1992). Nyseth (2008: 500) defines inclusiveness as the *extent* to which relevant stakeholders and citizen groups are included in the network. Social inclusion is a particular challenge for Policy Networks. The NSDR (COAG, 2011: 7) state that:

*The increasing complexity surrounding disasters means that dealing with them extends beyond the reach of the emergency services. By taking a whole-of-government approach to widening the circle of responsibility, we are collaborating more closely across and within governments on all phases of disaster prevention, preparedness, response and recovery. All leaders can help build and strengthen existing partnerships among governments, businesses, the non-government sector **and communities** (Emphasis added).*

Food security is currently framed and managed through the formally established Policy Networks (as outlined in Appendix 4 on government/industry alliances). The community-based food plans and NGO food security position papers articulate the informal third-party pathways (see Appendix 5). Examples from community-based food plans include sub-elites such as highly educated and competent individuals who are given power to challenge dominant elites (Etzioni-Halevey, 1993) and broaden citizen involvement in agenda setting through city dialogues (Nyseth, 2008). However, institutional monopolies tend to perceive the incorporation of NGO elite actors as prone to exaggerate Policy Network failures (Cairney, 2009). They are

policy, once implemented, meets its objectives; 2) it holds officials accountable for the implementation of a policy; and 3) it provides important clues for future policy making.

seen as subversive to “evidence-based policy-making” (Marston and Watts, 2003: 144; Young *et al*, 2002) and antagonistic to decision-making (Blanco *et al*, 2011).

The following examples demonstrate networking with multiple trusted sources through vertical and horizontal integration. They can potentially formalise informal food security positions. Formal safety-nets for food procurement, as stated in Chapter 4 on resilience-building activities, included financial aid, labour policies and health interventions. Informal lines of food procurement were through friends and family, and localised community food and farming projects. Formalising these informal community network arrangements embodies the NSDR and ISDR recommendations for holistic preparedness and the use of multiple trusted sources of information. The NSDR advocates for shared responsibilities through the development of “partnerships and networks to build resilience at the government, business, neighbourhood, and community levels”. In line with this, the NSDR calls for government support of community-based resilience efforts (COAG, 2011: 7). Australian Landcare provides a precedent in whole-of-government approach to land-use.

The Landcare model: A demonstration in multiple trusted sources for the management of private land-use

One existing precedent of formalising informal networks is the Landcare model that is comprised of: 1) Community Landcare³⁵ (On-ground works and community development); 2) State and regional planning, management, leadership and funding³⁶; and 3) National Landcare support and structures³⁷. The ‘keystones’ of

³⁵ Community-based *Landcare* is comprised of: Individual participants in *Landcare* groups (landowners, farmers, schools and volunteers); *Landcare* groups (where these individuals come together into organised groups); and *Landcare* networks (comprised of interactions between groups) (LAL, 2011f). Landcare Australia states that, “*Landcare* is a national network of thousands of locally-based community groups who care for the natural resources of our country”. Nationally, there are “more than 4000 community *Landcare* groups, 2000 Coastcare groups and many thousands of volunteers across the country” (LAL, 2011a).

³⁶ Queensland state and regional arrangements include: 1) Regional Natural Resource Management (NRM) based on 56 catchments or bioregions covering all of Australia (LAL, 2011f; CoA, 2010c). Of that number, 14 regions are located in Queensland (CoA, 2010b); 2) Queensland Water and Land Carers (QWaLC) is Queensland’s peak body for natural resource management (NRM) volunteers. QWaLC’s roles include representation, advocacy, promotion, networking and insurance administration. QWaLC’s board includes representatives from each of Queensland’s regions. Membership consists of over 320 groups and 35,000 individuals. Landcare Queensland provides training, resources and funding for landcarers across the state (LAL, 2011e; QWaLC, 2011); 3) Landcare Queensland Limited develops partnerships in support of the Queensland Landcare community and aids support services to this network by providing information and responding to community requests (LAL, 2011e); and 4) Brisbane City Council Local Government Landcare Partnerships Award (LAL, 2011b).

Landcare are that it is: community owned and driven; bi-partisan in nature; and encourages integrated management of environmental assets with productive farmland and a more sustainable approach to private land management (LAL, 2011h). According to the Australian Department of Agriculture, Fisheries and Forestry (DAFF) (DAFF, 2011a):

The [Australian Landcare] council, with the Landcare community, including farmers and Indigenous land managers, will assist the government to reinvigorate Landcare, provide insight into future opportunities and ensure the Landcare movement and Australian community can meet the challenges of food security, responding to climate change, supporting volunteers and maintaining the environment.

As such, the Landcare model is a demonstration of the management of private land-use that is inclusive of both Policy Networks and Governance Networks. It is an example of what is possible by integrating both governance styles (see Appendix 15 for details).

Urban land-use planning: A demonstration in the lack of multiple trusted sources for the management of public land-use

Landcare is also a major provider of funding for community and school garden projects, so the possibility of replicating this model for community and school gardens are compelling. However, community and school garden spaces are not located primarily on private land, but are usually on public land. This generates tensions in coordinated planning, that include: low levels of urban food awareness in land-use planning (Howe, 2003: 258); addressing the bureaucratic mindset in order to gain government support and funding (Jamison, 1985: 473); city official's perceptions of gardens as temporary use of vacant land (Francis, 1987: 9); conflicts over land-use (Schmelzkoff, 1995: 364); gardener's uncertainty and feelings of anxiety due to insecurity of tenure (Elder, 2005: 773; Moskow, 1999: 133; Teig *et al*, 2009: 1119); lack land-use rights (Moskow, 1999: 133); council impositions of garden rents on not-for-profit arrangements (Harris, 2009: 25); and precariousness of land due to the "whim of city planners" (Patel, 1996: 45). Land-use rights on public land are heavily constrained.

³⁷ The national supporting organisations are: Landcare Australia Limited; Australian Landcare Council; National Landcare Network; and the National Landcare Facilitator. The Corporate partners also play a role as do other organisations such as: Clean Up Australia; Conservation Volunteers Australia; and Greening Australia among others. The sources of national funding include: *Caring for Our Country* and other federal and state funding such as the Department of Agriculture, Fisheries and Forestry (DAFF) and the Department of Sustainability, Environment, Water, Populations and Communities (DSEWPC).

As an alternative to Policy Networks that marginalise land-use rights of gardeners, Harris (2009: 25) suggests that planners could support urban agriculture by re-zoning land-uses which necessarily involves focus on policy development. Embracing sustainability and environmentally focussed planning in general is seen as valid, as are supporting activities through programs and grants. Howe (2003: 261) concurs on the importance of: funding urban food schemes; and, the “regulation and coordination of urban food production” through development plans.

In this way, Governance Networks, as outlined in community-based food plans, could be integrated with existing State and local government policies. The inclusion of partnerships with food sovereignty movements can therefore contribute to “sustainability in action” whereby a number of policy agendas can be met at once (Holland, 2004: 303).

Community health: A demonstration in multiple trusted sources for the management of long-term community-based healthy living

Healthy lifestyles are acknowledged as a key feature of community sustainability and resilience (Qld Health, 2011; State of Qld: 2010: 7). The *Healthy Communities Project*³⁸ aims for local governments to play a lead role in addressing local level issues through engaging and supporting local people, shaping local places, delivering local programs and implementing local plans and policies (LGAQ, 2011b: 1) (see Appendices 10 and 11). The Local Government Association of Queensland (LGAQ) develops and documents examples of healthy community living, which serve as compass points in learning and best practice. It addresses community-based health policy agendas according to the *Queensland Health Strategic Plan 2007-12* and the *Department of Communities 2010-14 Strategic Plan*. The LGAQ acknowledges that the *Food in the City* agenda for localising food through community gardening is a significant pathway toward community health (see Appendix 10). As such, this project focuses on the long-term community health implications of ‘sustainability in action’ through food localisation and forms a core feature of essential resiliency.

³⁸ The LGAQ *Healthy Communities Project* provides funding and support to local governments to instil healthy lifestyles within communities as a part of their daily business. The project works in partnership with the *Queensland Health Strategic Plan 2007-12* for “Making Queenslanders Healthier” (Qld Health, 2011). It also partners with the *Department of Communities 2010-14 Strategic Plan* which aims to provide integrated community services that strengthen sustainable communities (State of Qld: 2010: 7).

The LGAQ: A hypothetical demonstration in multiple trusted sources for integrating long-term sustainability with short-term emergency

In addition to the LGAQ's partnership with community health departments, the LGAQ has a Memorandum of Understanding (MoU) with the Queensland Department of Community Safety through the 2010 Disaster Management Alliance called the *Resilient Communities through Partnerships* (Disaster Management Alliance, 2010) (see Appendix 1). This MoU recognises that "well prepared communities" are better able to manage, recover from and "adapt to change" (Disaster Management Alliance, 2010: 5). Through collaboration, the MoU aims for (Disaster Management Alliance, 2010: 5):

- ***Resilient communities:*** *Communities working collectively to reduce the impacts of natural disasters;*
- ***Self-reliant communities:*** *Communities, businesses, families, and individuals who take action to prevent, prepare for, and to recover from natural disasters;*
- ***Engaged communities:*** *Communities who work with Local Government and State Government agencies to build resilience at a local level; and*
- ***Aware Communities:*** *Communities informed of their local natural hazard risks.*

Community and school gardens contribute to resilience-building activities. It is well documented that different forms of community gardening take shape depending on the various uses of, and visions for the gardens (Kurtz, 2001: 667; Schmelzkopf, 1995: 364). King (2008: 121) asserts that community gardens therefore create flexible social institutions. As examples of Governance Networks, Holland (2004: 303) argues that "enhanced value for money can be achieved where several objectives are achieved at once". Understanding these linkages allows for a clearer view of how the integration of these activities can lead to an enhanced recognition of "sustainability in action" (Holland, 2004: 303) and "essential resiliency" (Morrow, 2008: 12). In essence, garden initiatives address a variety of policy agendas across a variety of government departments. The LGAQ is therefore uniquely situated between the 'emergency focus' of the Department of Community Safety and the 'development focus' of the Department of Health and Department of Communities.

Extending the brief of the *Healthy Communities Project* to create a MoU with community-based plans and these departments is a potential course of action for the NSDR priority to improve food-related disaster resilience. For example local 'community emergency groups' use existing community networks and structures to aid in a coordinated response to emergencies. Likewise local 'community health groups' use existing community networks and structures to aid in a coordinated response to health development. Where community and school garden groups see

merit, both agendas can be fulfilled. In conjunction with urban land-use planning, this MoU could be used with the aim of documenting 'demonstration projects' in community food resilience. The use of demonstration projects is already an established approach in the LGAQ *Healthy Communities Project*. Demonstration projects receive funding so that during a specified timeline, challenges and successes of the project are documented and reviewed so that precedents in healthy living are set. In terms of the broader Healthy Communities Movement, of which the LGAQ *Healthy Communities Project* is part, Norris and Pittman (2000: 118) argue that to "sustain community initiatives, practitioners must move from projects that address *symptoms* of social problems to changing the underlying community cultures, incentives, and settings that give rise to these symptoms". This is congruent with objectives of community-based food initiatives (see Appendices 5 and 6). Currently, food-related emergency and development arrangements solely sit with the government/industry Policy Network alliances. Maxwell *et al* (2010: 91) argue that traditional "'emergency' responses deal with immediate needs while 'development' means addressing underlying causes with a longer-term lens". They argue that this requires the "long-standing bifurcation in analysis and programming between 'emergency' and 'development' categories need to be addressed.

Formalising informal Governance Networks as part of the Policy Network structure is tricky³⁹. Geis and Kutzmark (2000: 4) caution that this "calls into question a number of entrenched political and cultural attitudes about land, people, and ways of doing things that are in conflict with what actually needs to be done to achieve a quality-of-life and disaster-resistant society". Lindblom (1979: 520) argues that resistance to radical change could be avoided via a strategy of incremental small steps which would allow decisions to be made more quickly, that do not "rock the boat" and "stir up the great antagonisms and paralysing schism as do proposals for more drastic change". The LGAQ suggestion above would be an example of incremental change within short-term emergency and long-term community health Policy Networks.

³⁹ Conversely, Policy Networks are considered as informal arrangements with Governance Networks as formal. In terms of the Policy Network model, Blanco *et al* (2011: 302) assert that they are "usually identified through researching contacts reported by actors themselves, since they are not usually associated with any formal institutional arrangement". The patterns of interaction between player therefore in seen as informal. Alternatively, Governance Networks adopt a more formal institutional shape than Policy Networks. "Governance networks are understood as a phenomenon that can be managed, rather than as a structural underpinning for policy making". Therefore, the need for "network management" is identified as a strategy for addressing the emergent complexity of interdependencies (Blanco *et al*, 2011: 302). Kickert *et al* (1997: 10) define network management as "coordinating strategies of actors with different goals and preferences with regard to a certain problem or policy measure within an existing network of inter-organisational relations". Because of these dynamics, the notion of meta-governance has received increased attention (Jessop, 2002; Kooiman, 2003; Sorensen and Torfing, 2009).

However, criticisms of this approach include the failure to produce desired outcomes due to minor tweaking of existing policies (Handmer and Dovers, 2007) and that the focus on small changes “relies on constant improvement and review to identify and address problems with the policy and emerging issues” (Howes *et al*, 2013: 14). Lindblom (1979: 520) also points out that many people can also feel “trapped in an incremental politics that leaves its government incapable of coping effectively with big problems like environmental decay, energy shortage, inflations, and unemployment”.

Hybrid approaches which use iterative or sequential policy steps (Dror, 1964) aim to “adopt an institutional learning cycle that draws on the on-the-ground knowledge of key stakeholders to drive policy changes” (Howes *et al*, 2013: 14). The aim of demonstration projects are congruent with the NSDR proposition that “knowledge, innovation and education can enhance a culture of resilience at all levels of the community and should contribute to a continual cycle of learning” (COAG, 2011: 9). Sutton (1999: 11) calls this “policy as social experiment” whereby social change is a “process of trial and error, which involves successive hypotheses being tested against reality in an experimental manner”. In light of climate changes, the iterative or sequential approach is favourable (Parson and Karwat, 2011: 744) as it “allows decisions to be made and revised repeatedly over time in response to new knowledge, accumulated experience, or changed conditions” (Howes *et al*, 2013: 14). Public participation and involvement plays a key part in the ‘continual cycle of learning’ approach.

Governance Networks and issues with public participation and involvement

Policy practice benefits from integrating the learning generated from the processes of public deliberation, which are in turn, key features of communicative action (Hoch, 1996). Nyseth (2008: 500) defines public involvement and participation as the *extent* to which citizen involvement methods are applied within the network. Examples used in the Policy Network literature generally include formal procedures for making suggestions and complaints (Ploger, 2001) and formal channels of deliberations such as public hearings, discussions and debate, meetings and the use of newspaper articles (Nyseth, 2008). In this way Neighbourhood Plans aim to incorporate public participation in the planning of their neighbourhood. Additionally, in the drafting of the *National Food Plan*, the *National Food Policy Working Group* recognised that there exists a lack of a nationally-coordinated approach to food (DAFF media release,

2010). Therefore public participation and involvement in the drafting of the plan was invited for the initial 'Issues Paper' and the 'Green Paper'. However, as Rhodes (2007: 1251) outlines, these processes have resulted in the following:

Policy network analysis stresses how networks limit participation in the policy process; decide which issues will be included and excluded from the policy agenda; shape the behaviour of actors through the rules of the game; privilege certain interests; and substitute private government for public accountability. It is about stability, privilege and continuity.

The *extent* of public participation and involvement is of issue here as it has implications for democracy. Network performance, according to network theory, includes consideration of the informal governance arrangements that may require formal settings (Peters, 2007). This includes: the avenues for deliberative democracy (widening the scope for discursive contestation in society) (Bogason and Musso, 2006; Dryzek, 2000; Hajer and Wagenaar, 2003); calls for diversity and flexibility in governance (Nyseth and Ringholm, 2007); citizen involvement (Agger and Lofgren, 2007; Bellows and Hamm, 2003); and forming partnerships, collaborative efforts and participation (Elander, 2002; Healey, 1997; Innes and Booher, 2003, 2004; Pateman, 1970). Restructuring urban politics and regimes are also seen as relevant (Goodwin and Painter, 1997; Jessop, 1997) as such contesting urban landscapes (Nyseth, 2008) and the planning implications of this contest (Albrechts and Mandelbaum, 2005; Elander, 2002; Healey, 1997; Innes and Booher, 2004; Sager and Ravlum, 2005).

Governance Networks are also concerned with the "rehabilitation of networks within policy-making discourse and practice" (Blanco *et al*, 2011: 303). Lowndes and Pratchett (2008: 681) argue that networks are no longer seen as a "shadow arrangement" within bureaucracy, but are rather "celebrated as innovative, inclusive and efficient institutional arrangements". Community-based food plans have opened up models for participatory governance and direct democracy inclusive of wider partnerships, interest groups and citizens. Likewise, in Chapter 4 on resilience-building activities, it was found that facilitation of discussion around the meaning of resilience for any given situation is important. Public participation, distributed and participatory approaches are beneficial when tailoring engagement to include hazard awareness (Beck, 2011; Cavaye, 2004).

On the up-side, Governance Networks are good at the *extent* to which consultation is extended outside Policy Network frameworks. Lowndes and Pratchett (2008: 680) claim that Policy Networks that are "expressed through relatively closed social

networks and shared identities” demonstrate the benefits of close bonds. Rhodes (2007: 1246) calls this the “glue which holds the complex set of relationships together”. Alternatively, Blanco *et al*, (2011: 302) assert that Governance Networks focus on networks as “innovative, inclusive and efficient institutional arrangements” which links the notion of networks with social capital theory a step further. Lowndes and Pratchett (2008: 683) claim that advocating for partnerships within the network highlights and emphasises the role of social capital within the policy domain. Blanco *et al* (2011: 302) argue that “bringing together actors from different sectors with a view to pooling diverse resources and perspectives, the emphasis is on the role of bridging social capital as a resource for innovation and flexibility”. Therefore, Governance Networks are good at supporting local flexibility and building social capital. Social capital in turn, builds social resilience (Breton, 2001; Maguire and Hagan, 2007). In this way, Governance Networks can be a tool for building social resilience.

Blanco *et al* (2011: 302) argue that Governance Networks also “create social capital as new channels of cooperation over shared objectives develop”. Networks do not necessarily have to operate in service of private capital. Alternatively, Innes and Booher (2004) argue that “collaborative planning” advocates for a more inclusive network model that invites participation from various stakeholders such as business organisations, interest groups, administrative staff and citizens. Sorensen and Torfing (2008) conceptualise this as “democratic network governance”. Similarly are the use of terms such as interactive or participatory policy processes, deliberative governance and network participation (Innes and Booher, 2003; Healey, 1997; Nyseth, 2008). Nyseth (2008: 498) cautions that:

The democratic consequences of network governance might therefore depend on the type of network that is given access to the planning process, its performance in regard to democratic rules and norms, and the way in which it is linked to the institutions of representative democracy.

This point is closely related to efficiencies and effectiveness of network styles. Policy makers of both Policy Network and Governance Network models have supported networks in response to complex problems and as a method for soliciting “resources and expertise from beyond government” (Blanco *et al*, 2011: 297). Although Governance Networks are good at consultation and generating a range of ideas, on the down-side, they have a poor history in implementation and the achievement of policy goals. This involves the failure of Governance Networks to address messy problems with messy solutions. The outcomes can result in inadequate

implementation of intended policy objectives although well intentioned (Jessop, 2003; Stoker, 1998). Blanco *et al* (2011: 306) argue that:

The more sceptical account associated with Policy Networks provides a valuable counterbalance to the 'optimistic' character of the Governance Network literature, which tends to underestimate the continued hold of (albeit multi-sector) elites on policy making, and overstate the extent to which networks represent a new 'stage' in the evolution of governance.

With this in mind, Governance Networks may be seen to provide a “misleading optimistic picture of the way power is organised in those societies described as pluralist” (Hill, 2009: 28). The troubled history of the *National Conservation Strategy for Australia 1984-85* (NCSA) illustrates the failure of Governance Network to effectively and efficiently implement objectives (see Appendix 16). The NCSA approach was essentially repeated in the *Ecologically Sustainable Development (ESD) Working Groups of 1991* and the *2020 Summit* processes of 2008 with the same result (Howes, 2005).

Policy Networks and issues with transparency and accountability

Transparency and accountability for decisions made and actions taken, is a particular issue for Policy Networks. Transparency and accountability are closely linked (Tanner *et al*, 2009). Transparency may be defined as the *extent* to which the outcomes from the network deliberations are accessible to the wider public. Accountability may be defined as the *extent* to which the network may be held accountable for their actions (Nyseth, 2008: 500). As Nyseth (2008: 499) argues: “Networks are often closed, elitist or narrow in their functional scope, accessible only to a small group of people. In addition, closed networks produce legitimacy problems because of their lack of transparency”. As discussed in the first theme, Policy Networks due to their historical context, network focus and policy alignment, tend to reinforce policy communities which focus on “issue networks” (Marsh and Rhodes, 1992) which emphasise “cross-national and cross-sectoral” concerns (Blanco *et al*, 2011: 300).

Policy Networks and issues with meta-governance

Nyseth (2008: 500) defines meta-governance as the *extent* to which the network conditions and performance is controlled by elected politicians. This implies a rating or degrees of difference in level of control. The practice of communicative action, as with applied critical social research will be concerned with the use of power (Parkin,

1996) and its prospects for democratic politics (Forester, 1985). Sorensen and Torfing (2005: 201) outline the fundamentals for assessing the extent of democratic anchorage of networks. They advise that networks be controlled by democratically elected politicians. Networks should represent the members of relevant groups and organisations and be accountable to the territorially defined citizenry. As such, they follow democratic rules.

From the Policy Network perspective, Nyseth (2008: 499) argues, “it is difficult to hold those who participate in networks accountable for their actions towards the citizenry, as network members are not selected through regular elections”. As Marsh and Rhodes (1992) outline, Policy Networks are centred on the development of a “policy community” bringing cohesive and stable groups around issues such as the need for the ongoing functionality of the critical infrastructure for our food supply chain. As identified, the critical infrastructure of the food supply chain is largely privately owned. Nyseth’s (2008: 500) definition of meta-governance as the *extent* to which the network conditions and performance is controlled by elected politicians, sees in this case, an “issue network” developed with private capital which is democratically anchored within the confines of representative government (Sorensen and Torfing, 2005: 201). In this way, meta-governance, transparency and accountability are closely linked.

Le Gales (2002) argues that entrepreneurial forms of governance are driven by competitiveness within the global network of business and corporate interests for accumulating private capital. According to Nyseth (2008: 497, 503) “entrepreneurial governance networks” with private capital behind them, have lead elected governments into “elitist policy networks” with these private actors in order to enhance private interests of growth and development under the guise of national growth and development. The two have become inseparable. However, the United Nation’s Food and Agriculture Organisation (FAO) (FAO, 1998, 2008) clearly state that, “food should not be used as an instrument for political and economic pressure”. Furthermore, the NSDR states that (COAG, 2011: 7):

*Many Australians already have obligations as leaders to protect their own businesses and/or communities. We envisage such leaders taking a broader view of their responsibilities and **thinking beyond the immediate threats to their own interests**, to consider how they can contribute to a more disaster resilient nation (Emphasis added).*

Hay (1998) (cited in Blanco *et al*, 2011; 303) equates such networks to “tangled webs” that are seen as “restrictive, closed, elitist, oriented towards private interests,

prone to corruption, illicit, non-accountable and essentially undemocratic". Marsh and Rhodes (1992) claim that these characteristics highlight the reasons why innovation and policy changes can be problematic.

Conversely, elected politicians are particularly important potential anchors for democracy, since they can link broader networks with representative democracy. This can demonstrate a more flexible degree or *extent* to which the network conditions and performance are controlled by elected politicians (Nyseth, 2008: 499, 500). Nyseth (2008: 500) cautions that legitimacy of this claim will hinge on the extent to which they are "capable of controlling the formation, functions and development of governance networks". This can be tricky as Policy Networks that largely subscribe to liberal democratic thought tends to view Governance Networks as a "danger to democracy" (Sorensen and Torfing, 2008: 235). This tension between dominant collective values and the agency of the individual is present here. Sorensen and Torfing's (2009: 245) view meta-governance as a "reflexive and response process" by which various actors form the "specific rules, procedures and standards" of "what constitutes 'Good Governance'". Reflexivity⁴⁰ has emerged as both a challenge and solution to issues of network management in terms of the ability or agency of individuals to exercise influence within broader social structures. Giddens (1976) asserts that "social structures are both constituted by human agency, and yet at the same time are the very medium of this constitution".

In summary, this has important implications for the core NSDR priority action for pursuing shared responsibility addressed in Chapter 5 on the contributions of community and school gardens for building resilience whereby (COAG, 2011: 7):

Leaders drive development of partnerships and networks to build resilience at the government, business, neighbourhood, and community levels. These partnerships are based on a sense of shared responsibility, and an acknowledgement of the need for coordinated planning and response.

Shared responsibility for building social resilience does not mean equal responsibility. Fahlquist (2009: 119, 121) argues that institutional agents have more capacity, ability and power to create opportunities for individuals to do what is right and needed for their circumstances and hence have a greater share in the responsibility. As stated (Fahlquist, 2009: 111):

⁴⁰ Reflexivity can be broadly described as the practitioner's "engagement of continuous examination and explanation" of how they have influenced a project (Given, 2008: 747).

Individuals who have reasonable alternatives, capacity and resources to do something ... should be seen as responsible. Institutional agents have the power and resources to affect the number of individuals who possess such capacity and resources. Because of this, a great share of responsibility should be assigned to governments.

The implications for coordinated planning and response is therefore to shift ideas about moral responsibility from the traditional “backward-looking” and retrospective context such as assigning blameworthiness or culpability to a “forward-looking” perspective of responsibility which is prospective and remedial (Fahlquist, 2009: 109, 113). This permits more focus on capacity and resources of all parties (Fahlquist, 2009: 109, 113). Capacity building and the creative utilisation of resources are key actions identified in disaster resilience literature. The forward looking approach also facilitates the NSDR priority action for leading change and coordinating effort on understanding risks which was applied to Chapter 3 on food security. The NSDR advocates that (COAG, 2011: 7):

*Leaders from all levels of government, business, the not-for-profit sector and communities strive to recognise and understand the risks disasters pose to their own and their **community's interests**. They take responsibility for mitigating these risks and apply the concept of disaster resilience to strategic planning processes, and to **those roles where they can exercise influence** (Emphasis added).*

The capacity to exercise influence at the community level requires a prospective attitude. This is equally applied to the NSDR priority action for leading change and coordinating effort for community-based resilience efforts as was applied to Chapter 4 on social resilience. Here, the NSDR advocates that (COAG, 2011: 7):

*Governments help business, not-for-profit and community leaders by preparing and providing guidelines, information and other resources to support community efforts in **resilience-based planning**, including resilience-building activities, disaster risk management, stakeholder and community engagement, disaster response and recovery and capability development (Emphasis added).*

Conclusion

Management of the growing complexities of disasters needs to grasp interconnections and broader contexts. Network Governance was discussed as an avenue for the management of emergent issues in complexity and uncertainty such as the need for: social inclusion and sustainability; collaborative relationships including the community; tackling of wicked issues or intractable problems; increasing social complexity, dynamism and diversity; and more integrative approaches given the recognition of fragmented organisational frameworks. Accordingly, this chapter addressed the question: *What governance opportunities*

and challenges are posed for the democratic management of networks and relationships?

The NSDR call for a for more “integrated and coordinated disaster resilience” (COAG, 2011: 3) or whole-of-government approach to disaster resilience was found to require the facilitation of: 1) policy integration (the synthesis of complexity and differences); 2) policy holism (whole-of-government approach) that allows for movement of decisions outside the traditional scope of disaster risk management; and 3) bottom-up approaches which support local flexibility and innovation. These approaches are important for addressing the NSDR call for community empowerment for adaptive capacity, capability and confidence in the face of disasters (COAG, 2011: 2), and partnerships with those who can effect such changes (COAG, 2011: 9). Congruent with the speech forum approach, the NSDR advises that effective community resilience relies on good working relationships within and between communities (UKCO cited in COAG, 2011: 15). This entails a long-term, evolving process to deliver sustained behavioural change and enduring partnerships (COAG, 2011: ii);

Policy Network and Governance Network approaches have demonstrated both the challenges and opportunities at hand in terms of facilitating network management and democratic processes. They have highlighted the need for governance structures to consider network performance measures. The extent of inclusion within a network was considered in terms of the capacity to broaden multiple trusted sources. The nature of public participation and involvement presents some challenges for Governance Networks in producing effective outcomes. Transparency, accountability and meta-governance were found to be particular challenges for Policy Networks.

The main research question of this thesis is: *Using the three NSDR criteria for leading change and coordinating effort can opportunities for the democratic management of the networks necessary for community and school gardens to function as hubs for building social resilience and food security be facilitated? A survey and analysis of the literature on Network Governance reveals that necessary structures and policies already exist to facilitate the connections and opportunities for multiple trusted sources in food localisation. The broader challenge involves what governments, business and communities can do to affect the collective attitudes in which they are embedded as individual agents of social change. This thesis argues*

that speech forums should form a key policy decision in the management of complex, uncertain and interconnected issues such as food security. The following four chapters on the integrated results and analysis of interviews with people working within these groups can reveal how practitioners within their collectives are negotiating this challenge. This is important as their patterns of belief reveal their life-world, the perceptions about the legitimacy of actions which underpin the life-world and, in turn, determine their political orientations.

Chapter 7: A life-world of complex and integrated risk perceptions: How food security is framed by practitioners

Introduction

The life-world represents the interdependence between 'life' and the 'world'. Because they are mutually dependent upon one another, the life-world is personal and is also a shared, inter-subjective experience (Habermas, 1987). The interviewee's varying perceptions of risk reveal underlying cultural values and dynamics within and between groups. They all frame food security and its risks as a set of complex and integrated dynamics. This chapter provides an integrated set of results and analysis of the stakeholder interviews conducted during this project. The pervasive value reported by all interviewees is that *food access-ability* is a key feature of food security. As stated in Chapter 3, accessibility has to do with the *ability* to access food (Ericksen *et al*, 2009: 374; Koc *et al*, 1999: 1; Walker *et al*, 2010: 876). It was found that the word *access* referred to the way, the means or the opportunity (Delbridge and Bernard, 1998: 66) to procure food. It was also found that access was further deepened in this meaning by the abilities associated with the means of approach such as "the power or capacity to do or act" and "competence in terms of the possession of capacity, skill and means" (Delbridge and Bernard, 1998: 2). All interviewees expressed risk perceptions about the *ability* of people to *access* food. The issues of food dependency and how it is controlled lie at the heart of power relationships and how they are negotiated. As will be discussed, these are further compounded by complex impacts.

The research question addressed in this chapter is: *What is food security and how can we understand the risks to achieving it?* The main aim is to apply the *National Strategy for Disaster Resilience* (NSDR) criteria for leading change and coordinating effort to the reviewed and analysed literature and interview data to reveal how food security and its risks are understood. This aim and research question primarily applies to the first NSDR priority action for leading change and coordinating effort on understanding risks. Here, the NSDR advocates that (COAG, 2011: 7):

*Leaders from all levels of government, business, the not-for-profit sector and communities **strive to recognise and understand the risks disasters pose to their own and their community's interests.** They take responsibility for mitigating these risks and apply the concept of disaster resilience to strategic planning processes, and to those roles where they can exercise influence* (Emphasis added).

A list of interviewees is provided in Table 1 below. Across all interviewees, the model of corporate food control was argued to pose risks to a variety of core values concerning food access-ability, that is, the ability to access food.

Table 1: Sample selections

<p>Local Government Agencies</p> <p>Local Government agencies provide examples of joint government-community initiatives in: building communities; urban village planning; healthy lifestyle promotion; community education and empowerment on sustainability issues; and the establishment of community gardens as an organised activity. Generic job titles of the interviewees include: Local Government Officer 1 Local Government Officer 2 Local Government Officer 3 Local Government Officer 4</p>
<p>Community Groups</p> <p>Community groups provide examples of community-based resilience projects as they relate to: local food initiatives; food sovereignty; social enterprise; assistance for at-risk youth; shared responsibility; building communities; education and training with regards to food literacy, school and community gardening skills; and grass-roots democratic engagement. Generic job titles of the interviewees include: Community Educator and Advocate 1 Community Educator and Advocate 2 Community Educator and Advocate 3 Community Educator and Advocate 4 Youth Worker and Educator 1 Youth Worker and Educator 2 Youth Worker and Educator 3</p>
<p>Schools and Education Bodies</p> <p>Schools, education and consultative bodies provide examples of sustainability initiatives in schools for building children’s competency and experiential development in: food literacy; eco-citizenry; school gardening; outdoor learning spaces; sustainability; shared responsibility; and democratic participation. Generic job titles of the interviewees include: School Educator 1 School Educator 2 School Educator 3</p>
<p>Disaster Resilience Organisations</p> <p>Disaster resilience organisations provide examples of developing social resilience as a form of disaster resilience through formalised projects and programs. These programs are targeted to empower communities to share in taking responsibility for their own resilience through: volunteering; leadership; youth advocacy; climate change adaptation; community engagement; bouncing back better through hardship; shared responsibility; building community self-reliance; and community-based initiatives. Generic job titles of the interviewees include: Disaster Resilience Officer 1 Disaster Resilience Officer 2 Disaster Resilience Officer 3</p>

In line with the research question and aim, the interview questions put to each of the interviewees included: 1) *What do you understand by the term food security?*; and 2)

What do you think could be risks to food security? These questions invited open discussion and their responses revealed six themes of importance in terms of how they perceived the risks to food security: 1) urban population growth pressures and dependency on cheap oil and long-distance transport; 2) uncertainties and complexities of climate changes; 3) critical infrastructure interruptions due to severe weather events; 4) human and environmental health impacts from industrialised food systems; 5) centralised control of food; and 6) lack of knowledge and control at the community level.

Food access-ability is compromised by our growing population's dependency on long-distance transport and cheap oil

Industrialised food systems are highly reliant on globally interconnected transport systems (UKCO, 2010: 6); an uninterrupted supply of cheap oil (Cribb, 2010; Garnaut, 2008c); and our growing urban population's dependency on both these factors (IFRC, 2010). Food regime analysis identified that the complex mix of processes and actors involved further complicate this food regime's capacity to "predict the results of their actions, or those of other actors" (McMichael and Friedmann, 2007: 294). Consistent with these arguments, all interviewees expressed concern for these points with a particular note of pessimism.

First, interviewees highlighted concern for food regimes which are dependent on long-distance travel via road and rail. Consistent with arguments in the literature, all interviewees expressed concern about corporate control of food and its dependency on long-distance transport (Millstone and Lang, 2003: 67; UKCO, 2010: 6) and supermarkets as the main providers of food (Delforce *et al*, 2005: 379; Dixon, 2007: 30). For example, Community Educator and Advocate 2 stated that, "A very large portion of the food we currently eat comes from a long way away". Local Government Officer 2 said that, "we're very dependent on imports". School Educator 3 agreed that "the cost of food miles associated with that importation of food" is not captured in food pricing. For School Educator 1, the challenges for Australia's food production and distribution were around "the tyranny of distance". As Community Educator and Advocate 3 argued, "if the means of transportations, the means of refrigeration fail, then we're stuck".

Second, these concerns were magnified for interviewees given the pressures of urban population growth for supply to be uninterrupted no matter what the

circumstances are. Their views are resonant with the NSDR (COAG, 2011: 2) argument that: “many known factors are increasing our vulnerability to disaster. Work-life patterns, lifestyle expectations... are increasing community susceptibility”. All interviewees revealed a concern with the rise in urban population and their dependency on the corporate food supply model. Local Government Officer 3 stated that *“people are so busy, now, more than ever before. The lifestyle of people has changed from years ago... We didn't have all these big food chains... everyone is so busy, everyone has to work. So everyone is more reliant on the food chains”*.

Disaster Resilience Officer 2 added that the supermarket shopping mall experience provides ease, relaxation and convenience to offset this busy lifestyle. She pointed out that, *“We have the massive shopping malls. We can see them scaling up and growing, because people like them and kids spend time in them and it's convenient and there's parking and all of that”*. This scaling up and growing is consistent with Brisbane's management of urban population growth, called “City Shapes” (BCC, 2009b). Local Government Officer 1 stated that *“we're going to be intensifying in growth corridors around the public transport network. So when we were working with state government on [the] regional plan, we very clearly said, we're not continuing to grow out. We're going to grow up”*. The NSDR (COAG, 2011: 2) have argued that the “pressures for urban development to extend into areas of higher risk from natural disasters compounds the problem... [of] increasing our vulnerability to disaster”. Likewise, for Local Government Officers 1 and 2 the need for space for productive land was an issue. Local Government Officer 2 agreed that, *“In Brisbane I see the challenges being around space and that's also linked to population growth. We have less space and more people”*. Again, Local Government Officer 1 outlined that, *“the irony for Brisbane is that our good quality agricultural land is largely the alluvial stuff that's been on the flood plains and that's the bit we've been growing the city on”*.

Finally, the majority of interviewees agreed that the continued rise in urban population growth is intrinsically linked with access to cheap oil which results in community dependency with multiple or unknown consequences. Interviewees were aware of the complex and integrated dynamics that can intersect and impact on food security. This pervasive view supports Althaus *et al* (2007: 54) identification that wicked problems are those which are “not open to easy formulation” because they are “characterised by embedded interdependences where a possible ‘solution’ can create yet another interlocking complex problem”. For example, School Educator 1 concurred that, *“Spiralling on-costs with regards to fuel [is] going to be a major*

concern over time". For Community Educator and Advocate 1, this is of particular concern:

Risk is an interesting word because risk is about probability... On the ecological curve the planet is overpopulated and as soon as the decline in oil supplies starts to bite there's going to be a population crisis... because the food is not being well distributed now and the means of distribution is transport, which is basically oil, oil based... That's not a risk, it's an inevitability.

Food access-ability is compromised by climate change impacts which are wicked and uncertain

Climate changes are understood to pose risks to agricultural productivity (CoA, 2011: 5; IPCC, 2012; UN, 2005: 11) and our built infrastructure and economic returns (CoA, 2011: 4; COAG, 2011: 2; Cribb, 2010: 137). Interviewees agreed that climate change impacts play a major role in food security risks along the food supply chain continuum. While Disaster Resilience Officer 1 stated that she did not know enough about climate change to comment, there was a consensus amongst the other interviewees that climate changes negatively impact on food access-ability a considerable degree. In terms of food security, Disaster Resilience Officer 2 stated that *"the lens I'm currently seeing that through now is one of climate risk"*. Local Government Officer 2 revealed that in her line of work, she sees risk in terms of *"the sorts of social problems that might arise from climate change"*. For all interviewees, the connection between severe weather events and risks to food production were widely agreed upon. This was accompanied by a sense of apprehension given uncertainties and unknowns over complex interactions, and the resulting lack of political action. As Payne (2001: 81) asserts, the "increasingly uncertain, fluid and often de-stabilised" effects of such impacts can be accompanied by existential anxieties and political worries.

Concerns about the future given the unknown potentials of, and/or the complex synergies due to, climate changes were widely reported, supporting the argument in the literature that this is a wicked issue (APSC, 2007; Garnaut, 2008b; Howes *et al*, 2013; Rittel and Webber, 1973). For example, School Educator 2 observed that food security *"can be affected by a range of things. It can be affected by the climate... events beyond our control"*. For Youth Worker and Educator 1, there exists a *"domino effect [which] moves from drought [and] pushes the prices up higher... It's not only*

just with food, electricity, everything's affected". Likewise, Disaster Resilience Officer 3 reported that *"there's a lot of relationships... from an economic point of view, if there's a depression...even though there's food available, it might not be able to get to you in a way that you can afford it. So, economically there's a lot of risks"*. For Community Educator and Advocate 1, the synergies and implications are far reaching and support the NSDR view that *"the size, severity, timing, location and impacts of disasters are difficult to predict, and our changing climate increases the uncertainty about future risks"* (COAG, 2011: 2). Community Educator and Advocate 1 argued that:

There are at least four major streams to the future in terms of risks. One is the overpopulation... there's climate change... there's oil... [there's] poison[ing] of the environment... we just don't know what the consequences of our actions are, climatically and a whole stack of other areas as well. There's such complexity in climate. Such complexity there trying to predict the interactions is just impossible, there's too many variables. There's far too many variables. When you get all those major risks... coming together with all of their in-depth complexities, whoa who knows what the future's going to bring.

Food access-ability is compromised by critical infrastructure interruptions

The NSDR (COAG, 2011: 2) pointed out that of the many known factors increasing our vulnerability to disaster are, *"the increasing complexity and interdependencies of social, technical, and infrastructure systems... [including] the expectation that the same services and facilities will be available wherever we choose to live"*. Australia's *Critical Infrastructure Resilience Strategy* acknowledges that if supply chain networks were *"destroyed, degraded or rendered unavailable for an extended period"* it would *"significantly impact on the social or economic wellbeing of the nation"* (CoA, 2010a: 8). In line with this assessment, interviewees expressed concern for urban and community isolation due to transport infrastructure vulnerabilities. For Disaster Resilience Officer 2, this point is a central risk to food supply:

Our current food supply is economically structured around what our infrastructure is structured around to deliver [food]... then [there's] what the climatic background trends are looking like... What we know is that communities can be cut off completely from the outside for periods which are quite extended - certainly beyond a week.

Many interviewees expressed concern about the challenges of re-establishing even rudimentary supply chains. Damage to roads and the inability for freight trucks to move was of particular concern. Disaster Resilience Officer 3 reported that: *“There used to be 400 trucks a week, for example, going from Cairns to Brisbane transporting food. After Yasi, there were 40. They weren’t getting supplies of fresh seasonal vegetables”*. For Community Educator and Advocate 4, the risks involved the fact that, during the Queensland floods:

We had major issues on our highways being cut off at several points. It was really difficult for trucks not just to get into the central markets to pick up food but also to get back out to the regions. So we saw a lot of supermarkets and communities go without a regular food supply once they were raided - once the people said, goodness me, I've got to go and stock up. They had enough in the supermarkets to allow people to stock up for a couple of days but once that was finished it was pretty scary, you know?

Conversely, Local Government Officer 1 argued that our current food supply chain is largely risk adverse, stating that *“we're not starving... I think you have to say, we've got food resources that are readily available to us. Even when we had the flood and the markets went out, the companies found the next way to get food into the city via alternative means”*. For Community Educator and Advocate 4, however, it does not need to get to the point of starvation to indicate a stressed food system. For example, during the Queensland floods, food supply interruptions were accompanied by imposed rationing of food. Community Educator and Advocate 4 reported on a story of what she described as a *“really clear indication of what a stressed food system”* could look like which *“can be extrapolated to a whole community”*:

I heard stories of people in Gympie at the supermarket. They were rationing out the loaves of bread and you could have, I think, one or two loaves max per customer and one lady had 10 in her arms. She got to the check-out and the girl at the check-out said you can't have 10 loaves of bread. We've got to share it amongst everybody. She was so cranky that she dropped the loaves of bread on the ground and stomped on them because she couldn't buy 10 loaves of bread... If it was another couple of days down the track and they still hadn't got food, what would have been the ramifications there?

This stressed behaviour is consistent with the Australian Red Cross' appraisal of food insecurity as not only consisting of hunger and poor quality diet, but also feelings of food insufficiency, worry and anxiousness about acquiring food (Borg, 2008: 4, 8). Anxiety as an associated feature of food insecurity was reported by many

interviewees as significant to both short-term crisis situations and long-term implications for community and environmental health. It further supports Habermas's (1987) assertion that the life-world is an inter-subjective and lived experience of the inter-dependence between one's life and the world.

Human and environmental health is compromised by the industrialisation of food

Food adequacy and acceptability is a key feature of food security. This involves the manner in which food was utilised, and assurances of food safety in terms of nutritional and social values (de Haen, 2008: 28; Ericksen *et al*, 2009: 374). The ability to access good quality food and the issues of assurance was a key agreement among interviewees. Typical interviewee risk perceptions were resonant with those reviewed in the literature on ethical consumerism including: concern over food transport, food miles and carbon intensity (Lyons, 2006; McMichael and Friedmann, 2007; Millstone and Lang, 2003); food processing, storage and handling (Jones, 2002; Millstone and Lang, 2003); the pervasive use of fertilisers, pesticides and chemical residues in food (Lyons, 2006; Magnuson, 2007; Millstone and Lang, 2003); and the unknowns associated with genetically modified food (Bredahl, 1999, 2001; Dreezens *et al*, 2005; Hursti and Magnusson, 2003; Lea, 2005; Magnusson and Hursti, 2002; Shanahan *et al*, 2001). Further reports confirmed the importance of food certification (BFA, 2012b) and appropriate labelling (Grankvist and Biel, 2001). Interviewees reported on these concerns with a keen recognition that they exist among the backdrop of agricultural monocultures (Magnuson, 2007); multi-national and supermarket control of food (Dixon, 2007; Lawrence and Burch, 2007); busy lifestyles of consumers (COAG, 2011); and the growing epidemic of obesity in Australia (Dixon and Broom, 2007).

As part of this ethical critique, many interviewees advocated for the benefits of organic farming and nutritional density of food. For example, Community Educator and Advocate 1 argued that organic farming is the best alternative *“given the poisoning of the planet so far ... over the last 100 years of industrial agriculture and industrial food production”*. The importance of nutritional density of food was widely discussed in terms of chemical residues in industrialised food production. For Community Educator and Advocate 2, nutrition and toxic-free farming techniques are central to long-term food sustainability stating that: *“There's no point having a belly full of toxic food. That will only create more issues in terms of medical health,*

community health, down the line". These ideas of non-organic food being poisonous and toxic were manifestations of the perceived risks of the respondents and their world views. Conversely, the mainstream food industry would argue that the correct use of agri-chemicals pose no threat to health or the environment. Further, not using these chemicals may lead to a loss in production and risk food shortages (PMSEIC, 2010; DAFF, 2011d, 2012a,b; DEEDI, 2011a; Government of Canada, 2008; UKG, 2009). Hence the risk perceptions of the two groups are different.

All interviewees were found to reflect on the importance of fresh fruit and vegetables and the concern for freshness as a dominant feature of food adequacy (Batt and Giblett, 1999; Cox *et al*, 1998). Consistent with the literature on ethical consumerism, interviewees expressed a sense of responsibility for purchasing ethical products and the things that are 'good' and 'healthy' for you (Davies *et al*, 2002; Schwartz, 1970). These considerations indicate that interviewees think critically about the longevity and sustainability of our food supply and that a sense of responsibility accompanies that. Given these complexities, the intersection between life (as an 'ethical consumer') and world (sustainability of our food supply) is underpinned by a sense of responsibility, as a pattern of belief.

Food access-ability is compromised by centralised food control

The Australian Government is satisfied with the fact that a "significant proportion" of critical infrastructure is privately owned and operated for commercial purposes (CoA, 2010a: 6). In terms of critical infrastructure for food security, supermarkets are one of the most globally influential transnational and corporate forces (Lawrence and Burch, 2007: 1). For example, Coles and Woolworths control around 70% of grocery sales in Australia (Delforce *et al*, 2005: 379; Dixon, 2007: 30). Interviewees reported that the risks in terms of corporate food were due to corporate corruption, effect of subsidies and artificially low prices on farmer competitiveness and the level of control they exert over food and productive land. For Community Educator and Advocate 4 "*the actual corporate control and ownership of food is another risk to food security... Distribution of that food is tied up and controlled by multi-nationals and corporations and corrupt governments*". For Disaster Resilience Officer 2, risks included "*a very concentrated food supply system in Australia, so much of food really is through a handful of retailers, and those retailers have very, very concentrated supply chains*". Local Government Officer 2 stated that Australia is "*so single point sensitive*" around

the centralisation of *“couple of retailers but then also around growers as well”*. More specifically, for School Educator 2 food security is *“affected by what the duopoly of shops and places like that determine as to what food is available”*. These statements confirm food regime analyses that supermarkets are predominantly concerned with using *“neo-liberal policy settings to enhance their global ‘reach’”* (Lawrence and Burch, 2007: 13).

The issue of access to viable seed stock was cited by some interviewees as a case study in corporate control. For Community Educator and Advocate 3, the key issue in corporate control is, *“the loss of arable land... the loss of ownership of our seeds... [they’re] in the hands of individuals or one or two companies... [and] genetically modifying food”*. Local Government Officer 3 argued that the huge companies which patent and lock farmers into the use of unviable seed⁴¹ is *“where the greed comes into it with these huge companies”*. For Community Educator and Advocate 3, seed control lies at the heart of food security stating that: *“If we lose the bees and other insects... we’re depending on having money to purchase seeds all the time, then we have no control over the means of reproduction”*. Control of seed stock and loss of its genetic diversity within the hands of communities is resonant with McMichael and Friedmann’s (2007: 294, 307) assertion that this food regime is organised from *“specific power configurations”* which serve private corporate interests. Community Educator and Advocate 3 further argued that in terms of domestic farming: *“It’s out of our control, our food... they’re buying massive parcels of land... and they grow everything for the supermarket purposes”*. In the international context, School Educator 3 concurred that dependency on imported food is *“a major issue to food security... It has to, at some point, push out local farming initiatives, because much of imported food is going to be at a competitively low price”*. The life-world as expressed across the interviewees demonstrates an acute awareness of power relationships and the need to acknowledge its potential risk to our food security.

Food access-ability is compromised by lack of knowledge and control

Interviewees agreed that food access-ability is further compromised within the life-world of the general population by: 1) a lack of food knowledge; 2) a lack of

⁴¹ This was made in reference to the terminator gene where purchased seeds will grow a crop but their progeny seeds will be sterile.

knowledge on climate change impacts on food security; and 3) a lack of control within willing communities to be prepared for these risks.

First, the lack of food knowledge among the general population was widely reported by interviewees as a key risk to food security. They agreed that food access-ability is both a social justice and food sovereignty issue. These positions reinforce arguments in the literature for re-thinking, or bridging the gap between food producers and consumers (Clancy, 1993; Duffy *et al*, 2005) to instead reposition consumers as co-producers (see Appendix 5). Interviewees were acutely aware of a sense of widespread social vulnerability due to lack of capability and literacy around food procurement. For example, Community Educator and Advocate 2 argued that: *“From a food security perspective, we need more people to learn how to feed themselves. They’ve got to create their own food and store it and prepare it and share it”*. For Community Educator and Advocate 3 *“it’s about young people, and... everybody... giving them the skills and the knowledge”*. School Educator 3 stated that *“food security has to be linked to the individual and the community access to food... [and] what kind of knowledge they have around food as well”*. For School Educator 3 social justice as it relates to food access and community health must also incorporate food literacy. She said that the lack of food knowledge underpins obesity and youth vulnerability. Youth Worker and Educator 2 agreed that it is important to provide kids with *“the skills that maybe Mum and Dad don’t have”*. In light of this lack of skill, Youth Worker and Educator 1 concurred that *“it’s actually teaching the youth how to be self-sufficient in food”*. Youth Worker and Educator 3 stated that this forms a part of *“life skills and budgeting skills... So before I go and get cigarettes or... fast food, I need to get food for home... as a priority”*. These agreements are in line with aims of the government initiatives for community-based health promotion (see Appendix 11) and local government policy on local food provision (see Appendix 10).

Second, compounding the prevalent sense of pessimism about potentially far-reaching complexities and synergies of climate changes were reports of limited understanding in the general population of the concepts of the link between food security and climate change. For example, School Educator 2 acknowledged that *“climate change is a thing that is argued”*. For Disaster Resilience Officer 2, the problem is about *“who”* people trust for their information and that *“we’re kind of polarised about whether that’s human-induced or not”*. It was generally agreed that in terms of interviewees own particular occupations this has made the communication of behaviour changes to the public particularly problematic. Local Government Officer

2 found it difficult to discuss this with people at community sustainability events, stating that: “*Trying to explain the concept of food security or climate change where the potential impacts could range enormously [is] a difficult concept to get people to understand*”. For School Educator 1, the post-flooding event in the Lockyer Valley⁴² seemed to not sufficiently affect the general public into drawing the connection between climate changes and food insecurity stating that:

You can still see in the fields beside the road, little artefacts of the flood event. You've got piles of rubbish and things in the fields, where there's crops been grown. So directly related to food security, yeah, I think it's there, but it's not as obvious in the public domain. It is for a short time, when there's immediacy between the event and the actual outcome, but whether or not that's in the conscious of the general populous over the long time, I don't think it's quite there yet. I don't think there is that drawn connection.

For Community Educator and Advocate 2, the “*lifestyle dream*” and development pressures which underpin them demonstrate tensions in raising awareness of this issue when it is not a priority: “*We're still selling the Noosa beachside canal estate dream and Gold Coast canal dream. Somehow we're really being very lemming like*”. It was widely agreed that vulnerabilities of our various forms of infrastructure to severe weather events were not sufficiently understood in the general public and compounded by lack of political will to encourage life-style changes. Concerns about lack of strong political actions will be discussed further in Chapter 10.

Finally, the lack of control at the community level to effectively prepare for, and respond to these concerns were reported. While it was acknowledged that there exists a widespread sense of ambivalence among the population on the connections between food security and climate changes, all interviewees understood the need for governments to support community groups which wish to share in the responsibility for their own food-related self-reliance and resilience. Community-based food plans and Non-Government Organisation (NGO) food security position papers identified not only the groups which are calling for shared responsibility, but outlined pathways for government support of community-based initiatives (see Appendix 5). Interviewee reports were highly consistent with these arguments in the literature. For example, for Local Government Officer 3, it is important that “*the community should not be relying on the food chains, the big supermarket food chains and what have you. They should*

⁴² Within 150 km from the Brisbane CBD, the Lockyer Valley is often referred as Brisbane's ‘food bowl’ or ‘salad bowl’. The January 2011 flooding event saw an inland ‘tsunami’ decimate agricultural land, the main highway, homes, businesses and 35 people were killed.

be able to have their own, say, in the community”. For Community Educator and Advocate 4 “food security for me actually means food sovereignty so it means more than just the ability to access food. It also means the ability to have control over where your food comes from and how it's grown”. Community Educator and Advocate 4 further stated that food security is:

The ability for somebody to be able to determine what they eat for a start - so what kind of a diet they choose - how that food is sourced or grown, whether it's grown using a lot of chemicals or whether it's locally sourced or whether it's grown ecologically. What the nutritional density of that food is, if it's actually going to be healthy for them. So having control over that, having a say in what they eat and where the food that they eat actually comes from and how it's grown.

Consistent with the literature in food sovereignty, various interviewees cited local food initiatives as examples in empowering communities to participate in their own resilience, including: Community Supported Agriculture (CSA) and ‘food-box’ models (Cone and Myhre, 2000); direct-buying arrangements such as farmers’ markets (Cameron, 2007; Larsen and Gilliland, 2009); and community and school garden projects (Borg, 2008). Consistent with food sovereignty arguments the preservation of endangered food and heirloom species were often cited as important, as was the “traceability of food” (Lyons, 2006: 164) (see Appendix 6).

As stated in the introduction, the notion of *ability* was the common thread running throughout all interviews and on all topics. It highlights the perceived importance of human capabilities as a key dimension of food security. This was consistently argued in light of the acute awareness of our widespread dependency on the corporate food model. Interviewee reports were congruent with the *National Strategy for Disaster Resilience* (NSDR) concerns about “unrealistic expectations and unsustainable dependencies” which are enabled by “government’s desire to help communities in need and pressure to help those affected” by disasters (COAG, 2011: 2). Both the NSDR and interviewee reports concur that “should this continue, it will undermine community capability and confidence”. Furthermore, “communities need to be empowered to take shared responsibility for coping with disasters” (COAG, 2011: 2).

Conclusion

The hypothesis of this thesis is that food insecurity can increase due to the combination of a rapidly growing urban population, their increasing demand for oil to

maintain our current food supply chain model and climate change impacts on the critical infrastructure needed for this model to function. A re-thinking of governance systems is needed because they have failed to address this problem. This re-thinking requires a critical analysis of the contributions that building social resilience and locally-driven garden contexts hold for alternatives ways of viewing the food supply chain. As demonstrated in this chapter, both the academic literature and the interviews conducted for this project support this hypothesis. This chapter focussed on understanding risks to food security as it is argued by interviewees and where these reports support arguments in the literature. The interviewee reports ranged from individuals working within organisations and community groups who specialise in areas of food localisation, education, local planning for health and sustainability and building disaster resilience within communities. They emphasised the perceived risks of corporate food control and our widespread dependency on the multi-faceted dynamics which are required to support that model. Based on an integrated results and analysis of the interviewee data, this thesis proposes that:

- 1) *Given the unknown complexities and synergies involved, the development of human capabilities is a key feature of developing food security at the local level;*
- 2) *A richer appreciation of food-related risk dimensions can be derived if it is acknowledged that individuals, organisations, communities and their cultures share responsibility in the food security debate;*
- 3) *A re-thinking of governance systems will require explicit understanding of how food provision is subject to control and dependency risk perceptions; and*
- 4) *Policy must go beyond goal-directed purposive action alone to include a dialogical approach.*

These propositions are congruent with the three NSDR actions for leading change and coordinating effort for disaster resilience. First, the NSDR aims to understand *and* mitigate risks to disaster resilience. In terms of food security, risks are framed predominantly by government and business sectors and therefore these players are the ones who exercise their influence based on the patterns of belief, consent and legitimacy of their particular experiences of the life-world (Parkin, 1996). Given the scope and focus of the *National Food Plan*, the 'ability' of community leaders to exercise their influence to mitigate food risks is negligent. The rise of food sovereignty movements and community-based food plans has shed light on the food justice issues which need to be addressed. Inclusion of these forms of risk

perceptions highlights the wicked and intractable nature of the issues involved with food security.

Second, the NSDR aim to form partnerships and networks to share responsibility for disaster resilience can only reflect the risk perceptions which are included. In the absence of food justice perspectives, corporate food agendas will continue to exercise control over food provision despite the reported risks. Wicked problems are subject to a variety of interrelated and uncertain dynamics, and a variety of viewpoints or alternative experiences of the life-world adds resilience to the debate.

Finally, is the NSDR aim for government to help “support community efforts in resilience-based planning, including resilience-building activities, disaster risk management... and capability development” (COAG, 2011: 2). In terms of local food, government will need to give voice to the risk perceptions of business, not-for-profit *and* community leaders in order to prepare and provide guidelines, information and other resources to that end. However, if building resilience within communities is seen as the remedy to these risk perceptions, then the notion of resilience and its various possibilities need to be made explicit so that choices may be clarified and meaningful action taken. This is congruent with the precepts of communicative action to lay open the pre-reflective ground of the natural attitudes taken for granted in everyday life (Berndtsson *et al*, 2007) and provide the opportunities for patterns of belief, consent and legitimacy to reflect upon and altered (Parkin, 1996). This approach to understanding oneself and others, in turn, aims to inform political orientations toward a spirit of negotiation and consensus (Habermas, 1992).

Chapter 8: The problem contains the solution: Practitioner's lived experiences of building social resilience

Introduction

The life-world is a complex and integrated dynamic of where we live and have our experiences. Accounting for practitioner's lived experiences of building social resilience, makes visible their natural attitudes about being in the world given the complexities, interconnections and uncertainties discussed in the previous chapter. That chapter highlighted the risk perceptions. This chapter highlights what can be done about it and that indeed, the problems as they see them, also hold the solutions. The *National Strategy for Disaster Resilience* (NSDR) (COAG, 2011: 7) suggests that capability development and community engagement are central considerations in formulating resilience-building activities. The development of capabilities is centred on this prevalent theme of ability that also runs through the literature and interviewee reports. This chapter will focus on the second NSDR priority action for leading change and coordinating effort through support of community-based resilience efforts. It will compare the reviewed and analysed literature to the collected interview data on how social resilience is understood and how it relates to food security and climate changes. The second NSDR priority action is (COAG, 2011: 7):

*Governments help business, not-for-profit and community leaders by preparing and providing guidelines, information and other resources to support community efforts in **resilience-based planning, including resilience-building activities**, disaster risk management, stakeholder and **community engagement**, disaster response and recovery and **capability development** (Emphasis added).*

The research question addressed in this chapter is: *What is social resilience and how can it be applied to the problems of food security and climate changes?* Interviewees were asked the following questions: 1) *What does social resilience mean to you?* And 2) *Does building social resilience relate to food security and climate change? If so, then how?*

Four criteria were detected within the literature with regards to bouncing-back better which called for self-reliance and self-organisation, inclusiveness and social ties, capacity building, learning and adaptation as developable human qualities and empowerment and participation. The interviewees confirmed the relevance of these positions by re-framing them in a slightly different ways. As will be discussed next,

five themes were generated from the analysis of the interviewee reports: 1) the problem contains the solution; 2) informal networks are key features of self-reliance and self-organisation; 3) helping out and looking out for each other are key features of social inclusiveness and ties; 4) food literacy and up-skilling are key features of capacity building, learning and adaptation; and 5) deliberative participation is a key feature of community empowerment to share responsibility. A list of interviewees was provided in chapter 7. Across all interviewees, resilience as betterment was consistently argued as a way of framing pathways toward community-based capability development.

The problem contains the solution

The traditional disaster risk management approach is to view communities as recipients of top-down wisdom. In this way, communities need fixing by outside influences (Murphy, 2007; Nelson *et al*, 2007) often due to their lack of awareness or ambivalence of the issues (Reis *et al*, 2013 forthcoming). Challenging this view, both the *International Strategy for Disaster Resilience* (ISDR) (UN, 2005) and Australia's *National Strategy for Disaster Resilience* (NSDR) (COAG, 2011) argue that communities need to share in the responsibility for identifying their own problems and framing their own solutions. The NSDR has identified that "we all share responsibility" to understand the risks, and how "we can seek to control their impacts, and inform the way we prepare for and recover from them" (COAG, 2011: 7). This suggests that communities in their various forms have their own wisdoms to bring to bear on disaster resilience (i.e. local knowledge). If community apathy and ambivalence is a problem, innovations in community-based resilience may overcome this barrier by demonstrating localised solutions and engaging local knowledge – giving a sense of ownership and empowerment.

Communities can be both part of the problem and part of the solution. It was interesting to note that interviewees viewed the problem of food risks and the solution of building resilience as two sides of the same coin. All interviewees were asked the question: *Does building social resilience relate to food security and climate change? If so, then how?* Without exception, each interviewee pre-empted the implications of this question before it was posed to them. They all discussed food and climate-related risk perceptions *and* ideas for solutions together in an intertwined manner. It was as though in thinking and talking about the problems, solutions were also

invoked, thus demonstrating that problems and solutions are contained within each other.

For example, Local Government Officer 1 identified that *“the ecological footprint”* and *“the fact that there were pollutant and contamination matters potentially with the food”* is a *“social justice issue”* requiring planned and localised access to food. A planned approach to localised food was highly favourable to all interviewees and is congruent with ideas set out in the community food plans (see Appendix 5). Many interviewees made direct statements about the problem holding the solution, and therefore learning what the solution could be, comes from living through the hardship. Disaster Resilience Officer 3 stated that you can *“use the crisis as an opportunity to reform and create better systems and structures”*. Likewise, Disaster Resilience Officer 2 argued that:

We as living creatures have evolved, you know, through hardship. We've evolved... by confronting different physical challenges and overcoming them... I love bouncing back better. You know, for me, that's much better. When we go through personal shock, it's an opportunity to enrich ourselves, to be vulnerable, to learn, to grow. Why shouldn't that be true at a systems level? Why shouldn't that be true with economic shocks, environmental shocks, cultural shocks?

In the literature, the idea of adaptive learning for engendering resilient behaviour featured strongly (Brooks, 2003; Comfort, 1999; Folke *et al*, 2002; Horne and Orr, 1998; Krasny and Tidball, 2009a; Luthans, 2002; Mallak, 1999; Paton *et al*, 2000; Resilience Alliance, 2007; SDMG, 2010b: 24, 25; Tugade and Fredrickson, 2004; UN, 2005; Valdovinos *et al*, 2010; Wildavsky, 1991). Likewise, adaptive learning featured strongly in terms of interviewee concerns about children's and youth's development of life skills. School Educator 2 explained that teaching children from a young age about dealing with setbacks is a key strategy for creativity and troubleshooting in life, stating that *“if the child is developed as a whole child then they are able to deal with all those things that come forward. They're able to deal with their setbacks. They're able to look for ways in which they can overcome those sorts of things”*. Likewise, the difficulty and solution are seen as two sides of the same coin for youth development. Youth Worker and Educator 3 stated that:

We've worked with young people where [hardship is] all they've known. They've had to be strong for younger siblings or whatever and stuff has been thrown at them consistently throughout their lives since they were kids. They've just had to pick it up and keep going and that's... just reality for them... there's a

massive resilience to all of them, in my opinion, with a lot of the stuff that they've gone through, to still... be functioning.

Disaster Resilience Officer 3 described such examples as “*adaptive learning capacity*”. Likewise, Local Government Officer 2 summed it up this way: “*I see it all being part of... the same problem and the same solution*”. The interviewee statements are congruent with the notion of shared responsibility which reminds us that, as Morrow (2008: 12) suggested “a community is only as resilient as its weakest link”. Morrow (2008: 12) argued that “a resilient city is a constructed phenomenon, not only in the literal sense of what gets built but in a broader cultural sense”. The evidence supports the NSDR advice that solutions to the problems of building resilience at the community level requires community awareness of their own vulnerabilities, and a consideration of these in the development of programs and plans (COAG, 2011: 11). Habermas’s Theory of Communicative Action aims to shed light on the role of practical discourses and therefore contribute to the “participant’s efforts to reach understanding among themselves’ (Parkin, 1996: 419). Speech forums are praxis for setting up a mechanism within programs and plans for not only consensus and negotiation among various viewpoints but for influencing self-understanding (Habermas, 1992). In view of reflecting upon and making visible the underlying natural attitudes of the practitioners, the following four themes relate to the question: *What does social resilience mean to you?*

Informal networks are key features of self-reliance and self-organisation

Self-reliance and self-organisation are key features of social resilience (COAG, 2011; UN, 2005). The main themes discussed by interviewees that were also supported in the literature included: local resilience-based planning arrangements (Borg, 2008; Campbell, 2009; Donovan, *et al*, 2011; Parfitt *et al*, 2012; TFSC, 2012); being able to access everything within walking distance (BCC, 2009b: 10, 11); being part of a self-reliant group or community (Folke *et al*, 2002; MCPPEM-EM, 2008; SDMG, 2010b; UN, 2005); networks for harnessing local resources and expertise to help themselves (Luthans *et al*, 2006); and the existence of multiple levels and expressions of organisation (Krasny and Tidball, 2009a).

Interviewees reported on the vulnerability of critical infrastructure due to extreme weather events and the need for self-reliance. For Community Educator and

Advocate 1 “*power and the water infrastructure*” are particularly vulnerable which necessitates a planned approach for “*power-down*”⁴³ due to the assertion that loss of electricity and water supply will become more pervasive. Community Educator and Advocate 2 argued that power-downs impose conditions that are widely considered to be “*far less comfortable*” and which require the return to “*more old fashioned ways*” such as using candles, hand washing clothes with rain water and acquiring food from friends. For Local Government Officer 4, these conditions that result from power-downs are made more resilient through “*links and connections*” at the community level. The factors for “*social cohesion*” she argued, are the “*community support networks*” which constitute our “*community infrastructure*”. For Disaster Resilience Officer 1, confidence in the continued functioning of these networks in the face of natural disasters occurs when “*the societal structures haven't broken down... a network, remains in some form or other and a community of that can... demonstrate social resilience*”. Community Educator and Advocate 4 urged that “*informal networks*” constitute the backbone of social resilience. School Educator 3 concurred that food localisation lies at the heart of community-driven self-reliance:

Food security could be strengthened by ensuring that the domestic and local farming initiatives are in place, so that we can create self-sufficient societies. [This includes] people just swapping their food in their street. If they've got too much of one thing or growing food out onto their nature strips; taking a plot on a local community garden. Whether it's people assisting in the school garden and getting some produce in exchange for volunteering. Whether it's people buying from farmers' markets, whether it's people going to visit farms at farm gate and buying directly from farmers.

Disaster Resilience Officer 3 agreed that during a disaster “*communities have to be prepared to look after themselves and each other. It's part of the national framework for resilient communities that you have to be prepared for up to 72 hours, and often you can't do that in isolation*”. Therefore social ties and social inclusion are closely tied with self-reliance within communities.

⁴³ The word ‘power down’ refers to a “national government-led program of economic contraction and relocalisation” with community-led initiatives in intensifying local infrastructure and self-reliance. In response to the pressures of climate changes and peak oil, some community precedents in the UK such as Kinsale, Totnes and Brixton (among many others) have developed “Energy Descent Action Plans” (Hopkins, 2008: 125). The Transition Towns Movement has popularised community-based Energy Descent Action Plans globally, including Australia (Hopkins, 2008: 125).

Helping out and looking out for each other are key features of social inclusiveness and ties

The NSDR (COAG, 2011: 5, 6) suggests that a key feature of a disaster resilience community is where “people work together”. Additionally, “they use personal and community strengths, and existing community networks and structures... [to] offer support to individuals and families in a time of crisis”. The interviewees unanimously agreed that this is vitally important. Interviewees supported the argument that inherent capacities of a community (Maguire and Cartwright, 2008) through their diverse forms of knowledge (Krasny and Tidball, 2009a) can harness local resources and expertise (UKCO, 2010) to engender a collective efficacy (Moore *et al*, 2004) in times of crisis.

All interviewees identified various facets of inclusiveness and social ties in some way. In terms of the importance of immediate geography, Disaster Resilience Officer 3 agreed that *“if you have stronger ties or a more resilient community, that will also help you mobilise during disasters a lot quicker and more effectively”*. For Community Educator and Advocate 4, those social ties existed around local food procurement within a 500 mile radius, the majority of which was under water during the 2011 Brisbane flood. Community Educator and Advocate 4 called this time a period of *“all hands on deck”* and recounted that *“during that flood period 20-odd people turn[ed] up with food and cooking stuff so that we could make meals and send out to the mud army... So I think over a weekend we ended up sending out about 3000 meals from here”*. Helping out and providing support were key actions during the recovery period of the Brisbane floods. Community Educator and Advocate 4 stated that *“social resilience was demonstrated through the way people sort of all got together and helped each other recover after the flood and set up flood recovery help”*. Therefore, harnessing local resources and expertise were helpful. For Community Educator and Advocate 3, a focus on commonality cuts through the potential difficulties of diverse positions and equalises people around a common experience, stating that, *“You have to have something that brings you together... When there is a situation where we do it together, it's a magnificent tool for community building, and building resilience”*.

Local Government Officer 2 asserted that responses to recent Australian disasters demonstrate that *“the connection to community resilience is so clear for climate change in terms of a community being able to work together and respond together”*. Interviewees supported the views that trust in relationships (Enemark, 2006), social cohesion and sense of community (Poynting, 2006) are important. For Disaster

Resilience Officer 1, strong connections and commitment to one's place were key features of social resilience, stating that:

Community connectedness and commitment to where you live... [is about] knowing where you can get some help. Knowing who you might need to offer some help to... [and] taking on those responsibilities because you wish to. Because you value the fact that that sort of network, or that sort of headspace, will make a community that you want to live in. It comes about by people having the opportunity to mingle with other people outside their family and outside their immediate neighbours.

Disaster Resilience Officer 3 agreed that this is particularly important for “*the more vulnerable members of the community [who] need to be helped by other people*”. Borg (2008: 15) suggested that “viewing food security as part of a broader understanding of livelihood security and wellbeing” whereby actions need to be place-based and allow people to identify their own capacities and vulnerabilities. For Disaster Resilience Officer 1, inclusion of care measures for our most vulnerable highlights the importance of social support structures, stating that:

Some people [can] slip through the net, who no one bothers to ring up and [they're] down to their last loaf of bread. They might be... older people living alone who are not so mobile. They might be the mentally ill. They might be people who think they've made a choice... but don't realise... what might befall them. [They might be] the unemployed... [or] the seriously disengaged from the community - the homeless. They might be the people for whom English is not their first language. But that - equally that might not be, depending on what structures they have around them.

School Educator 1 added the importance of instilling the sense of “*looking after each other*” through the “*community Neighbourhood Watch*”, whereby others can “*be the eyes and the ears for the community*”. For Local Government Officer 4, encouraging strong social ties is an existing policy agenda for long-term health promotion, stating that “*a number of the councils are working... across Queensland... as a way of bringing people together to have that kind of social inclusion... and physical activity as a way of enhancing mental health and prevention of chronic disease*”. These examples confirm the importance of informal safety-net measures such as: family members, friends and neighbours helping out through the provision of employment and food; and sharing resources and mutual assistance arrangements (Alwang and Norton, 2011: 142).

Food literacy and up-skilling are key features of capacity building, learning and adaptation

The NSDR advised that “disaster resilience is a long-term outcome, which will require long-term commitment”. Therefore, “achieving disaster resilience will require achieving sustained behavioural change” (COAG, 2011: 4). Community food plans have placed high emphasis on education, training and re-skilling for competencies in food procurement and literacy as part of the complex patchwork of behaviour changes needed for food security (Borg, 2008; Campbell, 2009; Creative Commons, 2011; Donovan, *et al*, 2011; Parfitt *et al*, 2012; PHAA, 2009; Small and Martinez, 2012; TFSC, 2012).

The interviewees agreed for the need for food literacy for school aged children, youth and adults. For example, School Educator 1 concurred that “*children don't know that milk comes from a cow. I think that's clichéd, but I think that broader concept of social resilience and food supply in an Australian context is not that strong*”. School Educator 2 asserted the importance of “*recognising where our food comes from*”. This supports the assertion that the “traceability of food” is important (Lyons, 2006: 164). School Educator 3 agreed that food literacy and knowledge for school aged children is of vital importance, stating that “*I think that social resilience, in terms of understanding how to grow food, understanding how to make good food choices is very much a feature of being a resilient individual and resilient family as well*”. For School Educator 3, the localisation of food through targeted programs such as *Adopt-A-Farmer* is “*incredibly powerful and very successful*” in addressing: 1) Lack of food recognition prevalent in Australian school children; and 2) A sense of children’s connectedness with food. She stated that:

The idea is that through farmers registering with that program and schools registering as well, that we start to connect... the local farmer with the local schools... [T]he young people in a school should be able to have access to a farmer... [and] the connectedness to where food comes from in your area and the understanding about what grows seasonally.

The interviewees agreed that “unsustainable dependencies” (COAG, 2011: 2) are created by children’s lack of food knowledge. School Educator 2 asserted that *Kitchen Garden programs* address this lack of knowledge by focussing on “*the ability for children... to understand that growing food takes time, that it's not something that's instantaneous, because most of their life is about instant responses*”.

Therefore, “social resilience and food security” is about “patience... and the ability to know that things take time”.

Likewise a concern for the development of youth skills was repeatedly seen as important in addition to primary aged children. Building skills was seen as one of the most important avenues for building resilience. For example, Disaster Resilience Officer 3’s experience of training youth about sharing responsibility for disaster resilience involved “*teach[ing] kids about resilience and disasters in different ways... so the kids could then act as trainers. We train them and they train others in the school*”. Youth Worker and Educator 1 saw the development of knowledge and skills as central to food access and therefore resilience of the young stating that “*resilience is something that you build up over time... the same with life skills. You have tools and you build up your knowledge, you build up your skills, so if something happens then you’re equipped basically*”. For at-risk youth the relationship with food security was reported to be highly relevant but the significance of climate changes were not due to everyday survival concerns. For example, Youth Worker and Educator 1 asserted that “*we all need food to just survive, so it is one of the high priorities. It’s the highest priority. You don’t have food, what are your options?*” However, climate changes were seen by Youth Worker and Educator 1 as “*probably number 25 on the list of maybe 26. There’s other factors that are more [of] a priority before it gets to that*”. Youth Worker and Educator 2 concurred that youth experience “*other, bigger barriers*” for now. However, Youth Worker and Educator 3 pointed out that climate change impacts may be considered as important in the future when “*it progresses... with more risk factors, it might... be a really big issue*”.

Additionally, Community Educator and Advocate 4 argued for the benefits of up-skilling at-risk youth in a commercial kitchen. She explained that at-risk youth are on the borderline of being incarcerated or one step away from basically getting into a lot of trouble with the law or might have drug issues or family issues that they’re finding trouble dealing with. A lot of them are homeless or couch surfers who have a very unstable life:

Essentially the idea was to employ marginalised youth who were having trouble getting jobs or were no longer suited to school life and up-skilling them in food preparation so that they could learn some skills to take them out into the workplace. [It made a difference] because it was a regular gig for them. You know, they turned up every day, we were able to provide them with networks of people who could maybe help them with accommodation, lifts into work.

Furthermore, the gap in adult food literacy was also on interviewee's radar. A variety of precedents or demonstrations in food innovation through up-skilling were reported. For example, the commercial kitchen was identified as an example of social resilience built around the securing of food. Up-skilling of farmers was seen by Community Educator and Advocate 4 as part of this. By accepting farmer produce that was rejected by the major food supply chains *"our farmers can send us their seconds at a much, much cheaper price and we can process that"*. This allows the farmers to put those funds into planning ahead and:

invest more in their farms, diversify their crops more, you know, up-skill. To be a poly-cultural farmer... You've got resilience in that poly-cultural method in terms of pest resilience and disease resilience and you're up-skilling your farmers as well at the same time so they're able to grow a lot of different varieties of things at any time of the year.

Community and school gardens as learning spaces emerged as a prominent means of developing food capabilities. The idea of learning and education around food was a common feature highlighted by the vast majority of interviewees. For Community Educator and Advocate 3 there are *"some really excellent people out there with the skills to educate or to skill other people in terms of... addressing or adapting to climate change - beginning to do things that are going to help them to live with it"*.

Local Government Officer 1 agreed that the Cuban case for urban agriculture is a precedent for turning adversity around through food literacy and innovation stating that this case is *"absolutely inspirational... that for me is one of those social resilience things. They didn't have it one their radar and yet they got really inventive and one thing and another in no time at all sort of turned it around"*. Arguments for community-based innovation widely cited permaculture as an example. Disaster Resilience Officer 2 stated:

I love permaculture for that reason. It's so thoughtful. Interestingly, permaculture really is, in many ways, what enabled the Cuban kind of experience [toward the] gradual overcoming of the lack of fertilisers, and it was just a huge contribution.

For Community Educator and Advocate 1 permaculture principles provide an ethical foundation for behaviour change stating that, *"Education's a key one. It's very key in terms of the social systems. Because that's about preparation of the next*

generation... and beyond... [in] all its obligations, rights and responsibilities". For School Educator 1, those responsibilities include building "the capacity of a community, society, to be flexible to adapt to variabilities, be it environmental, economic or... social". Based on their lived experiences as practitioners in the development of social resilience, food literacy and up-skilling were agreed by all interviewees as key features of capacity building, learning and adaptation. This is resonant with the NSDR assertion that unsustainable dependencies require "sustained behavioural change" (COAG, 2011: 4). Furthermore, behaviour changes can be facilitated by mechanisms for reflection, understanding and dialogue (Habermas, 1992).

Deliberative participation is a key feature of community empowerment to share responsibility

The NSDR acknowledges that "communities need to be empowered to take shared responsibility for coping with disasters" (COAG, 2011: 2). Interviewees agreed with themes in the literature that highlight the importance of: community participation in decision-making where communities wish to be engaged (Clauss-Ehlers and Lopez-Levi, 2002; Krasny and Tidball, 2009a; Reis *et al*, 2013 forthcoming); the importance of leadership in facilitating constructive engagement (Ink, 2006); developing shared understandings (MCPEM-EM, 2008); and the use motivation and enthusiasm to encourage involvement of others (UKCO, 2010).

The absence of dialogue was commonly seen by interviewees as a key constraint for building social resilience. For Local Government Officer 2, it was a difficult task to get people to share experiences due to their prevalent lack of social connections which derive from "a relatively individualistic society". She argued that:

What I find in my work is that a big challenge is actually getting people to share their stories and share their experiences, because they're lacking that connection with community where you... may sit down and everybody knows what each other's doing... I think that we could do more in terms of the social empathy, about understanding the total environmental impacts or climate change impacts on our global community.

Inviting participation and shared responsibilities was supported repeatedly by interviewees in terms of enhancing deliberative and democratic processes. For

Community Educator and Advocate 1 deliberative democracy is the cornerstone of building social resilience stating that:

Indicators of emerging resilience, social resilience, I think will be behaviours like vigorous debates... So the debating and the decision process, the decision rules, how we decide on these particular issues, what we decide the outcomes are going to be.

In a nutshell, these ideas are resonant with Local Government Officer 2's statement that: *"When I think about a community that's resilient to climate change, it's one that's very well informed, educated, active in the space, supportive of each other"*. It was widely agreed, however, that this requires a sense of empowerment and confidence building to be engaged in such activities. This involves a proactive approach to developing the psychological capital that contribute to confidence and feelings of success (Luthans *et al*, 2006) and the ability to cope with, adapt to and shape change (Folke *et al*, 2002). For Disaster Resilience Officer 2, what constituted a functioning democracy was a key question for the community level to feel empowered to participate in their problems and solutions. Disaster Resilience Officer 2 asked:

What is democracy? ... what is a functioning democracy? ... one of the things that we really embrace is deliberative models of public engagement, and empowering ordinary citizens to become informed about alternatives, and then giving them not just the resources to consider what's important and make collective decisions, but actually giving them the budget to do it... if you involve the community in deliberations about how their own taxes are spent, it's a great way for them to meet their neighbours and to become much more connected.

Disaster Resilience Officer 3 suggested that facilitated workshops on *"a range of activities relating to adaptive leadership"* within local government, business and community sectors are a valid way of finding solutions for disaster resilience. She reported that: *"It gets them to brainstorm strategies ... Some of the people who came to the workshops have actually been employed [in disaster resilience]. Others have gone on to start amazing initiatives in their community"*. However, informal types of relating such as sharing of ideas and experiences, and planting seeds were also suggested as valid forms of participation. For example, for Local Government Officer 1 'seed planting' of ideas is a helpful metaphor for sharing ideas. She suggested that:

I'm only one person and I can only do so much but if you share the ideas with other people... you plant that little virus there... I think that is an important

component about social resilience that it's those new ideas or a new way of thinking about and making those opportunities happen for people. It's not that you do it, but you've facilitated it for somebody else.

In terms of conducting the interviews, the role of discussion with interviewees was found to be very significant. It was interesting to find that interviewee framing of resilience required time, discussion and reflection. The initial definitions on the meaning of social resilience were consistently modified by all interviewees as they began to discuss this concept in the terms of food security and climate changes. It was found that anchoring discussion of resilience within contexts and issues, together with providing the arena for discussion and hearing of one's own ideas expressed, creates the environment for deeper, more contextualised understanding of what interviewees mean by this term. For example, when attempting an initial definition of what social resilience meant to her, Local Government Officer 2 stated: "That's a very good question. I think to me social resilience is the ability of a community, whatever size, to respond to pressures". After some discussion on the implications of resilience for food security and climate changes, Local Government Officer 2 expanded her insights to include that social resilience as:

A certain strength, a knowledge and an ability to share knowledge and share resources that allows a community to adapt to an external or an internal force. [Social resilience]... would be highly dependent on sharing the knowledge that's in the community, learning from people who know and having a certain trust for people who do know about certain issues. I think it's also about respecting diversity of opinions and having an open discussion, no sacred cows about things and where things should be headed.

Interviewees also reported tensions between the different meanings of resilience. As discussed in the review and analysis of the literature, defining the word resilience was political as the varieties of professions vie for their own particular view of it. For Local Government Officer 2 this word can present tensions in her workplace. For example:

I think social resilience is such a complex issue and it really depends on which way you look at it... Sometimes it's just knowing the language and knowing the trigger in what we do, trying to talk to somebody about resilience could be a massive battle but understanding the trigger that will get them to change and get them to move... I think everybody has their own tipping point; it's just a challenge finding it.

Conclusions

This thesis hypothesised that a re-thinking of governance systems is needed because they have failed to address the potential wickedness of food security risks. It has been argued that this re-thinking requires a critical analysis of the contributions that building social resilience and locally-driven garden contexts hold for alternatives ways of viewing the food supply chain. As demonstrated in this chapter, both the academic literature and the interviews conducted for this project support this hypothesis. This chapter focussed on resilience-building activities as they were argued by interviewees and where these reports support arguments in the literature. Based on an integrated results and analysis of the interviewee data, this thesis proposes that:

- 1) *Solutions to the problem of building resilience within communities can be found within communities;*
- 2) *A richer appreciation of resilience-building activities can be derived if it is acknowledged that individuals, organisations, communities and their cultures share responsibility in the resilience-building debate; and*
- 3) *Policy practice will benefit from re-thinking governance systems. This will require explicit understanding of how deliberative participation can empower those communities which wish to participate in building their own resilience.*

These propositions are congruent with the three NSDR actions for leading change and coordinating effort for disaster resilience. First, the NSDR aims to understand *and* mitigate risks to disaster resilience. Communities that have existing organised networks of relationships in food procurement and social inclusiveness, have already demonstrated set precedents in the capacity for mitigating disaster risk at the community level. This reinforces the assertions that: 1) local informal networks in food procurement do already exist; 2) communities already use their informal networks to help look out for each other; and 3) solutions to the problems of building resilience within communities can be found at the community level. Second, the NSDR aim to form partnerships and networks to share responsibility for disaster resilience can only reflect the resilience-building activities which are included. Policy practice will benefit from integrating the learning from speech forum processes (Hoch, 2007).

Finally, is the NSDR aim for government to help “support community efforts in resilience-based planning, including resilience-building activities, disaster risk management... and capability development” (COAG, 2011: 2). Government will need

to give voice to the ideas of business, not-for-profit *and* community leaders in order to prepare and provide guidelines, information and other resources to that end. Unsustainable dependencies can be addressed through informal community-based and formal education avenues. Food literacy which involves re-skilling, training and education form the basis for long-term adaptive learning. It confirms the assertion that “essential resiliency or degree of true resilience will define the level of risk to any hazard” (Morrow, 2008: 12). As will be discussed next, community and school garden initiatives provide established demonstrations in meaningful action taken at the community level, but they are not without complications.

Chapter 9: Worldviews in tension: Practitioner accounts of the legitimacy of garden hubs

Introduction

Community and school garden networks are community-based innovations that seek to share responsibility for local food procurement through spaces of social gathering, be they on-line or face-to-face. This chapter will focus on the *National Strategy for Disaster Resilience* (NSDR) priority action for leading change and coordinating effort through building shared responsibilities with garden networks and partnerships. Practitioner accounts of the legitimacy of community and school gardens as hubs, reveals a series of common ground and tensions in worldviews. A worldview is a point-of-view held that reinforces why things are going on and what is considered important. This chapter will analyse the researched literature and collected interview data on how community and school gardens contribute to building social resilience and food security and what the challenges are. The research question addressed is: *How do community and school gardens contribute to building a community capacity for social resilience and food security?* The NSDR advocates that (COAG, 2011: 7):

Leaders drive development of partnerships and networks to build resilience at the government, business, neighbourhood, and community levels. These partnerships are based on a sense of shared responsibility, and an acknowledgement of the need for coordinated planning and response.

The literature on food security risk perceptions identified issues with food control and dependencies. The research on social resilience highlighted four dimensions of resilience as the basis for assessing the relevance of community and school gardens for building resilience in communities. They included self-reliance and self-organisation, inclusiveness and social ties, learning and adaptation as developable human qualities and empowerment and participation. In this way, pathways for repositioning the issues of control and dependency involved articulating how community and school gardens can share responsibility for food security as well as building social resilience.

The interviewees were asked: *The draft of the 'new' Brisbane City Plan proposes 'urban villages', where everything is within walking distance. What do you think about this?* Theme 1 outlines the agreement that local village hubs with local food gardens serve to empower shared responsibility at the community level. The issues argued highlight weaknesses in the main argument. Reports include a sense of idealism about the notion of local food hubs; whether local businesses can be economically

competitive with the big brands; the pressures of land-use development; and the food scale required for widespread food security.

Second, interviewees were asked: *If community and school gardens were part of 'urban villages', how might they contribute to building social resilience?* Theme 2 presents the agreements on community and school gardens as hubs for empowering social inclusion and participation. It further elaborates on the role that the inclusion of various groups play for creating social support structures and how community and school gardens function as hubs for creating sense of community. The key issue concerning the main argument highlights that stifling rules and some concerns about individual safety can be problematic for social connectedness.

Finally, interviewees were asked: *If community and school gardens were part of 'urban villages', how might they contribute to building food security?* Theme 3 outlines the agreement that community and school gardens are hubs for empowering participation in local food knowledge and literacy. However, issues with this argument include the presence of public liability arrangements, funding arrangements and school curriculum hurdles.

Local village hubs with local food gardens and initiatives serve to empower shared responsibility

Urban planning considers access to food in terms of the location and provision of local stores (Ball *et al*, 2009; Cummins and Macintyre, 1999; Kaufman, 1997; Powell *et al*, 2007b) and promoting local forms of mobility such as walking, cycling, access to public transport and reducing the use of privately owned cars (Black *et al*, 2010; Frank *et al*, 2004; Gordon-Larsen *et al*, 2006; Inagami *et al*, 2006; Mujahid *et al*, 2007; Saelens *et al*, 2003). With this in mind, interviewees were asked the question: *The draft of the 'new' Brisbane City Plan proposes 'urban villages', where everything is within walking distance. What do you think about this?* All interviewees expressed the desire for closer and direct access to food procurement. Consistent with food regime analyses, interviewees saw the importance of making decisions about reducing food miles and carbon-embodied food (Cribb, 2010), the many handlers of our food (McMichael and Friedmann, 2007) and the trace-ability of that food (Lyons, 2006). School Educator 1 agreed that: *"I'm always looking for local produce, and that 100 mile concept... Reducing all the actual miles and other in-betweeners, with the brokers and the distributors and the retailers"*. For Local Government Officer 2, food

security was *“about making that connection more closely with the people who grew the food”*.

Consistent with views in the literature all interviewees expressed a preference for reducing traffic, commuting and the distances travelled (DERM, 2009) and increasing opportunities for local forms of mobility such as walking (Borg, 2008). Local Government Officer 2 observed that *“living in the urban village where I am, you could easily not have a car, its walking distance to the city; it's really accessible by buses and public transport. It's walking distance to shops, all the major services, medical centres”*. School Educator 2 agreed that *“anything like that is of great benefit... we still have a lot of parents who drive children short distances, but in this community you can walk most places”*. All interviewees viewed community and school gardens as contributing to our long-term resilience in the face of wicked and complex risks⁴⁴. The worldview of localised food procurement with lower levels of travel was supported demonstrating further support for the main argument that such gardens can contribute to resilience and food security through shared efforts. For example, Local Government Officer 2 concurred that, *“If we're moving food production closer to homes and we've got more control over it, we're less vulnerable to climate change impacts, peak oil issues [and] transport issues”*.

Issue with the main argument: Local food hubs are idealistic and economically non-competitive

Interviewees argued that planning for local food hubs was desirable but somewhat idealistic given the competitive advantages of global business and land-use developers. Community Educator and Advocate 2 pointed out that idealism about the function of gardens can be misleading. She observed that people *“get locked into veggie gardens and fruit orchards”* as food security sites, *“but there's protein... the meat, the eggs, the chooks, the fish... being able to adequately feed large numbers of people you need an awful lot more broccoli than... chooks”*. Disaster Resilience Officer 1 stated that *“I like it in theory. I just wonder how it's going to work in practice”*. Likewise School Educator 3 suggested that *“that sounds great. It's obviously got to be unpacked. These things can sound great in concept and on paper, but how they translate to projects is another thing”*.

⁴⁴ Rittel and Webber (1973) were the originators of the idea of a wicked problem.

Many interviewees speculated on whether the worldview in support of localism really means local. For Disaster Resilience Officer 1, the 'corridor city plan'⁴⁵, in conjunction with the long-distance travel embodied in our food, negates the aim of the localised village concept. She argued that people who work in an urban village don't necessarily live there, stating that *"they've probably bought a business, and they live somewhere else and they come to it"*. Community Educator and Advocate 3 concurred that the urban village is:

the ideal, of course... Obviously, it's an ideal world kind of utopia that its own suburb feeds itself. That doesn't mean that it cannot be achieved, but I'm just wondering whether it's just a trendy term to use... The urban village, where you have the coffee shop and you have the bakery and you have the fruit shop and your supermarket and your school, but still everything comes from miles away or from the other side of the world, and still you go out of there to work on the other side of the city, so your carbon footprint is still quite large, yet you live in the urban village.

All interviewees expressed concern about the ability of local village businesses to compete successfully with the worldview of unlimited growth underpinned by global corporate business and land developers. On the one hand, School Educator 3 stated that: *"If we could start to develop those local food initiatives.... I think we will see tenfold benefits in terms of recognising that we're not paying the higher costs associated with import of food"*. Conversely, for Disaster Resilience Officer 1, the high costs of local products as opposed to bigger franchises highlight the price competition problems of localism. She added that *"if you are going to have to compete with supermarkets, and I think that's pretty tricky... I go to the farmer's markets... I don't think their prices are always really competitive"*. Disaster Resilience Officer 2 argued that the appetite for the price competitiveness of big brands will impact on the economic viability of smaller urban villages and popularity of urban gardens as *"there's a lot of appetite for people that love big"*. As a committed advocate for community-based resilience initiatives, Disaster Resilience Officer 2 conceded that: *"I, personally, am super contorted around this. I love shopping at Robina. Have you been to Robina⁴⁶?"*

⁴⁵ The 'corridor city' design aims for urban villages which are connected via transport links.

⁴⁶ Robina is a very large shopping mall on the urban fringe of the Gold Coast that is filled with trans-national retail outlets.

Similarly, for Community Educator and Advocate 2, planning for urban villages and gardens can be high-jacked by the political agendas of developers. She stated that *“I think the theory is absolutely splendid, I think the practice will not match the theory. I was a member of the community consultation process for the ... Neighbourhood Plan and I found that very disheartening... [because of] the lobbying factor of those who make their money by subdivision and land sales”*. Community involvement in developing Neighbourhood Plans were advocated by interviewees but at times accompanied by frustrations over power struggles. Local Government Officer 1 conceded that *“trying to get food on the radar of the urban planners is actually really hard”*.

Interviewees also agreed that food security is largely a matter of scale. Local Government Officer 2 said that moving toward *“the real intention of supply[ing] a critical mass of food”* involves the challenge of *“making sure that there's enough space”*. This would entail *“doing rooftops or multi-story urban food gardens [which put us in the position to] seriously [be] able to meet the needs of the community”*. Local Government Officer 1 explained that urban planning is moving toward more high density and more mixed-use opportunities along growth corridors (BCC, 2009b). The main thrust in planning is for the ‘corridor city’ where by urban villages are connected via transport links. Local Government Officer 1 explained that *“the urban village idea fitted in with that corridor city. It's basically about ... transit oriented development as they call it; which is just another name for an urban village”*. However, Local Government Officer 1 observed that various types of agriculture may be modified to fit in with the mixed-use planning approach and the different components of the “City Shapes” (BCC, 2009b). Local Government Officer 1 stated that urban agricultural opportunities such as food gardens and aquaculture may be added onto green roof projects which aim to offset the *“urban heat island effect”*. However, many interviewees expressed a sense of wariness of this actually happening. Many interviewees suggested that gardens were more about addressing specific social circumstances rather than widespread and systemic food security. Disaster Resilience Officer 1 argued that such ideas are more about food enhancement than food security stating that:

If you're starving or you're homeless and you just need a bit of a help or something, I think [gardens] will surely provide some food... I think it would be just certainty that you've got some greens. [However] if the whole village has gone under water, your community garden will have gone under water too,

unless you've been very lucky to secure some good land. So it depends on how that's set up basically, in terms of disaster.

Community Educator and Advocate 2 argued that *“it's about that fuller understanding of the total environment, not just a limited view of food”*. Recurring themes that emerged from the interviews and the literature included: issues of access to appropriate land sites for gardening (Elder, 2005; Francis, 1987; Moskow, 1999; Schmelzkoff, 1995; Teig *et al*, 2009) and the lack of scale to meet widespread demand for food (King, 2008; Moskow, 1999; Patel, 1996; van Vuuren, 1988). School Educator 1 argued that *“food security is about scale”*. He observed from his travels that *“the intensity of food security... especially in India and China - every skerrick of any particular land source, no matter what it is, has got a terrace garden and something growing on it”*. This level of intensity where *“every skerrick of land is consumed with a garden... that to me is aimed at food security. We don't have that sort of culture in Australia... in an urban context - I don't see it happening immediately”*. Likewise with regards to school grounds, School Educator 1 pointed out that the *“limited space”* will not meet all food needs of students and their families. Therefore he proposed that community and school gardens are *“demonstrations [of] what can be done”* which are *“complementary and supplementary”* to food security through *“healthy alternatives [and] as an education and an engagement process... but not replacing”* food security. Communicative action aims to capture this fuller understanding of the environment.

Community and school gardens are hubs for empowering social inclusion and participation

Interviewees were asked: *If community and school gardens were part of ‘urban villages’, how might they contribute to building social resilience?* All agreed that villages with food gardens contribute to social inclusiveness by empowering various demographic involvements and providing hubs of social gathering. The contributions of social inclusiveness and ties were seen to be strong indicators for long-term food security by providing support structures. Consistent with the literature, interviewees agreed that building community capacity for support structures is important (Armstrong, 2000; COAG, 2011; Kingsley *et al*, 2009; Sampson *et al*, 1997; Teig *et al*, 2009). For Local Government Officer 4, the connections between planning for local urban villages, local food and community health are evident:

Looking at incorporating opportunities for farmers markets and things like that, that can bring the produce to the local communities... from a health promotion perspective, [its] around looking at creating environments that are supportive of health... place making... [and] councils to build capacity around healthy communities.

As discussed next, the worldview that food localism is favourable was widely reported in terms of the health implications. These involved: 1) inclusion of various participants and minority groups; and 2) community and school gardens as hubs for creating sense of community and social connection. Through the scaffolding community support, they contribute to shared responsibility for social resilience.

Inclusion of various groups creates support structures

Many interviewees viewed gardens as a food security issue for our socio-economically vulnerable (Borg, 2008; Patel, 1996). School Educator 3 suggested that: *“School and community gardens could supply fresh food to communities... particularly vulnerable community members who are low income and who don't have access to the kinds of food choices that many people do”*. This supports a key agreement in the literature which highlights the need for government-driven safety-net initiatives (Dept. of Communities, 2011; FaHCSIA, 2011; Qld Health, 2011), often conducted in conjunction with community groups for addressing food and nutritional disadvantage (Anglicare, 2013; Australian Red Cross, 2012b; Foodbank Queensland Limited, 2012; Salvation Army, 2013).

Interviewees identified that community and school gardens generate benefits for school children (Alexander *et al*, 1995; Blair, 2009; Brunotts, 1998; Brynjegard, 2001; Moore, 1995; Thorp and Townsend, 2001), the elderly, and the ill (Blair *et al*, 1991; Wakefield *et al*, 2007). School Educator 2 pointed out the not all children get to sit a table and eat a balanced, healthy diet on a daily basis, and often foods are pre-packaged and designed for convenience (Dixon and Broom, 2007). Local Government Officer 1 commented that: *“I think it's great that the school gardens are [giving] the kids... that opportunity to build on with the healthy eating and the nutritious foods... because as we know, we're not quite up there with the United States in terms of obesity and overweightness but we're not all that far off”*. School Educator 2 agreed that school gardens *“give that reconnection... it gives the children*

an opportunity to come into contact with older people and value the fact that older people are important in our society”.

Local Government Officer 3 noted that, the elderly report a high degree of satisfaction with gardening, stating that they *“joined the garden, because [they] are mixing with all different age groups... They said, we're getting our exercise, we're growing our food, we're enjoying it, we're speaking to children [and] we're speaking to teenagers”*. Local Government Officer 3 also reported that Red Cross volunteers were *“very, very supportive”* of a nearby community garden. Finally, she recounted her experience with an ill man, stating that *“I've had a garden that has started and had someone who was quite ill. He lives from the garden, now, eating everything from the garden, like picking fresh and cooking fresh and steaming. He hasn't been ill for the last two years”*.

Interviewees also suggested that gardens are therapeutic for mental health (Blair *et al*, 1991; Borg, 2008; Kingsley *et al*, 2009) and help the socially isolated and homeless (Borg, 2008; Kingsley and Townsend, 2006; Langhout *et al*, 1999; Myers, 1998; Teig *et al*, 2009). For Local Government Officer 3, gardens are therapy for the health and well-being for socially isolated people who have mental illness. She reported that: *“We are getting those people that aren't able to get a job. They're mentally affected in one form or another... Since we've put the garden... I have seen a huge difference in their self-being”*. Local Government Officer 3 added that: *“A lot of people are using the gardens for therapy. I have spoken to a lot and I say, what do you enjoy most? They said, really, it's very therapeutic”*. Youth Worker and Educator 1 concurred that food localisation is beneficial for those suffering from mental health issues such as depression and anxiety (Borg, 2008) stating that: *“if [food] was localised, there's a lot less barriers we need to work through for [clients] to even get to the food”*. Youth Worker and Educator 2 observed that *“a sense of belonging and ownership... helps with anxiety and mental illness”*.

Consistent with community and school garden research, skill development was seen by the interviewees to be important for all life stages including school children and youth-based competency (Jensen and Schnack, 1997; Jickling, 1992; Jickling and Spork, 1998; Kleiber, 1999; Lekies and Sheavly, 2007; Schusler *et al*, 2009; Simovska, 2000), and adult learning through enterprise and food literacy (Corkery, 2004; Elliott, 1983; Feenstra *et al*, 1999; Flowers and Chodkiewicz, 2009; Fulton, 2005; Howe and Wheeler, 1999; Patel, 1996; Stocker and Barnett, 1998). Youth

Worker and Educator 2 argued that mixing with *“small groups, there'd be budgeting; there'd be cooking. It wouldn't just be let's go plant a garden... It'd be a whole range of skills associated with that and connection within your community [which] for someone who has mental illness or anxiety is just going to be awesome”*. Youth Worker and Educator 1 concurred that: *“Homelessness doesn't start when there's no roof over their head. The homelessness, as I see it, starts when they become detached from... community”*. Interviewees agreed that learning and skill development was the nexus between long-term food security and social resilience.

Finally, many interviewees agreed with the literature that the diversity in garden memberships is a particular strength (Buckingham, 2005; Nemore, 1998; Patel, 1996; Rishbeth, 2001; Saldivar-Tanaka and Kransy, 2004; Shiner et al, 2004). Community Educator and Advocate 2 reported that *“the diversity of people [in our community garden] is a wonderful function of this place... their professional fields”*. She added that they have *“made their own way to this kind of learning”*. She reflected that:

The spread of students that come [to our community garden] many of them are teachers, engineers, architects, it's very encouraging to know that a lot of folk who wear all sorts of different hats, nurses... all sorts of different trades, farmers, builders, plumbers... people whose outreach into the broader community is quite mind boggling in terms of the network.

Because of the diversity of people involved, and the various groups that therapeutically benefit from garden activities, building relationships was seen as a key area to address. Local Government Officer 1 stated: *“I think there's a lot of really social and community benefits that come from community gardens and school gardens”*.

Community and school gardens as hubs for creating sense of community

In terms of community gardens, Local Government Officer 3 reported that: *“It's a hub, yes. It is a hub and [garden participants] said... we are starting to speak to our neighbours... We didn't know who they were. It's really great now. I know my neighbour; we know what is happening in our little community and our little location”*. All interviewees shared a range of views which support the literature that urban villages can promote a sense of community (Patel, 1996; Saldivar-Tanaka and

Kransy, 2004; Shepard, 2009; Shinen *et al*, 2004) and that this is the *container* for addressing the lack of food knowledge, skill and self-sufficiency.

For Community Educator and Advocate 4, urban villages “*makes sense... what it does is actually create that more defined sense of community*”. Local Government Officer 2, who lives in an urban village, reported that there’s “*a really strong sense of place and community... So I've had a very positive experience with the urban village style of living*”. Disaster Resilience Officer 1’s experiences with village lifestyle confirmed that people “*have a real opportunity to interact with each other*”. For Disaster Resilience Officer 3 “*you have strong social ties with people. You're more likely to interact with people on the streets, be they your neighbours or the shopkeepers that you go to more frequently. Obviously, it promotes active exercise in walking and reducing car miles*”. School Educator 1 stated that:

The schools must be part of that nexus between the sense of community and sense of place in the community and the various hubs. The school's a hub; the transport node is a hub. The shopping and purchasing plan and also the community facilities should be all networked and flexible use and access. School gardens - they've got to be a key component of that. They've grown exponentially in their availability.

School Educator 2 said that because “*schools are becoming more and more that point which brings people together... we need to be a lot more things*”. He stated that: “*We have a lot of people who come from within our community and outside our community to help with our gardens and our whole [community-based school gardening] program because they're attracted to that and they see the benefits.*

School Educator 1 argued that:

The sense of a village community with transport being one of the contributors is just to be applauded, because that's the sense of ownership... To make it then more of a living community, and having things like community gardens and playgroup areas and all those things, that's just to be applauded... Anything around engaging a sense of identity and sense of place around community - where you live and where you can then walk, commute, commune, communicate - all around that social dimensions.

Interviewees strongly supported the main argument that gardens can contribute to social resilience, in this case, through the avenue of social inclusion. However, for School Educator 1, villages planned around transport nodes do not automatically translate into a positive sense of community. He argued that without a “*living*

community”, so many community hubs have become “just desolate industrial car parks”. All interviewees confirmed that planning urban villages to facilitate community-based efforts in local food are problematic.

Issue with the main argument: The rules of engagement and safety concerns can be problematic for social connectedness

Consistent with the literature, interviewees reported that internal relationships within community and school gardens can be problematic due to individual safety concerns and the rules of engagement (Masuda and Garvin, 2008; Teig *et al*, 2009). For School Educator 1, the use of ‘Blue Cards’ was important for verifying the suitability of adults on school grounds when they are not family members. Additionally, *School Watch* was seen as a useful after-hours community form of involvement which is “a bit like Neighbourhood Watch. We have the neighbourhood's keeping an eye on the area, and they're doing the right thing... [like] diminishing vandalism”.

School Educator 2 reported that workplace health and safety concerns can present an obstacle to gardens as outdoor learning spaces and as Blair (2009) argued, a perpetuation of concreted school grounds. School Educator 2 argued that these outdoor learning spaces provide the opportunity for “real play and they are focused and involved”. Tensions in worldviews can occur with balancing risk assessment for dangers in the outdoor areas with “confidence” and “trust” in the children to act safely while they are playing with each other. School Educator 2 suggested that “you've got to give [children] the responsibility. That's what it's about, it's about kids having responsibility and them knowing that that's a privilege”. Supervision was a key point as well as, “a lot of those areas will be the more remote parts of the school which you want the children to get involved in. It's being able to supervise them most definitely”. In this way, play and relationships are not superseded by stifling rules. School Educator 2 admitted that:

I suppose I've got to struggle with the fact that the children gradually move out and get into areas where you may think that there is a danger. Do I continue to allow them to be in there or do I pull them back? What decisions do I make about that? I guess you're constantly doing these on the go risk assessments about what the benefits are as opposed to the risk. I guess sometimes you've just got to go out on a limb.

Interviewees who were actively involved in community gardens reported that worldviews about individual safety can be an issue (Teig *et al*, 2009). Local Government Officer 3 reported that when working with one mentally ill gardener she felt threatened, but this was addressed through a group meeting to establish rules that medications were taken beforehand to ensure the right frame of mind when working with people. For Community Educator and Advocate 2, individual safety can be compromised in garden projects where people assume that community gardens are “*all benign and loving*”, the kind of setting that is “*all smothered over with the golden glow of love and peace and new age sharing and things*”. She further added that “*any community organisation will be a reflection of the wider world*” and that the “*assumption of altruism is just not enough to maintain community safety*”. As an example, Community Educator and Advocate 2 noted that “*the kind of folk who come here every week as volunteers... some not quite so voluntarily... [include those with] community service [and] Centrelink obligations... most of them are going to be juveniles... [others come from] women's prisons... So a place like this gathers together a truly motley crew*”. At times it therefore this takes “*good will and a lot of holding your breath and hoping everything will be all right*”. Community Educator and Advocate 2 stated that “*even within in community organisations I believe you have to have checks and balances... [the] rules for social interactions between genders and ages, the management of interpersonal behaviour and questions of trust*”. In addition to safety concerns, knowing and enforcing the rules of engagement within the group was therefore seen to be important. Communicative action seeks to aid in the interpretation of unclear situations that perhaps only a few members may initially recognise (Habermas, 1992). Capturing these voices contributes to the “*participant’s efforts to reach understanding among themselves*” (Parkin, 1996: 419).

Community and school gardens as hubs for empowering participation in local food knowledge and literacy

Interviewees were asked: *If community and school gardens were part of ‘urban villages’, how might they contribute to building food security?* For many interviewees, food security was about *knowing* that you have access to food and that the skills, abilities and know-how to ensure that knowing were instilled in people. For example, Community Educator and Advocate 2 summed up many concerns, when stating that: “*Food security... it’s something people assume, don’t think about, and don’t even know the current arrangements, except for when we have the floods and the fires and the disasters*”. According to Disaster Resilience Officer 1, people are “*lacking*

information about what they might need to do". For Local Government Officer 2, the issue was that *"we're so far removed from the foods actually grown"*. She said this is accompanied by *"an expectation that [when] you go to the supermarket, something's there all year, every day all year"*. For Community Educator and Advocate 3 *"if the trucks couldn't arrive for one reason or another, that would have incredible social repercussions and issues"*. The majority of interviewees argued that programs in support of the localisation of food would address the widespread lack of food knowledge, and that the pervasive lack of food knowledge needs addressing at the community or local level with measures which empower people to be confident and creative with food production and handling.

Interviewees agreed that building capacity for learning is a human quality that needs to be developed when addressing issues of long-term resilience and food security (Brooks, 2003; Comfort, 1999; Folke *et al*, 2002; Horne and Orr, 1998; Krasny and Tidball, 2009a; Luthans, 2002; Mallak, 1999; Paton *et al*, 2000; SDMG, 2010b: 24, 25; Tugade and Fredrickson, 2004; UN, 2005; Valdovinos *et al*, 2010; Wildavsky, 1991). Consistent with these assertions, School Educator 1 argued that school gardens contribute to food literacy and competency of school aged children through a concept called *"learnsaping"*. This is where you *"actually have educationally orientated landscaping that includes play, gardens, space to run, quiet areas, food areas [and] chooks - all those sort of things done in a planned approach"*. He further asserted that *"the learnsaping concept is very important to integrate"* with the national curriculum. Disaster Resilience Officer 2 stated that: *"Gardening is one of the most popular things - little food gardens in schools"*. She explained that these efforts can be integrated with *"a rigorous curriculum aligned learning journey that takes kids, parents, and teachers to practical action in schools, on the ground, in their local communities"*. Community Educator and Advocate 3 agreed that these outdoor learning spaces instil the importance of food security to children:

because they're not only learning where food comes from, they're learning to care for it, they're learning to develop a sensitivity for the environment, sensibility for the environment... practicing social skills while they're doing it, and teamwork.

Disaster Resilience Officer 2 reflected that: *"one has to just wonder how civic the culture of education really is. But schools are absolutely the way we cultivate cultural change, shifts, and understanding of resilience and the challenges ahead"*. School Educator 3 agreed that this approach *"definitely can be a part of building food*

security because... you are engaged with transferring knowledge around growing food”.

For Disaster Resilience Officer 3, community gardening with adults is also about the re-skilling and the transfer of food knowledge that is at risk of being lost. She stated that *“I take a lot of the knowledge I learn there from other gardeners and people and bring it back to my own backyard. So the more people who have those skills, the better”.* For Disaster Resilience Officer 3, community gardens make it *“more accessible to people if it's in an urban village environment. Because often the community gardens aren't accessible to people because they're out of the way, they're out of normal foot traffic pathways”.* As Community Educator and Advocate 3 stated, *“Look at Cuba, for instance. The community lives around that”.*

Interviewees agreed that local villages with food gardens contribute to community empowerment and participation. Providing access to opportunities to participate in gardening experiences was widely seen as an important tool for empowerment, participation and shared responsibility (Hourigan, 2011; Twiss *et al*, 2003; Vaske and Kobrin cited in Blair, 2009). Interviewees concurred with Davis and Ferreira's (2009: 67) call for a “webbed network approach” to sustainability education in schools, whereby “all participants are recognised as ‘knowing experts’, learning and acting together”. For example, School Educator 1 agreed that Kitchen Garden projects, such as those supported and facilitated by *Stephanie Alexander* and *Growing Communities*, are great models for children's *“food enjoyment and appreciation [which] also connects the kitchen garden to the actual kitchen plate through a learning process”.* For School Educator 1, any model is desirable that promotes *“that sort of connection of touching the earth and saying, right, this is where you can grow things... the sense of enjoyment, play, learning and eating from the garden”.* Local Government Officer 2 observed that *“informed kids”* can be influential *“at changing their household's behaviour”.* When kids are growing things at school, *“they're eating what they've grown, they're dealing with their waste, because they've got composting and worm farming, so they're setting up their own systems. Often kids teaching their parents is huge”.*

Consistent with the literature, interviewees agreed that empowerment to participate in garden projects is important (Armstrong, 2000; Doyle and Krasny, 2003; Driskell, 2002; Hart, 1992; Lekies and Sheavy, 2007; Lekies *et al*, 2006; Skelly and Bradley, 2007; Twiss *et al*, 2003). According to interviewees, this involved the need for

democratic spaces for voicing views and problem solving. School Educator 2 stated that “*student voice is important to us... Students are encouraged to have a real voice in decision-making processes at school and in the community*”. He further argued that:

These children are going to be democratic citizens of our society... They have to start to learn what democracy is about so we have structures within our school that allows them to have a voice. We have a student council... class meetings [which] are initiated by the teacher but are run by the students... we have a number of leadership positions... school captains... [language] captains... music captain... environmental leaders... I believe there's no use in giving a child a leadership position unless there is something that goes with it, a responsibility [and] a role, somewhere where they can have a voice.

For Local Government Officer 3, access to education on seed knowledge is particularly powerful to gardeners who learn that they can take control over the reproduction of their food. Networks of seed savers promote a culture of information and seed sharing which promotes the sense of food sovereignty and the ability to voice what they need. Local Government Officer 3 stated that seed savers are “*storing all these seeds. They feel it is so precious... We save it and just swap. Have you got this? Have you got that? No, we haven't. I'd love some*”.

Networks where relationships are based on common ground were seen as important for helping each other meet their needs and find avenues for making that happen. For School Educator 2 reciprocity is an important feature of turning potential problems into solutions. He stated that “*we don't see anything as a problem [but as] a challenge and you overcome it... I think it's just being open to the fact that everyone plays a part in what you do*”. For example:

One of our local people who is a parent at the school who does garden maintenance, he has come in and said, look when I've got lawn clippings and things like that do you want them? Love them, so we've actually cut his costs because he doesn't have to take it to the dump. He comes here and drops that off. It becomes - the nutrients keeps our garden growing. The other side of that is then if we need something done he's quite happy to come and spend a little bit of time to clear something for us, so it's building partnerships or relationships with people within the community.

School Educator 2 continued that “*schools are very good at asking for things, but what do those people get back? You can burn a lot of bridges if you're not giving*

back to those people... a lot of times schools have been very good at the one-way street". School Educator 2 said we have similar arrangements with many parents: the local council; local businesses such as the coffee shop, fruit shop and bookshop; and other community groups such as the Green Army. He advised that "I think it's that two-way, it's that symbiotic relationship that you need to build".

Issues with the main argument: Public liability, funding and curriculum hurdles

Dealing with bureaucratic processes (Patel, 1996) and the lack of government planning and support programs that could promote local food procurement policy in urban spaces (Jamison, 1985) were reported in the literature. Local Government Officer 3 argued that one of the biggest challenges for setting up community gardens is "*public liability insurance*". She stated that, groups are normally covered by not-for-profit organisations, however, many areas do not "*have any not-for-profit organisations to be able to cover them for the public liability insurance*". This is of particular issue to gardens as they not just open for set hours, they "*are open on a 24/7 basis... where anyone can go in and out. So, that's where the tricky part is*".

Due to low levels of urban food awareness in land-use planning (Howe, 2003) and the subsequent lack of land-use rights and zoning for urban food (Moskow, 1999) grant application processes can be problematic. Community Educator and Advocate 3 said the grant application process with city councils needs a "*much easier way*" of making resources available to garden projects as they can be cumbersome with a lot of paperwork and hurdles to jump through. Community Educator and Advocate 3 argued that:

the guidelines for supporting community gardens... it's unbelievable. For a community group to access \$5,000, to start a community garden... the amount of work that they've got to do, I just find it unbelievable. Is it really trying to create more community gardens, those guidelines [and] those policies they have in place, those funding avenues that they put up?

For Community Educator and Advocate 1 "*many community gardens don't have an income stream beyond maybe an allotment fee of a small amount. You rent a particular plot, and there's sporadic government funding for various things, government grants*". Those grants are "*mostly for infrastructure development, nothing for ongoing wages, employing people*".

Interviewees provided insight into the challenges of creating school gardens. Community Educator and Advocate 3 stated that you need a “core group of people that are going to drive it” and “funding”. School Educator 3 stated that “for schools, the major barrier is the resources that may or not be dedicated to such a project”. For example, when parents and teachers want a school garden, they need to “find the money to do it, and then employ... an organisation to go and facilitate that process” of garden design and integration with curriculum. School Educator 3 said that such organisations facilitate the “writing lessons with a focus say on science and maths, or science, or English and history so that groups of teachers can start to work the food growing curriculum embedded into their lessons”. This is particularly helpful as School Educator 3 pointed out teachers “might not have any knowledge around gardening”.

Additionally, Community Educator and Advocate 3 argued that, with the “performance-based curriculum” teachers are concerned about demonstrating that they are performing well, and the gardens are often “an extra thing that the teachers need to work with”. School Educator 3 added that the “NAPLAN driven outcome” approach limits time for gardening which is predominantly seen as outside curriculum objectives. School Educator 3 stated that “recognition for some time allowance for the teacher” is important as you “may have an enthusiastic teacher who's very time poor” and is dedicating lunchtimes for garden projects. Ultimately, School Educator 3 advised that:

There's a long way to go, in terms of the success of how to get those schools sustainable or sustainably growing food... the first challenge for school is how do they actually... incorporate a food growing curriculum and have a garden. Then what can they do with that garden? How can they sustain it?

School Educator 2 pointed out that formal reporting of the benefits from outdoor learning is not straight-forward but may be captured under behaviour management. He asked:

How do you collect data on something like that, what's your baseline, what [are] the changes? A lot of it is I suppose the soft things. It's about that social and emotional change that you see happening. It's about the fact that... the kid who is maybe socially having problems, is able to carry a chook around and talk to the chook and is quite happy. I think I can easily say that our behaviour management is very low, we don't have a lot of issues.

For Local Government Officer 1, community and school gardens are about *“bringing food into community awareness... I think it's about that lovely empowerment that they can be growing things”*. Interviewees were particularly concerned about the power to participate in such activities. Empowerment and participation are closely linked and intertwined with networks, building relationships, social inclusion and opportunities for learning around food. However, school garden projects can be compromised due to competing visions of urban spaces (Francis, 1987) and the relevance of gardens given other curriculum priorities. Worldviews are indeed brought into tension. Habermas’s (1987) argument that communicative action, based on speech forums as praxis for consensus and negotiation, provides an avenue for modifying such views and leading to collective action.

Conclusion

This thesis hypothesised that a re-thinking of governance systems is needed. The potential wickedness of food security risks and the challenges of building resilience at the community level are truly complex. It has been argued that this re-thinking requires a critical consideration of the contributions that locally-driven garden contexts hold for building shared responsibility for local food procurement and social resilience. As demonstrated in this chapter, both the academic literature and the interviews conducted for this project support this hypothesis. However, the tensions in worldviews, as argued by the practitioners, demonstrate concerns with the main argument of this thesis that community and school gardens can function as hubs for building resilience and food security. Based on an integrated results and analysis of the interviewee data, this thesis proposes that:

- 1) *You don't need to re-invent the wheel - demonstrations in community and school gardens as hubs for building locally-based resilience and food procurement already exist;*
- 2) *Worldviews concerning the legitimacy of community and school gardens to function as hubs will produce tensions and power struggles; and*
- 3) *Communicative action will legitimise the diversity of voices and set up a mechanism for consensus and negotiation.*

These propositions are congruent with the three NSDR actions for leading change and coordinating effort for disaster resilience. First, the NSDR aims to understand *and* mitigate risks to disaster resilience. Community and school gardens have demonstrated precedents in organised and networked relationships for socially

supporting each other through programs of inclusiveness and food literacy. Second, the NSDR aim to form partnerships and networks to share responsibility for disaster resilience can only reflect the resilience-building activities which are included. Barriers exist that prohibit those who are willing to participate in their own resilience from sharing a greater degree of responsibility. Communicative action will give voice to the various calls for, and concerns about the role of community and school gardens as hubs. Finally, is the NSDR aim for government to help “support community efforts in resilience-based planning, including resilience-building activities, disaster risk management... and capability development” (COAG, 2011: 2). Government will need to remove those barriers in their preparation and provision of guidelines, information and other resources. Planned avenues that seek to enable “essential resiliency” (Morrow, 2008: 12) will require an engagement with communicative action. This further requires a re-thinking of governance systems. As will be discussed next, business, community and government all have roles to play in providing meaningful action.

Chapter 10: Mobilising synergies and shared control: Practitioner's views for governing complexity

Introduction

Network Governance aims to scrutinise the potential for inclusive and holistic network relationships. By including the community level and Non-Government Organisations (NGOs) in the well-established alliance between government and the food industry, responsibility can be shared for food procurement and social resilience. Communicative action aims to facilitate the ability of alliances to cut through disparate worldviews and find the workable common ground (Habermas, 1992). The research question addressed in this chapter is: *What governance opportunities and challenges are posed for the democratic management of networks and relationships?* The aim is to review the collected interview data and compare it to the literature to reveal how government, business and communities are implicated in the management of the necessary networks.

The interviewees were asked: *What should business do about these issues?* Theme 1 answers this question in two parts. First, interviewees concurred that corporate social responsibility is important. Second, interviewees agreed that partnerships with local businesses are important for maintaining local economies and local food. Second, interviewees were asked: *What should communities do about these issues?* Theme 2 outlines the various forms of community involvement which provide a range of opportunities to participate. Communities were also found to provide demonstrations of community-based resilience projects.

Finally, interviewees were asked: *What should government do about these issues?* Theme 3 outlines four government portfolios of interest. First, local government planning is discussed in terms of: facilitating shared control and responsibility those who want it; changing the rules and removing barriers; the importance of community awareness raising; community consultation and engagement policy; trialling neighbourhood parliaments; participatory budgeting; local food procurement policy; and using demonstrations to inform council planning. Second, community health is examined in terms of the usefulness of demonstration projects and the partnership approach. Third, the role of State-run education in Queensland in formalising and integrating outdoor learning into plans and curriculum is outlined. Fourth, the implications for disaster resilience relates to the possibilities for local contingency

food plans for disasters. Finally, the issues with these government actions include: a return to core business by the Queensland State government; the role of the mainstream media; changes to financial priorities; and addressing a lack of commitment to long-term community empowerment.

Theme 1: What should business do about these issues?

The interviewees were asked: *What should business do about these issues?* As discussed below, interviewees concurred that corporate social responsibility is needed, and that community partnerships with local businesses are important for maintaining local economies and local food.

Corporate social responsibility

Interviewees agreed that the food security positions supported by community-based food plans should be included in government and industry priorities (Campbell, 2009; Creative Commons, 2011; Parfitt *et al*, 2012; PHAA, 2009; Small and Martinez, 2012; TFSC, 2012). For Local Government Officer 4, the question for the food industry was “*how do you balance the economic drivers... [with] the community drivers and social outcomes?*” Local Government Officer 2 said that “*I would [like] to see our supermarkets stepping up and... giving the community the information they need to make a better choice*”. Similarly, Community Educator and Advocate 4 thought that “*if businesses just respond in a human way rather than just what's the financial imperative for them as a business*” that would be helpful. Disaster Resilience Officer 2 agreed that business needs to reflect on the manner in which it is embedded within the social fabric:

Business is a super important part of our life because it's where we work, and delivers a lot of the built environment of food and energy and everything else that we kind of live within our day-to-day lives... Business [needs] to reflect on the longer term importance of superseding... short-term profit seasons and electoral cycles and media cycles, because the weight of business is so important in the fabric of our lives in the west.

All interviewees acknowledged the benefit of corporate grants in supporting a variety of community-based initiatives. In terms of community garden grants, Community Educator and Advocate 2 argued that the conditions for grant approval are largely based on infrastructure development rather than human-centred activities. She

stated that *“those corporate sponsorships”* are for *“the buying of tools and seeds... It’s about infrastructure development”*. Community Educator and Advocate 3 agreed that corporate funding needs to be *“part of a larger approach to developing community gardens [as] an initiative that is about food security and the environment”*. Conversely, School Educator 3 said that the *“National Australia Bank’s Schools First program is doing some great work, where businesses are partnering with schools [on] projects rang[ing] from sustainability to food growing to different sorts of initiatives”*. Bunnings was often cited as a helpful business particularly for gardening advice. School Educator 1 provided an example of corporate grants used for planning sustainability rather than infrastructure:

One of the recent grants was for schools, not to do the actual hands on implementation, but to go back to that planning part... They had schools grants through Coles Landcare, Yates, I think it was, was the contributor... I think it was \$500 to create a school environmental management plan, which is looking at the whole school approach to sustainability, including whatever... you want to focus on. So they actually gave schools \$500, and that would release the teacher for two days to sit down and do the planning process. That is exemplary for a... corporate to look at not just planting trees or planting gardens, but to actually do the planning towards long term vision... Well, do the planning process first is critical. So that was one corporate that did that.

Many interviewees agreed that corporations seeing themselves as good corporate citizens are an important part of corporate responsibility. Disaster Resilience Officer 2 stated that *“these large enterprises... [need to] take responsibility for current obligations in the context of a longer term challenge[s]. That, to me, is the single most important thing”*. Disaster Resilience Officer 1 suggested that *“Westpac for example... have done a good job... they’ve supported the disaster resilience index... I think that’s the way to go”*. However, Local Government Officer 2 stated that corporations need to be *“more responsible for the products that they produce and how they’re produced”*. Furthermore, she argued that sponsorship of *“community action”* is an avenue for taking responsibility. School Educator 1 argued that through grants, corporations *“get their logo and their image out in the community”*. Through token funding they can therefore *“see themselves as good corporate citizens”* through *“those little dabbles”* into school tree planting, sporting equipment and ‘healthy’ food. Many interviewees concurred that corporate funding does some good despite the largely tokenistic size of the funding. On a more creative note, for School Educator 2’s garden project, he stated that *“I would love to have someone from a big business coming and working with me at looking at what our strategic direction is...”*

because obviously they have skills that I don't have". Communicative actions aims to facilitate the ability of participants to talk among each other, and as they see the differences and the common ground, they can arrive at mutual understandings and common interests (Parkin, 1996). In terms of moving from tokenism to deeper community action, Local Government Officer 1 speculated that:

Woollies is now sort of coming out as not only being the fresh food people; they're the Australian fresh food people... there's no reason that an operator running a micro-urban farm couldn't be... going directly to the supermarkets and saying, have I got a fresh food deal for you... I think there'd be quite a lot of synergy in it.

Partnerships with local business is important

All interviewees agreed that the availability and support of local commerce (Mileti *et al*, 1995; Powell *et al*, 2007b) is important for building local partnerships (Salvation Army, 2012c). Local Government Officer 3 said that local businesses such as "landscape suppliers" such as are important for community garden projects through discounts, donations and helpful advice. School gardens were seen as demonstrations of successful partnerships. School Educator 1 found the Nurseryman's Association helpful due to their support of 'pilot school gardens':

where they looked at century gardens... veggie gardens... Munch and Crunch Gardens... Kids Grow... They had different names for them... They had all the curriculums based on the learnscaping philosophy. They had these modules that connected to the curriculum, based on learnscaping, and they had an action outcome, which was developing a garden... [The] modules of units... [were for] lower primary, middle primary, upper primary... [and] lower secondary... They were supported by the Nurseryman's Association.

School Educator 2 agreed that local business partnerships are integral to successful school gardens. School/local business partnerships were diverse, for example, "Downtown Toyota [supported us with] our trees to plant and our kit to go with that... [T]he coffee shops are keeping the coffee grinds or Battery World is helping us to recycle batteries... it's being open to supporting schools. School Educator 3 cited the success of the school "partnership program" with the Biological Farmers' Association (BFA) called the "Organic Schools Gardens Program" whereby "business and volunteers in the local area... support schools through financial assistance... technical assistance, helping to build a garden bed or advice around business".

Disaster Resilience Officer 3 asserted that the “fluidity” of local business is of particular importance:

I think that if you do want to be more resilient, you need to have a lot more fluidity in your structure, and just... stronger, smaller local businesses. I guess I'm thinking fluidity in terms of being able to change or adapt to situations quite quickly... if you have really strong local businesses [that] are linked into a strong local business network, I think that enables for a much quicker recovery from disaster.

These suggestions and observations from community, Non-Government Organisations, and government practitioners demonstrated that large and small businesses have important roles to play. These practitioners provided thoughtful ideas to pursue which promoted partnerships with them rather than competition. They demonstrated that building resilience and robustness involved inclusion of top-down approaches (government/industry alliances) with bottom-up approaches of “sustainable local economies” (Mileti *et al*, 1995: 117).

Theme 2: What should communities do about these issues?

Interviewees were asked: *What should communities do about these issues?* Theme 2 outlines the various forms of community involvement that provide a range of opportunities to participate. Demonstrations of community-based resilience projects were agreed to be important.

Various forms of community involvement provide a range of opportunities to participate

Interviewees agreed that what constitutes ‘community’ is textured and diverse (EMA, 2009; Reis *et al*, 2013 forthcoming; UKCO, 2010). Community Educator and Advocate 3 questioned: *“It's really hard when you speak of communities, because what do you mean by community? What communities can you speak of?”* Disaster Resilience Officer 2 concurred that the nature of community is far more reaching than geographical location:

If you look at my Facebook page and you actually draw lines to where my friends are, I think it's like 112 countries. That's my community, right... We all travel, we have family around the world, we have business and research colleagues [and] we work in organisations... we are globally connected...

That's just a reality of what it is to live in the age of networks. So, we have to shift our sense a little bit about this thing - what is community?

Due to this diversity, interviewees agreed that there are a variety of ways in which communities can participate ranging from the very informal and personal to the very active and politically engaged.

Informal and personal levels of involvement

Interviewees reported that, on a more personal note, looking out for each other was important (Kingsley and Townsend, 2006; Teig *et al*, 2009). For Youth Worker and Educator 1: *“Living in community, we are responsible for each one who lives in our community. So it's about responsibility. It's about looking after your neighbour and... everyone has ownership”*. Disaster Resilience Officer 2 emphasised that we need to *“make sure that we do know who is vulnerable. In the case of a heatwave, who should we be checking up on, who needs supplies?”* Disaster Resilience Officer 1 saw the importance of this in times of disaster, stating that:

I think communities should do what's [with]in their capacity. Individuals ought to clean their gutters out... they should take a responsibility for disaster... Then I think that it's quite hard to expect a poor old person to clean out their gutters, because it's life threatening... So communities should deliver to those people, whose capacity to help themselves is less.

For Local Government Officer 2, passing on family knowledge is particularly important: *“We, as residents, have a responsibility to pass on our knowledge to others, whether it's to our family or to our friends but to share that and to get back some sense of community”*. She reflected that: *“Back in my grandmother's day she explained to me that life revolved around the gardens that everybody had. You knew that Dorothy had bananas and you'd go and get them from her”*.

More organised levels of involvement

Teamwork was also seen as important (Armstrong, 2000; Sampson *et al*, 1997). For example, Youth Worker and Educator 2 stated that *“pooling resources”* is crucial. Likewise, Youth Worker and Educator 3 stated that: *“It's about working together”*. Local Government Officer 2 saw community involvement behind a cause as important, stating that it is *“a very powerful thing, when you've got the community*

pushing for the changes". Community Educator and Advocate 3 advised that community gardens need a group behind it, stating an example:

We may live three houses away from each other and it's a little corner thing, space. We may want to use it, but it's just you and I. Although it's a beginning, but you need that core group of people that are going to drive it. It could be three, four or five, but it has to have that commitment.

School Educator 2 agreed that *"the future of our communities are our children"* and *"it takes a village to raise a child"*. In terms of school communities, *"clusters of schools... can work together"* for the benefit of children's education. For example: *"We worked with Greening Australia a couple of years ago in a partnership where we [were able] to get funding from Boeing which was a \$70,000 funding for a cluster of schools"*. School Educator 1 agreed that *"as soon as you build that bridge to the community and have that broad partnership approach to it, then you've got success after success of [the garden] working"*. This is consistent with Davis and Ferreira's (2009: 67) call for a "webbed network approach" to sustainability education in schools whereby "all participants are... learning and acting together around contextualised issues and problems". The webbed network approach is resonant with communicative action in that it "offers a change process built on participant engagement, capacity building and power-sharing" (Davis and Ferreira, 2009: 67).

Formal and politically engaged levels of involvement

Consistent with the aims of communicative action, many interviewees agreed that formalised structures of involvement lead to a sense of empowerment to engage in increasingly more organised ways (Bellows and Hamm, 2003; Emmons 1997; Hourigan, 2011; Howe and Wheeler, 1999; Jenson, 2002; Melchior and Bailis, 2004; Stocker and Barnett, 1998; Volk and Cheak, 2003). Community Educator and Advocate 4 asserted that: *"I don't think it's up to the government in many respects. I think as a society we look to the government too much for solutions. We've got now a culture that just blames the government for everything"*. Furthermore, she found through her involvement in a local community association that *"a community creates a community for itself"*. She clarified that:

Our mantra in the community association is that we don't actually go and do anything to create community ourselves. Community members come to us with an idea and we help facilitate that idea to come to life. So we'll provide them with networks, we'll help promote it, we might give them leads on who to talk

to, resources they might want to look at using within the community, grants they might want to access. By taking that approach, it's very hands-off but it's facilitative.

Local Government Officer 3 stated that where communities demonstrate commitment and organisation it is more helpful for organising a community garden space. This is important as *“every single garden is different and... it's always changing, people with different ideas”*. Forming *“a little committee”* with *“a garden co-ordinator”* is helpful to give *“a point of contact”* for a council representative. Helpful actions included an initial meeting with a council representative and emailing the minutes of monthly garden meetings with the plans outlined. This helps council to gauge the community's expectations are, if they're going to be keen, and serious about it. Local Government Officer 3 advised that *“Commitment is very, very important”*. Community Educator and Advocate 1 concurred that:

... local government - Brisbane City Council are trying to coordinate what's happening in 350 community gardens around Brisbane. It's going to be extremely difficult. It will be the few blocks of people that are around that particular community facility, which will raise the issues, debate the issues, sort the issues out and get on with doing something about them. I think it's that intensely local level.

Local Government Officer 3 advised exercising purchasing power by choosing to shop locally. Disaster Resilience Officer 3 suggested that *“you'd really have to see community demand a broader public policy shift or a focus”* on food localisation. Local Government Officer 1 concurred that communities are the best places to mobilise people:

Councillors are very responsive to their constituents... If they understand that the community are really keen to have more community gardens... that can help influence budgets, it can help influence staff allocations, it can help get a trial project off and running... Let's make that part of business as usual type of stuff. So for me the power of the community is them tapping on the door of the local councillor or letters to the Lord Mayor; what are you doing about this? How are you positioning us in line - we've got statements for example, in the climate change energy action plan. What are you actually doing about that Lord Mayor or Councillor or whatever?

Deliberative democracy

A particular strength of Governance Networks is their inclusive approach to public debate (Blanco *et al*, 2011: 302). Many community-based participatory innovations have emerged such as: the avenues for deliberative democracy (widening the scope for discursive contestation in society) (Dryzek, 2000; Hajer and Wagenaar, 2003); calls for diversity and flexibility in governance (Nyseth and Ringholm, 2007); and restructuring urban politics and regimes (Goodwin and Painter, 1997; Jessop, 1997). The lived experiences of community members therefore holds potential to inform democratic politics (Forester, 1985). Disaster Resilience Officer 3 advised that communities have a lot of power:

It's a community who collectively decide where they want their community development to go, how they want their community developed, and then they work together to vision that and implement it, to take action on it. They might, in that process, involve external stakeholders, like government or business or other local organisations, but the ideas and the decision-making will rest with the community.

Community Educator and Advocate 4 strongly suggested that community empowerment is closely aligned with *“the idea of participatory democracy”*. She asserted that *“there's a growing movement for communities wanting to be more self-determining about how their community operates and how it looks and what happens. There are a couple of examples in India where they've started neighbourhood parliaments⁴⁷”*. She continued that *“there's also the idea of sociocracy... which is basically another word for democratic governance, dynamic governance”*. This she argued that this is a process of *“making decisions where everybody gets a say. It's not consensus decision-making, it's more consent decision-making. So as long as no one has any major objections to a decision being made... it allows you to make quicker decisions”*. Community and school gardens were agreed by interviewees to provide demonstrations in community-based resilience projects that other groups, organisations and councils can learn from.

⁴⁷ Neighbourhood parliaments are another term for deliberative democracy whereby decision-making is based on deliberation, consensus and majority rules rather than voting. Decisions are made directly by citizens.

Communities can provide demonstrations of community-based resilience projects

All interviewees agreed that communities can provide demonstrations that could be used as case studies to be replicated in other places. Highlighted areas included community and school gardens as pilot studies for local council and precedents which have been set by broader networks. In terms of community and school gardens as pilot studies for local councils, this approach has already been adopted by Brisbane City Council by providing an on-line resource of garden groups and networks (BCC, 2013) (see Appendix 9). School Educator 1 agreed that communities can “advocate, perform [and] provide case study opportunities” in school garden demonstrations. Their value is to:

Provide evidence of case values, where's there's actually an example of a community garden... Offering case studies, being advocates for and networking in community groups, like Growing Communities... Northey Street and... Stephanie Alexander networks... examples where there's... a demonstration school [which has] other satellite schools that are doing things.

School Educator 3 outlined that: “We have a very active and progressive local community, which has a lot of school gardens and community gardens and local initiatives in the area... I’m interested to see... whether that can be replicated in the other local councils”. School Educator 3 highlighted that the Biological Farmers’ Australia (BFA) Organic School Garden Program has been working on the idea of:

running a pilot program [whereby a] digital map... shows which school around Australia have got school gardens involved in Organic School Gardens programs... it's really about providing that knowledge to people and people don't have to always reinvent the wheel.

In terms of precedents in broader networks, Community Educator and Advocate 2 suggested that BOGI, *Brisbane Organic Growers Inc*, have a State-wide membership which is “an interaction of people who are already growing a lot of their own food sustainably”. Disaster Resilience Officer 2 suggested that broad-based networks have a role in raising community awareness:

Green Cross and millions of other community groups, researchers, local government, State government - there's a lot of awareness raising programs about... raising awareness... at this stage, is really super important... starting with that idea of connecting to each other with a shared awareness, and then what can we do as a local group, for example, to make sure that we are equipped to get through weeks without power?

Community Educator and Advocate 3 suggested that countries like Cuba set an appropriate precedent, where: *“They’ve been living in an embargo and growing their own food [do] national gatherings where people come and exchange seeds, and every space is used for growing food”*. He further suggested that *“community garden gatherings, Queensland community garden gatherings, national community garden gatherings. Initiatives like that could be supported”*. Community Educator and Advocate 2 concurred that: *“Early adopters are already out there learning more about growing food, sharing food. There’s a gradual rise in local food sharing systems and they’re not all commercially based... A lot of voluntary groups come together and share their harvest”*. Public participation is a key facet of the Governance Network approach and interviewees saw that this approach enhances shared responsibility for food procurement and social resilience. The goals of the shared responsibility framework as set out in disaster resilience literature (McLennan and Handmer, 2011) that are inclusive of public participation are also congruent with the aims of communicative action (Habermas, 1992). However, Local Government Officer 4 suggested that *“you need the skills and the knowledge. You need the opportunities for community to come together and make those changes. You need the policies and the environments that underpin that”*.

Theme 3: What should government do about these issues?

Interviewees were particularly animated and opinionated about what government can do to support their ideas. As outlined next, the government sectors of particular interest to them included local government planning, community health, Queensland State-run school education and disaster resilience. However, there are also key challenges involved. The issues with these government actions include: a return to core business by the Queensland State government; the role of the mainstream media; changes to financial priorities; and addressing a lack of commitment to long-term community empowerment.

Local Government Planning

A particular area of interest both in the literature and interviewee responses was the role of local government in planning for local services and infrastructure (Black *et al*, 2010; Frank *et al*, 20004; Gordon-Larsen *et al*, 2006; Inagami *et al*, 2006; Mujahid *et al*, 2007; Saelens *et al*, 2003) and how communities may be empowered to

participate in that process (Campbell, 2009; Creative Commons, 2011; Parfitt *et al*, 2012; PHAA, 2009; Small and Martinez, 2012; TFSC, 2012). Youth Worker and Educator 2 stated: *“Keep it local... your local businesses, local council, local government, local organisations, local schools”*. Disaster Resilience Officer 1 concurred that:

The capacity of small local governments [are that], they're more connected probably on the ground to individuals; it's less bureaucratic and so on. So I do think that's where government - and then according to all of the agreements that we sign up to, the State's job is to facilitate local government.

Avenues for communicative action featured highly in practitioner advice on ways forward for government. As will be outlined next, interviewees agreed on the importance of: facilitating shared control and responsibility with those who want it; changing the rules and removing the barriers; awareness-raising campaigns for the community; community consultation and engagement policy; trialling neighbourhood parliament; participatory budgeting; local food procurement policy; and demonstrations or precedents of good practice to inform council planning.

Facilitating shared control and responsibility with those who want it

Morrow (2008: 12) asserts that “people need to have faith in their government and trust that they are being represented fairly. This requires community involvement”. With this in mind, social justice can form an “interpretative framework to guide planning at all levels of government” (Vale and Campanella cited in Morrow, 2008: 12). The *National Strategy for Disaster Resilience* (NSDR) has advocated for a “new focus on resilience” that is based on an “integrated, whole-of-nation effort encompassing enhanced partnerships, shared responsibility, a better understanding of the risk environment and disaster impacts, and an adaptive and empowered community that acts on this understanding” (COAG, 2011: 3). Interviewees agreed that local government should facilitate shared control and responsibility (Reis *et al*, 2013 forthcoming). For Disaster Resilience Officer 1, *“the community garden model is a really good one. It ought to be made more accessible”*. She continued that *“one of the best things local government could do is to grease the wheels of community - existing community organisations. Not set up new things, just assist them”*. Community Educator and Advocate 4 supported this argument on government’s facilitation of shared community control because: *“People often know the answers to their own problems... they're the doers in the end. That's where the creativity and the*

innovation lie". Community Educator and Advocate 3 advocated that local councils need to work with organisations already involved with gardening projects:

Why re-invent the wheel? And they're always doing that... they go out and re-invent these things. So community gardens, there are two or three that are very successful in Brisbane, and they have educational programmes, and these other organisations that have been set up to promote community gardens. Why not support those organisations and allow them to? It could be a joint process, but it's like the council wants to retain control of it all... if those skills are within the community... why not support them and allow them to do it?

Changing the rules and removing the barriers

Communicative action permits us to assess what social actors do in variously structured situations (Forester, 1985). As such, it also allows us to investigate the threats to participation and the possibilities for empowerment to participate (Parkin, 1996). Policy Networks are focussed on their own relationships with cohesive and stable policy communities (Marsh and Rhodes, 1992). These arrangements set up rules for engagement that set up barriers to outsiders (Blanco *et al*, 2011). Local Government Officer 1 suggested that access to local food *"is important and we need to put some resources to it... we just need to start thinking about things differently and creatively, to be quite honest"*. Local Government Officer 3 argued that council needs to *"draw up new public liability to cover those... smaller groups. So they can go and have a garden and have council cover that cost... I was hoping that it could happen a lot sooner, because with the habitat... [the] Council [does] cover their public liability"*. Local Government Officer 1 continued that:

We need to look at our own rules and regulations to say, well that's a barrier and it's a barrier for all the wrong reasons. We need to get rid of that in one way, shape or form... We need a different response. So we can then also have a look at the rules and regulations that we're putting in place, to then help facilitate a different way the community can operate... Then from a council officer perspective, having recognised that that's a good way forward, I can then maybe help get rid of some of those barriers and make it easier for people to come in and do the right thing later on.

Importance of community awareness raising

The analysis of three recent Australian disaster inquiries⁴⁸ by Howes *et al* (2012b) revealed that programs for raising community awareness is a well-established practice in disaster risk management. It is a particular strength of Policy Networks to disseminate 'better' information to communities. In this way, they play an important role within the communicative action framework by making clear the complex circumstances that entail public deliberations (Bohman, 1996) and promoting cooperative behaviour (Ali, 2003). Local Government Officer 2 argued that *"that's one of the roles that government plays in helping people making a good sound decision... and giving people the tools that they need to do it themselves"*. Some interviewees cited the success of the water awareness raising campaign on changing behaviours⁴⁹. For Disaster Resilience Officer 1, it's hard to get people behind change *"until they feel the pinch"*. She asserted that *"you'd have to... demonstrate it to most people that you're in really hard times - a bit like the water restriction. People can step up... once they have it demonstrated"*. Community Educator and Advocate 1 concurred that the success of government education campaign on water is a good precedent for behaviour change:

I was stunned at how effective the water campaign was here... Feeding people the facts... If you give them factual information they will act on it by enlarge. Yes, there's still a massive amount of denial, a huge amount of denial, but there's glimmerings of movement in the right directions... [This is] the best example of a social change process based on giving people the numbers, that I've come across, I think it's brilliant.

However, Local Government Officer 2 argued that *"government should involve the community more closely in understanding what the issues are and recognising the impacts of our current agricultural and food systems, because they are so complicated"*.

⁴⁸ The inquiries included: The Victorian Bushfires Royal Commission (VBRC, 2010a, b, c), the Perth Hills Bushfire Review (GWA, 2011) and the Queensland Floods Commission of Inquiry (QFCI, 2011, 2012).

⁴⁹ This water education example refers to a successful campaign by the Queensland State government during the 2001-09 drought that encouraged people to more than halve their water usage by adopting simple conservation measures.

Community consultation and engagement policy

Community consultation and engagement is integral to communicative action. Policy Networks are particularly weak, however, at including communities in consultation and engagement outside of formal procedures for making suggestions and complaints (Ploger, 2001) and formal channels of deliberations such as public hearings, discussions and debate, meetings and the use of newspaper articles (Nyseth, 2008). The need for more effective community consultation was agreed by interviewees. For example, Local Government Officer 4 stated that community consultation is: *“Really, really important. From a council perspective... they [are] meant to develop a community engagement policy. The plans that they implemented [are] then meant to reflect the community engagement process”*. Many interviewees agreed that government needs to participate as facilitators not controllers of community innovation. Community Educator and Advocate 4 agreed that government participation in planning for community initiatives should be one of facilitation and no more, stating that:

Creating community is something that a community creates, not a government department or a housing development company or you know. I think it's something that the council can help facilitate but certainly they should keep their hands off when it comes to prescribing how communities should be formed.

Disaster Resilience Officer 3 agreed that local governments *“need to be more accountable and transparent than they are, in their processes”*. As Nyseth (2008: 499) argued, Policy Networks are often “closed, elitist or narrow in their functional scope, accessible only to a small group of people”. Additionally, they “produce legitimacy problems because of their lack of transparency” (Nyseth, 2008: 499). Disaster Resilience Officer 3 suggested that:

Community-controlled development should be something that's initiated by community and then they go to the government as an external stakeholder supporter... Where government does engage with the community, it should do it in a transparent and accountable process, so that people feel like their input is actually taken on board, and they need to enter a more equal decision-making relationship with the community.

Conversations can contribute to people's efforts to reach understanding between each other (Parkin, 1996). Some interviewees noted the importance of community development officers in facilitating better face-to-face communication. For Disaster

Resilience Officer 3, we “need more community development officers for action on community development. They need to be prepared to interface with the community... [to] respond to community members' needs, not being government-directed... be more responsive”. Local Government Officer 3 agreed that “community development officers are fantastic in what they do” for community gardens because they “can gauge where they're coming from, get to know them as a community”. Furthermore:

the community development officer will be able to assist them, or connect them up to other community groups. Or if they do need a hand with some grant application, then that's where they stand in... [they will] be there if they do need any other assistance.

Local Government Officer 2 believed that “as someone who works in government with the community, the most important thing that I can do is enable people to do it themselves... I'm very fortunate in that we get really good face-to-face interaction with people”. Local Government Officer 2 also reported on the importance of sustainability officers at sustainability events.

Trialling neighbourhood parliament

All interviewees agreed on the merit of government seed-funding of trials in community-based innovations in communicative action. Disaster Resilience Officer 2 provided precedents in government, business and NGO support of “deliberative democracy”, including:

- 1) The “Democracy Foundation” in Sydney whose board includes “Nick Greiner, the former Premier of New South Wales, who is the head of the infrastructure task force in New South Wales”. They are “helping to work out where to build the roads in Sydney... by deliberating”. This, Disaster Resilience Officer 2 proposed, is “forward-looking and contemporary, not boring [like] something we did in the 1970s... we lift[ed] it above private politics”;
- 2) The “Danish Board of Technology” is a leader in “what you would call [a] policy integrated practitioner community”. They have “a robust set of methodologies for deliberation and the Danish parliament actually refers to them especially on scientific controversies to use them. They range from... café type debates where you go from table to table to what's called a consensus conference”;
- 3) “Green Cross Australia” did a “consensus conference... in 2008, looking at sea-level rise and humanitarian issues in the region”, and

4) *"Brazil, is a massive practitioner of deliberation, and the case studies out of that... was a particular town in Brazil - where, since 1993, they have invested \$170 million US dollars in a thousand projects all led by deliberation".* As Brazil is:

... a very large country, they are doing this at scale through the Internet. So, they have deliberations now, which reach over a million people that have an opportunity to vote, to learn, to debate, to share ideas and projects. Like, how cool is that? That's pretty cool, right?

Conversely, a weakness of Governance Networks, and hence communicative action, are the propensity to produce 'talk-fests' and ineffectual outcomes (Hill, 2009; Jessop, 2003; Stoker, 1998). Community Educator and Advocate 4 stated that *"it's not something that governments really readily want to embrace, you know? They're happy with the current system"*. Disaster Resilience Officer 2 suggested that successful precedents need to be promoted to government as there is a lack of knowledge of their existence. Community Educator and Advocate 4 made the following suggestion:

I think there's definitely scope at a local level to start trying these ideas out and I think it would be great for Brisbane City Council to... pick one community in Brisbane and trial a neighbourhood parliament... Bring people in to train people how to do it properly and just get them started and do a three-year trial of decision-making. It needs to be three years. It can't be like a six-month project. It needs to be a three or four year trial... it just depends on the will of the council... the perfect place to trial it, is to develop a local area plan for that community.

Participatory budgeting

Another way of overcoming the propensity for 'talk-fests' and ineffectual outcomes (Hill, 2009; Jessop, 2003; Stoker, 1998) is for communities to share in the budgeting of projects. This tailors the engagement to the outcome of the project. Disaster Resilience Officer 2 advocated that participatory budgeting worked well in New York City and in Brooklyn. She reported that:

The local councillor for Brooklyn allocated a million dollars out of his operating budget for the community to decide how to spend, and they had a series of town hall meetings and proposals and debates, and they came up with five projects that are each around \$200,000. One of them is an urban garden, and one of them is a compost facility outside of a major high school.

Habermas (1974: 3) argued that monological frameworks, rather than the dialogical, are no longer capable of relating to praxis, but only to merely to “goal-directed purposive action guided by social-technical recommendations”. Praxis is about application, putting the theory of the dialogical approach into practice. Disaster Resilience Officer 2 speculated that “*why wouldn't King George Square⁵⁰ have a huge veggie patch in the middle that people tend during the day and come home at night?*” She suggested that:

Brisbane City Council should really consider opening up a little bit of deliberation around it's local budgeting project, and [what] if the community saw that as an interesting thing?... It's about the deliberative model unleashing this kind of community scale engagement in civic life... Do it as an experiment... you will see the wisdom of the public if they are informed and allowed to engage. They will come back with practical comments and ideas, and that very engagement builds resilience about who we are and what our priorities are, and how we connect to each other... It is literally about, okay, can we think of contemporary ways of cultivating this idea of self-reliance and community engagement and value for money, and having a relationship to where your taxes go?

Community Educator and Advocate 4 asserted that one of the main problems are that people “*don't feel like they've got permission to do that*”. In light of this:

If there's anything that governments could do it's to actually say hey, if you've got an idea to create something or to innovate or provide a solution for your community, then here are some funds you can access to help you do that or here's some knowhow or some knowledge or something to help facilitate it. But it needs to be hands-off. It just needs to be an advisory role or just a very loose framework.

Local food procurement policy

All interviewees agreed that local food procurement needs a formalised and planned approach in line with community-based food plans (see Appendix 5). School Educator 3 agreed that “*School and community gardens could supply fresh food to communities... We don't need to wait for a plan. However, it may be better organised within a formalised plan*”. School Educator 3 called for a local government framework:

⁵⁰ King George Square is a central outdoor meeting place in the Brisbane CBD.

Given the success of the farmers' markets and also the success at a local level of community gardens, I'm interested to see how we can work within our local councils, develop a framework. So that we understand what's in our community and we understand where we can fit into it... It may open up a better, more transparent community if we had that sort of framework.

Speech forums are formalised frameworks for setting up mechanisms for reaching understanding among participants and providing avenues for consensus or negotiation (Habermas, 1992). Local Government Officer 4 agreed that the “*political commitment is important... otherwise it doesn't follow through*”. She said that a “*tool to engage that political commitment... under the Local Government Act*” is the requirement of councils “*to develop long-term community plans [which are] informed by community engagement processes*”. Furthermore “*one of the components that's incorporated in the community plan is around social wellbeing. So it gives the opportunity to say well what do we mean by social wellbeing?*” Local Government Officer 4 asserted that “*in theory, if a community had identified... those food security issues*” as part of their approach to social wellbeing, then “*the potential for that to be incorporated in the community plan is still there... a discussion would be within council, does that fall within council's remit and resources?*” Disaster Resilience Officer 3 agreed that:

We should have local procurement strategies for all public institutions, as a percentage of their procurement. For example, government and schools, they all source food for events or for tuckshops [etc]... A percentage of that should come from the local area, because then it supports economic viability of local business. It just means that you're able to grow food locally and have it profitable... You'd need a pretty multi-faceted approach, depending on the disaster that hits and where's going to be affected.

Demonstrations to inform council planning

Given that speech forums aim to address complex circumstances through public deliberations (Bohman, 1996) they have found merit in the area of cooperative behaviour as part of environmental planning (Ali, 2003). As such, planning practice benefits from integrating the learning from those processes (Hoch, 2007). Demonstration projects provide this kind of learning. All interviewees saw merit in the use of precedents to demonstrate to government what has been achieved in the past. Community Educator and Advocate 1 found that Cuba's local food procurement

approach “was a profound lesson for us in what can be done”. Local Government Officer 1 agreed that:

[Demonstrations are] a really good guide and a tool that then helps others understand, oh it's not that hard. I could sort of accommodate that, with a little bit of thought and effort and it just gives a whole variety of other ways that things can be brought in. So it's the sort of thing that I'd probably flick up to State government to say, why don't you think about something like this because at a local government level - yeah we can do it, but it's got much broader relevance to a whole variety of local government administrations.

Community health

Demonstration projects to inform community health

Demonstration projects have also found merit in the area of community health. Local Government Officer 4 agreed that demonstrations form case studies that can be used for policy learning (Hoch, 2007). For example, through proactive leadership and funding, these can be showcased and used as templates for learning within councils:

What we're seeing at the moment is a big change within council leadership... with the demonstration projects [we are] trying to identify... innovation... replicability [and] evidence base... not necessarily that hierarchy of real evidence, but looking at local community evidence... [These are] chosen on the basis that other councils will be able to learn from [them]. [We need] to identify what their key learnings are, and then explore opportunities to promote that to other councils. A case study template [is then devised] that gathers information from councils, about potentially what is best practice. Then [we] present that in an attractive way, so that councils have got a bit of a showcase for what they're doing. [This] highlights things like that integrated approach or that partnership approach, or that they've got leadership commitment. That's the format of the case study essentially.

Furthermore, Local Government Officer 4 suggested that as it is “really complex”, perhaps “the best that you can offer [are] snippets of ideas and examples and showcasing some of that?” Life-worlds are a complex and integrated dynamic between one’s life and the world (Habermas, 1987). And, if so, Local Government Officer 4 advised that:

... evaluation is really important... To give [councils] examples of indicators that they might take on board. Different ways of measuring things... being clear that these are the assumptions that you're making, when you put a project into

place. These are some of the indicators that you would expect would help you to meet those assumptions and achieve your goal. So looking at it from that perspective, as well as giving them some examples perhaps of behaviour change and - or intent to change your knowledge and skills. So that you're starting that groundswell.

This entails hearing how various participants interpret unclear situations, how understanding among members is influenced by these diversities and their effect on political orientations (Habermas, 1992). Community Educator and Advocate 4 agreed that evidence base should not necessarily focus on 'hard evidence' but local community evidence:

I'd like to see a study done on the social return on investment when it comes to a community garden and a school garden because it's not just learning and it's not just food resilience. It's actually building a community because it requires people to come together to make it work... I think the value that school gardens and community gardens have is really underestimated... I think people inherently know that informal relationships do a lot more than what it seems on the surface... What sort of impact, socially, does that project have? So how are people's lives improved or enhanced or made richer by having that there? What sort of connections are created as a result of having that resource there - social connections? In some respects, it would be hard to quantify that because how do you quantify making a new friend out at the community garden?

Partnership approach

Forming partnerships is a key feature of disaster resilience (COAG, 2011) shared responsibility (McLennan and Handmer, 2011) and communicative action (Habermas, 1992). Interviewees agreed that collaboration and the partnership approach was important if organisations and groups are to look outside their core business to address the complexity of social dynamics. Ideas were congruent with the NSDR call for more "integrated and coordinated" approaches given that we need an "evolving process to deliver sustained behavioural change and enduring partnerships" (COAG, 2011: ii, 3). For example, Local Government Officer 4 argued that "councils have got an emerging role... to step outside health service delivery, and look at the preventive role". Consideration of "a whole range of different perspectives [requires] working across portfolios". Local Government Officer 4 suggested that "knowledge groups" work across "silos... so that we can internally

start some of that dialogue” about preventative health and identify synergies. For example you can have linkages explored between the viewpoints of “the Youth Advisor... the Healthy Community Advisor and the Arts and Culture Advisor... Social policy... Healthy work place Advisor... [and] community development following recovery... So [you] work across portfolios as a knowledge group [and] look at where does social policy fit, from each of those different perspectives?” In this way Local Government Officer 4 questioned that it is important to consider, “how do we make sure that those links across portfolios [enhance the capacity to] think smarter... [and] how do you make smarter funding applications that maybe pick up two or three of those different agendas at the same time?” So, to incorporate food procurement as part of the preventative health picture, Local Government Officer 4 advised that:

It depends how [councils] interpret... [and] understand what the opportunities are within different council portfolios. So they might see [healthy eating] in terms of, as many do... the provision of sport and recreation facilities or services. Or they might see it in terms of... social inclusion... it might be part of the community development remit. Or it might be in terms of some of the more traditional public health fields of environmental health and food safety. Some also see it in terms of that broader physical activity, footpaths - those kinds of things as well - cycle ways, public transport. There's a number of councils that do active transport programs as well. So it depends how they interpret it. That often then depends again on that political leadership, and what their understanding of council's core role is, what the benefits are and what the flow on effect to their community is. Some of them will think social wellbeing again. If we're trying to contribute to social wellbeing then... healthy eating is part of that, or it's not.

In any case, Local Government Officer 4 suggested that a partnership approach will benefit from a three-pronged approach which promotes: 1) “face-to-face” dialogue; 2) “inter-governmental advocacy” that builds “relationships and discussions”; and 3) advancement of “training professional development, building new projects and... capacity”. Local Government Officer 4 speculated that Medicare Locals are an example of policy integration among different departmental agendas. For example:

The Medicare Locals, which are those... new organisations, are part of the Federal Government health reforms... [They're] looking at building their systems and capacity and communication with other parts of health service... So you might say well what have they got to do with food security? But you could say then if they're looking at preventative [health], then maybe that's another advocacy body or an advocacy role that they might have... Many of the

councils and local areas have good local working partnerships that bring together a range of... local partnerships... [such as] community health services, allied health... domiciliary nursing services... community organisations... private practice [such as] fitness providers... I don't know if there's room for food producers to be involved, but it's part of that mix at the local level... They're trying to work hard at that local level to avoid that silo mentality... So again there's lots of little initiatives that are happening that put together a jigsaw if you like, of that broader picture... So part of it is... looking at where food security sits within each of those different levers. So you're not looking at that issue in isolation.

State-run school education in Queensland

Formalise and integrate outdoor learning into plans and curriculum

All interviewees agreed that outdoor learning spaces benefit children's learning when they are integrated into the curriculum (Byrd *et al*, 2007; Salvadori, 2001; Somerset *et al*, 2005) and formal school plans (ARIES, 2009; DEWHA, 2009 and 2010; QESSI Alliance, 2005) (see Appendix 12). School Educator 1 suggested that there should be "a planning process around, not just an ad hoc approach, to the school gardens". Community Educator and Advocate 3 agreed that school-based "Sustainable Environment Management Plans (SEMPs)" play a part in this planning process, however, "it all depends to what extent they are supported". For School Educator 3:

There also has to be connection to curriculum. So ideally, a school garden program would have a formal structure, where students actually learn about food growing in connection with other subjects... So that type of approach to embedding food growing as a curriculum is the best way to actually have a sustainable program.

School Educator 1 agreed that the challenge of outdoor "learnsapes" is that "the whole planning process has got to be based on where it fits into the school's master plan. Where does it fit into the school's curriculum? That's critical. It's got to be driven by the school curriculum". For School Educator 1, the cross-curriculum priority of sustainability (ARIES, 2009; DEWHA, 2009 and 2010; QESSI Alliance, 2005) demonstrates the importance of an integral and holistic approach:

Now we're moving towards an Australian Curriculum, and there are elements coming out soon in the Health and Physical education area, where healthy lifestyles are critical, but also in the area of the cross-curriculum priority of

sustainability. So you can say, well having low food miles, food produced locally, in season, is going to have a sustainability element as well. So that will happen across all of the learning areas, but in particular... Science and Health and PE would be the... learning areas, with a cross-curriculum priority of sustainability.

Partnerships with Environmental Education Centres were also seen as important. School Educator 1 stated that: “Outdoor and environmental education centres... engage students... outside of the classroom... [Those] learning experiences, beyond the classroom [were found to be] significant”. School Educator 2 agreed that: “Queensland is a leader in that, they are essential for what we do and it's the relationships which you build with those people... The knowledge that those people have is incredible”. Furthermore, School Educator 2 asserted that these centres have emphasised “the fact that experiential learning is an important part [of] pedagogies. There's a lot of reasons why they need to be there”. School Educator 2 asserted that is it important that with “Education Queensland's interpretation of the national curriculum, [it does not] forget that... the environment is an important part of [children's] learning, that you cannot do everything in a classroom. You need to get them out and move them around”.

School Educator 1 argued that Commonwealth funding of school garden initiatives such as the Stephanie Alexander model is important despite the view that gardens were seen as outside the remit of the health department:

That's where the funding's been managed. It was an unusual fit. Health Department involved with schools. They weren't really - apart from the traditional things like dental care and health care. But to do something of this nature was a little bit of an unusual fit. That's always the case with any school programs. If there's not a direct theoretical educational relationship - if it's sort of subsidiary, they find it a bit unusual.

School Educator 1 further said that “governments can certainly contribute to kids learning more and effective, if they put a little bit of seed funding in. There'll be a huge reward with regards to the student's health outcomes and learning outcomes. Definitely”. Youth Worker and Educator 2 agreed that government needs to address socialisation and the need for connectedness with young children and youth, stating that: “Schools are the hub of the community... All schools should have gardens... and that should be paid for by the government, not come out of school's budget”. School Educator 3 agreed that:

Obesity and healthy eating is on the radar of government, communities and business, but perhaps there could be a more formalised national plan approach to it, which we can all contribute to... I think through school gardens it's very much recognised as one of the really important pieces of the jigsaw. But it's very hard for schools to access funding. There is only one area of funding for schools, too, so a school garden and that's through Stephanie Alexander program... We'd certainly like to see funding which is available to not just the one program... it's very much just one [funded] model that's being used... we would like to see a shakeup of that... Schools shouldn't be expected to have to take on food growing in their curriculum without support.

Disaster Resilience

Local contingency food plans for disasters

All interviewees agreed that disaster recovery is critically important in times of natural disaster (Cardona, 2003; Insurance Council of Australia, 2008; Kendra and Wachtendorf, 2003; Maguire and Cartwright, 2008; Manyena, 2006; Pelling, 2003; Pimm, 1984). Community Educator and Advocate 4 agreed that organised recovery is needed to “*rally the troops... in a formal way*”, and “*this is our evacuation centre, this is our disaster recovery plan, let's kick into action*”. Community Educator and Advocate 1 argued that “*an issue for the future [is] the extent to which governments will want to centralise control over the food production areas under emergency scenarios*”. Many interviewees agreed that among this backdrop, local contingency food plans can support local options for meeting food needs during and following a crisis. This is congruent with the *National Strategy for Disaster Resilience* (NSDR) which acknowledges that more focus is needed on action-based resilience planning to strengthen local capacity and capability, with greater emphasis on community engagement and a better understanding of the diversity, needs, strengths and vulnerabilities within communities (COAG, 2011: 2). Communicative action forms a key mechanism for action-based resilience planning that can integrate ideas for local contingency plans.

Disaster Resilience Officer 3 agreed that local procurement has a place in disaster risk management: “*They should have a local procurement policy or a local procurement provision... I think that that should be prioritised from a disaster-resilience and food-security point of view*”. She does acknowledge however that “*It's a bit tricky when it comes to disasters because often, if you do have a local-first*

procurement policy, then your local area might be wiped out by the disaster and you lose all your crops". She further asserted that disaster contingency arrangements can be linked with local food planning: *"I know they look at operational supply and re-supply from a disaster management point of view, but... as far as I'm aware, they haven't done food security contingency plan... It should be included in the local plan – food"*. Disaster Resilience Officer 3 continued that disaster contingency arrangements which are linked with local food plans need to consider community health agendas:

Disaster management was starting to look more at community engagement and realising that the general level of resilience in a community would affect how they're able to respond and mobilise during disasters, so if you want to get really proactive, you should start looking at the healthy community indicators and social well-being indicators. Because if you have an unhealthy population... any kind of unwellness, heart disease, obesity, whatever, they're not going to be able to respond to disasters as well, because you're not going to be able to do the heavy lifting. You might not be able to do the evacuation. It's just there's a lot of issues.

Community Educator and Advocate 4 concurred local food contingency would be *"less prescriptive [and] actually allowing some space for the community to kick in with their own solutions"*. Community Educator and Advocate 4 suggested that:

Even if it's just a point of contact in the government during those disaster times that the community can go to and say okay, these are the people we've got as a team to address this issue. What's the best way of going about this or we don't want to wait for the army to come. We've got a few people who know local food supply. They can give us food. Can we get that into action? Can you get a few police to help us with some dinghies or something? Something like that rather than waiting for the big heroes to come in and taking an extra day or two. I don't know. It's hard to know exactly how you would turn that into a government policy but I mean it's going to happen regardless.

For Disaster Resilience Officer 1 demonstration projects of what could be done may be well received by disaster risk management given their brief for a *"whole of government response"* for building *"community resilience"*. Disaster Resilience Officer 1 stated that community resilience is:

... a really, really long term thing, and it's [about] picking up... some demonstration projects. With enough money... [it will include] training and community empowerment and inclusion of vulnerable people. Hearing alternative voices - largely that needs a large amount of money. So a few

demonstration projects that can show what can be achieved, such that people will believe it.

Issues with these government actions

The main issues as reported by interviewees confirm the assertion that Policy Networks are generally suspicious of broader, more inclusive Governance Network ideas and solutions (Blanco *et al*, 2011). And that the NSDR prescription for “taking a whole-of-government approach to widening the circle of responsibility” which is inclusive of the community level (COAG, 2011: 7) will be met with a strong degree of resistance. Interviewees discussed this in terms of: a return to core business by the Queensland State government; the role of the mainstream media; changes to financial priorities; and addressing a lack of commitment to long-term community empowerment.

A return to core business in Queensland State government

Several interviewees agreed that the new State government in 2012 has brought with it a narrower focus on the core business of the various departments, and bringing with that a movement away from the broader, integral approaches of the previous government. The integral and holistic approach is resonant with the NSDR prescription for a whole-of-government approach (COAG, 2011: 10) and the communicative action approach for the inclusion of the public in deliberations. Disaster Resilience Officer 1 agreed that the return to core business at the State government level will see the community-based disaster resilience approach die: “*Nationally... it'll go on. There'll be a lot of will behind it. Queensland, it'll probably die*”. Disaster Resilience Officer 1’s opinion was that this is due to the:

Current government [who] might, with its total focus on frontline services, provide a better response... But there won't be any capacity for empowering communities, building, talking to people about community - what 'disaster resilient' might mean... Clearly, Queensland is not going to put any money behind it.

Consistent with Habermas’s approach, for Disaster Resilience Officer 1 it is important for the public service to talk in partnership with other departments to meet integrated goals. However, she asserted that with “*the current government. No public service - servants can go anywhere, can travel at all... our contribution is nothing like it used*

to be - in a very, very short period of time, is nothing like it. As a result, people are just - heads are turning off". Furthermore, if you are employed for "strategic policy... not operational policy... [you may] be carved. Because these sorts of governments surround themselves with their own policy advice... we're supposed to give frank and fearless advice... [Now] nobody wants it". She advised that if "government takes a more broad view and a more preparatory, longer, inclusive, alternative view, then [the community empowerment approach] might live again".

Disaster Resilience Officer 1 stated that she was "less engaged with the job... It doesn't suit me to go to work at something that I'm not enthusiastic about". Similarly, School Educator 1 recounted the change from the broader sustainability focus in State- run education to more traditional models:

In the previous iteration of the government, there was some talk about having a garden concept. We had in Queensland... in 2010... the Year of Environmental Sustainability. That was for all Queensland schools. That was focussing on, across the board, all sustainability issues. [That year] we started a program called Earth Smart, and it was looking at... water conservation, energy efficiency, waste minimisation [and] biodiversity improvement. Biodiversity improvement has also the corollary and subsets of say, school gardens. During that time, the Minister... was talking about... where to next? There was some conversation around having a focus on school grounds as one of the potential projects. [However] change of government, there's been no conversation. Don't know what the actual thinking of the current government is. We haven't seen any policy directions in that area... On 1 July, the [new] State government released a program called Everyone's Environment grants. That's more about planting trees, improving health of waterways... it doesn't go into [school] gardens and health.

School Educator 2 agreed that significant, broad-based and integrative policies have been withdrawn:

Now in Queensland the Earth Smart Science Program that operated for the last three years has certainly improved that whole work but, once again, it stopped. The current government is probably going to remove a lot of the funding behind those programs and it'll be up to individual schools to run it... I think the solar energy initiatives were great but what have we done? We've cut them back. It's going to be far better for our nation to be able to produce energy locally, reducing infrastructure and reduce our pollution. What a win:win for everyone and this is good sense for money to be spent in that way, yet our government wants to pull it out.

Local Government Officer 4 agreed that 'soft agendas' can be on tricky ground when attention is solely on core business: *"What's perceived as those softer agenda of healthy communities is often the things that gets prioritised low, or dropped off when times are tough"*. Dominant worldviews prevail in these cases. The general idea of many interviewees was that when times are tough, a return to core business is most likely. In spite of this, all interviewees agreed that government officials and ministers need to be politically brave enough to demonstrate leadership in local food procurement and contingencies. Community Educator and Advocate 2 suggested that there's *"a role for government to be sufficiently well informed and politically brave enough to seed fund these kinds of educational activities"*. Local Government Officer 2 agreed and stated that: *"I would love to see the government lead by example and make some radical decisions about urban food production"*. However, Local Government Officer 2 felt that:

... the way that our political system is set up... it doesn't really empower that really strong leadership, because the truth is that you've got to get re-elected and if you go too far out on a limb, regardless of how sound the decision is, you might not be there in three years. So it's a much sort of slower, working with the community, getting their support, getting the support to do what you need to do.

For Disaster Resilience Officer 3, the perception of this political reality necessitates the need to *"work outside the sphere of institutional government and institutional ways of relating with it until such time that government realises that it has to jump on board because there's critical mass"* in with community thinking. This outcome has necessitated the Governance Network and communicative action approaches, as they are expressed through community-based food plans, which serve to articulate the marginalised voices that are excluded from the food security debate (see Appendix 5). As argued in the review and analysis of the literature, formalising these informal community network arrangements embodies both the international and national disaster resilience recommendations for holistic preparedness and the use of multiple trusted sources of information. In line with this, the NSDR calls for government support of community-based resilience efforts (COAG, 2011: 7).

Media portrayal of 'green'

Community Educator and Advocate 2 asserted that a key issue is that *"the major educational force in our society is commercial media... Governments can devise advertising programs but they have to be aired by the mainstream media which is so closely connected with commerce"*. She continued that *"it's mainstream media coverage of the need for social behaviour would change, that makes it all happen"*. However, *"our media consummately suggest that anybody who's got a bit of a green agenda is somehow a little bit loopy and dangerous"*. This supports the assertion that institutional monopolies whether they are food or media related, tend to perceive the incorporation of NGO elite actors as antagonistic and subversive to decision-making (Blanco *et al*, 2011: 304). This can undermine efforts toward communicative action.

Financial priorities

Disaster Resilience Officer 1 argued that disaster risk management's agenda to build community self-reliance in disasters is more about saving money than empowering communities, therefore, long-term resilience measures and calls for communicative action will not be taken seriously. She stated that:

We've realised [that] we can't afford to continue to provide the services we currently provide. So it's not really driven by this will be better for community connectedness, or better for people's feelings about their community and their engagement with their neighbours. It's more about looking for a strategy that's going to help pay for what it can cost. Certainly the costs of disasters in Queensland have gone up like this. They've gone up at a very, very steep curve. [The 2011 flood cost was] borne by the rest of Australia.

Furthermore, Disaster Resilience Officer 1 asserted that the application of generic financial handouts such as *"NDRRA, the National Disaster Relief and Recovery Arrangements... [are] counterproductive to resilience"*. She stated that:

They do [recognise this] but they can't step away from it exactly, or don't have the political will to step away from it. [In term of] applying the personal hardship grants... genuine cases should get more money... less money. They shouldn't get this middle amount of money... It's like a free government handout.

Disaster Resilience Officer 3 agreed that *"in disaster management, they have been funding community resilience and community organisations because they realise that*

they don't have the money to pay for recovery". Furthermore, she stated that "the scale of disasters that they're modelling and that they're expecting, they don't have any money, so they need to better be prepared so that it's cheaper. I guess government will become more responsive and more forward-thinking when it's in their interest to do so".

This is consistent with the Policy Network approach which emphasises "hierarchical government bureaucracy" which interacts with society to "repetitively and uniformly carry out government objectives" (Althaus *et al*, 2007: 91). Furthermore, this vertical alignment seeks to "connect goals, resources and structures so that policy intent matches program design and delivery" (Althaus *et al*, 2007: 138). Althaus *et al* (2007: 139) advise government must "match resources with its selected framework to ensure that its objectives are met in an efficient and effective manner". Governance Networks which articulate the "need for inter-organisational cooperation and collaboration" in order to combat factors which "stifle coordination" and hinder positive contributions to "innovations, quality and new ideas" (Althaus *et al*, 2007: 138) are seen as antagonistic to the maintenance of this "stable structure of social relations" (Nyseth, 2008). This also applied to the reported lack of commitment to long-term community empowerment.

Lack of commitment to long-term community empowerment will require incremental changes

Disaster Resilience Officer 1 argued that due to the lack of commitment to long-term community resilience and the foundations of communicative action, incremental changes may be beneficial to "*building community resilience, building disaster resilience... [as it] is the number one driver policy... at the moment*". But, she argued, "*there's not enough commitment in the long term, the behavioural change that needs to come behind that... It has lots of weighting, but it's not provided with structures underneath for it to happen*". Furthermore, it is accepted at the national level, but:

I think there's very little actual understanding of what it means in our field of interest, and what might have to happen over a sustained and long period of time. Because... this is still command-and-control, which is what most people want... The sorts of people that deliver that response, just constantly assume they can tell communities what to do... So they would think that telling the community to take responsibility was enough, because they don't understand just what it takes to shift and empower, or build community capacity such that they can do something... [However] a statement of policy... often with no

money behind it at all, can work as long as we take the long view. Keep lining things up with it - close - carefully and tuning things.

Local Government Officer 1 agreed from a planning perspective stating that *“I just know the trouble... trying to get food in the city on the table for the urban planners. In fact it's more sort of a point of joke with them and they don't really see it seriously”*.

Local Government Officer 1 continued that:

It's not a fact that all of the production comes from the rural areas. We have a role to play in urban agriculture as well and it's baby steps for us to be quite honest. We don't have any urban agriculture specialists in council. It's something that we'll have to sort of dabble with. We'll be on a steep learning curve.

The government practitioners interviewed were acutely aware of the discrepancy between integrative and holistic policies in their workplaces and the slow pace in meeting those goals. Disaster Resilience Officer 3 proposed that disaster risk management's view of community empowerment demonstrates that *“their speaking is a little bit further ahead than they're walking. Even in community resilience, they only want it so that community can look after themselves until they're ready to come in and control them again - if that makes sense”*. School Educator 1 stated that the challenges are about *“maintaining that positive, visionary, goal-setting approach towards achieving outcomes... focus on implementation and achieving outcomes and celebrating that and then reviewing and renewing. Doing that action learning process”*. The concept of action-learning whereby the learnings from ‘dabbles’ and ‘tunings’ may be captured is consistent with the benefits of incremental, small steps which Lindblom (1979: 520) argues, allows decisions to be made more quickly, that do not “rock the boat” and “stir up the great antagonisms and paralysing schism as do proposals for more drastic change”. This is helpful given that many of these ideas “calls into question a number of entrenched political and cultural attitudes about land, people, and ways of doing things that are in conflict with what actually needs to be done to achieve a quality-of-life and disaster-resistant society” (Geis and Kutzmark, 2000: 4). Community Educator and Advocate 1 agreed that government practitioners have a positive influence despite these dynamics:

Ironically I think Brisbane City Council is doing far more than the State government or the Federal government in lots of ways. It surprises me because it seems to have come from Campbell Newman pushing very much an agenda of local education, getting community gardens up and running. I think there's

been some bureaucratic force or perhaps some individual employees in council who've been pushing the agenda very hard too and successfully.

This would not be too hard to see, as all the government employees who were interviewed were articulate, well informed and passionate advocates within their line of work. For example, Local Government Officer 2 revealed that:

As someone who's passionate about it, of course, I would like to be doing a lot more. I always want to do more for everything, whether it's local food, carbon emissions, or protecting our waterways, that's the nature of the work that I do particularly.

Government practitioners appeared to be well aware that shared responsibility for building social resilience does not mean equal responsibility. Interviewees primarily concurred with Fahlquist's (2009: 119, 121) argument that institutional agents have more capacity, ability and power to create opportunities for individuals to do what is right and needed for their circumstances and hence have a greater share in the responsibility. Fahlquist (2009: 111) states that: "Individuals who have reasonable alternatives, capacity and resources to do something... should be seen as responsible. Institutional agents have the power and resources to affect the number of individuals who possess such capacity and resources". Perhaps this is why interviewees invested considerably more attention to the role of government than communities or businesses, they see that "a great share of responsibility should be assigned to governments" (Fahlquist, 2009: 111) given that they control the planning of public land-use, the provision of community health services, the delivery of free education and provide leadership and coordination for disaster resilience.

Conclusion

The hypothesis of this thesis is that food insecurity can increase due to a combination of: a rapidly growing urban population; increasing oil demand to maintain our current food supply chain model; and climate change impacts on the critical infrastructure needed for this model to function. A re-thinking of governance systems is needed because, at present, governments have failed to address the complexities and uncertainties within this problem. This re-thinking was found to require a critical analysis of the contributions that network governance has for building social resilience and locally-driven garden contexts.

As demonstrated in this chapter, both the academic literature and the interviews conducted for this project support the hypothesis that governance structures to manage networks will decide the level of success or failure. This chapter focussed on understanding governance implications as they are agreed by interviewees and where these reports support arguments in the literature. The interviewee reports ranged from individuals working within organisations and community groups that specialise in areas of food localisation, education, local planning for health and sustainability and building disaster resilience within communities. They emphasised that business, community and government all have a share in the responsibility for food-related social resilience. The main research question of this thesis is: *Using the three NSDR criteria for leading change and coordinating effort can opportunities for the democratic management of the networks necessary for community and school gardens to function as hubs for building social resilience and food security be facilitated?* The review and analysis of the literature and confirmation from the interviewee reports indicate, yes.... *if*. Therefore, this thesis proposes that it can, subsequent to certain conditions:

- 1) *A richer appreciation of the prospects for leading change and coordinating effort for disaster resilience can be derived if it is acknowledged that replicable demonstrations in a variety of resilience-building contexts such as community-based planning, health and education exist which can be formally trialled through seed-funding;*
- 2) *The contribution of Network Governance and communicative action is that it aims to navigate through the complexities resident in the relationships and partnerships needed to address the far-reaching and largely uncertain consequences of disasters; and*
- 3) *Policy for governing complex scenarios and relationships will benefit from mobilising the synergies identified through communicative action toward a spirit of shared control.*

Chapter 11: Conclusion

The hypothesis of this thesis was that food insecurity can increase due to the combination of: a rapidly growing urban population; increasing oil demand to maintain our current food supply chain model; and climate change impacts on the critical infrastructure needed for this model to function. It was discussed that inherent within these diverse and complex dynamics were various competing worldviews and their associated risk perceptions. A re-thinking of governance systems was proposed because governments have failed to address the complexities and uncertainties within these problems and entertain viable food procurement alternatives. The original contribution of this thesis lies in the synthesis of four different strands of research into a more integrated whole. This is particularly important as the policies that engage with interconnected systems are caught up in the ambiguity of their causal webs making mistakes very costly. This integrated approach offers contributions to our knowledge about how new connections between previously disparate positions on a highly complex and interconnected set of circumstances can be effectively re-aligned.

Integral to this re-thinking of governance systems was the review and analysis of four distinct bodies of literature and four sets of integrated results and analysis of practitioner responses to the challenges. The practitioners ranged from individuals working within organisations and community groups who specialised in areas of: food localisation; education; local planning for health and sustainability; and building disaster resilience within communities. This conclusion outlines the combined findings and contributions of the four sets of literature and interviews into a synthesised summary of the four key themes. Each theme holds a piece of the puzzle on answering the main research question of this thesis: *Can opportunities for the democratic management of the networks necessary for community and school gardens to function as hubs for building social resilience and food security be facilitated?* To progressively scaffold this multi-faceted question, sub-research questions were applied to each set of literatures and interviews. As outlined next, the contributions to knowledge include: 1) understanding the risks to food security through life-world investigation; 2) the contributions of lived experiences to framing resilience-building activities and coordinated action; 3) the role of worldviews in generating shared responsibility for gardens as food hubs; and 4) managing governance complexities through synergised and shared control.

1. Understanding the risks to food security through life-world investigation

The research question addressed in the literature chapter was: *What is food security and how can we understand the risks to achieving it?* A review and analysis of food security risk perceptions highlighted that risk can be constructed in different ways depending on social contexts. The food security dimensions covered included tensions and agreements in food availability, adequacy and access. It was found that there were issues with how notions of *dependency* and *control* can be appropriately located. On the one hand, the notions of appropriate placement of dependency and control were subject to the food industry's risk perceptions of its own economic survival with key partnerships based on this. Outcomes for food security repeatedly highlighted that these notions of dependency and control have often resulted in unequal and often inequitable social and environmental consequences. On the other hand, community-based food initiatives have demonstrated compass points for government-driven support. Risk perceptions that included community-based and cultural values of food, revealed various underlying and inequitable dynamics in our current food system. Inclusion of these forms of risk perceptions highlighted the importance placed on the potentially wicked and intractable nature of the issues involved with food security. Wicked problems were subject to a variety of interrelated and uncertain dynamics and a variety of view-points added resilience to the debate.

Likewise, understanding the risks to food security as they were argued by interviewed practitioners, were found to support these findings in the literature. They were asked: 1) *What do you understand by the term food security?* And 2) *What do you think could be risk to food security?* Habermas's life-world investigation was employed to seek out how the interdependencies between one's 'life' and the 'world' were constructed. Because they were mutually dependent upon one another, the life-world was identified as personal and also a shared, inter-subjective experience. The interviewee's varying perceptions of risk revealed their underlying cultural values and dynamics within and between groups. They all framed food security and its risks as a set of complex and integrated dynamics. They all emphasised the perceived risks of corporate food control and our widespread dependency on the multi-faceted dynamics that are required to support that model.

These findings from the literature and interviews contributed to our knowledge on understanding how the notion of risk could be framed in its multiplicity. This applied

to the *National Strategy for Disaster Resilience* (NSDR) criteria for leading change and coordinating effort on understanding risks (COAG, 2011: 7):

*Leaders from all levels of government, business, the not-for-profit sector and communities **strive to recognise and understand the risks disasters pose to their own and their community's interests.** They take responsibility for mitigating these risks and apply the concept of disaster resilience to strategic planning processes, and to those roles where they can exercise influence (Emphasis added).*

Questions were raised in literature and interviews about the sufficiency of the current food chain to sustainably function given the pressures of climate change, peak oil, infrastructure interruptions and our growing population's dependency on its continued functioning. Given the unknown complexities and synergies involved, the development of human capabilities was found to be a key feature of developing food security at the local level. In light of an integrated approach, a richer appreciation of food-related risk dimensions could be derived if it was acknowledged that individuals, organisations, communities and their cultures share responsibility in the food security debate. This required a re-thinking of governance systems based on an explicit understanding of how food provision was subject to control and dependency risk perceptions. Therefore it was recommended that policy must go beyond goal-directed purposive action alone to include a dialogical approach. In this way, giving a 'voice' to these risk perceptions will further clarify pathways to community-based partnerships and shared responsibilities upon which government support can be adhered. However, the issue of who to include as gate-keepers of food availability, adequacy and access was identified as a key tension. Accordingly, we can see that food security has moral dimensions to be addressed. As the notion of food security continues to grapple with increasing complexities, it has arguably evolved to include the need for a long-term focus for the food supply chain. This serves to deepen our understanding, not only of the potential risks, but the moral responses that accompany them.

2. Contributions of lived experiences to framing resilience-building activities and coordinated action

The research question addressed in the literature chapter was: *What is social resilience and how can it be applied to the problems of food security and climate changes?* It was found that resilience has been widely understood in terms of capacities for resistance and abilities to bounce-back and recover. Resilience was also framed as bouncing-back *better*, which entailed consideration of whole community dynamics and equity issues. The connection was found to be strong

between the aims and objectives of community-based food plans and the four features of resilience as betterment: 1) self-reliance and self-organisation; 2) inclusiveness and social ties; 3) capacity building, learning and adaptation as developable human qualities; and 4) empowerment and participation. These features highlighted the importance of capability development which benefits from being anchored by: learning experiences; opportunities for acquiring skills; inclusiveness; democratic engagement; and networked organisation. Informal community-based and formal education avenues were emphasised. Food literacy which involved re-skilling, training and education formed the basis for long-term adaptive learning. This confirmed Morrow's (2008: 12) assertion that "essential resiliency or degree of true resilience will define the level of risk to any hazard".

Based on Habermas's arguments, the life-world was discussed as a complex and integrated dynamic of where we live and have our experiences. Accounting for practitioner's lived experiences of building social resilience, made visible their natural attitudes about being in the world given the complexities, interconnections and uncertainties discussed in the previous section on food security and the risk perceptions. This theme on building resilience highlighted what can be done about it. Interviewees were asked: 1) *What does social resilience mean to you?* And 2) *Does building social resilience relate to food security and climate change? If so, then how?* It was found that communities that have existing organised networks of relationships in food procurement and social inclusiveness, have already set the precedents or demonstrated the capacity for mitigating disaster risks at the community level. This reinforced the assertions that: 1) local informal networks in food procurement do already exist; 2) communities already use their informal networks to help look out for each other during severe weather events; and 3) solutions to the problem of building resilience within communities can be found within communities. Interviewees demonstrated that in thinking and talking about the problems, solutions were also invoked, thus indicating that problems and solutions are contained within each other. The interviewee's initial definitions on the meaning of social resilience were also consistently modified as they began to discuss this concept in the terms of food security and climate changes.

These findings from the literature and interviews contributed to our knowledge on understanding how resilience-building activities can be supported by government programs. Building on the integrated approach, governments will need to listen to the ideas of business, not-for-profit *and* community leaders in order to prepare and

provide guidelines, information and other resources to that end. A richer appreciation of resilience-building activities can be derived if it is acknowledged that individuals, organisations, communities and their cultures share responsibility in the resilience-building debate. Policy practice will therefore benefit from re-thinking governance systems. It was argued that this will require explicit understanding of how deliberative participation can empower those communities that wish to participate in building their own resilience. This recommendation informed the NSDR criteria for leading change and coordinating effort on support for community-based resilience efforts that is inclusive community engagement and capability development (COAG, 2011: 7):

Governments help business, not-for-profit and community leaders by preparing and providing guidelines, information and other resources to support community efforts in resilience-based planning, including resilience-building activities, disaster risk management, stakeholder and community engagement, disaster response and recovery and capability development.

This understanding is important because it is not a question of selecting which one of the resilience features is the most important or valuable, but of an integrated and robust approach that weaves all into a more holistic and effective plan. The integrative approach needs to make room for communities to reflect upon the meaning of resilience given their specific contexts. Viewing social resilience in this way can help us to address a range of complex and interconnected issues and better address the 'essential resiliency' needed at the community level.

3. The role of worldviews in generating shared responsibility for gardens as food hubs

The research question addressed in the literature chapter was: *How do community and school gardens contribute to building a community capacity for social resilience and food security?* Community and school gardens were found to contribute to building social inclusiveness by providing opportunities for community empowerment and participation and by providing democratic spaces to strengthen social ties. However, the politics between and within garden groups demonstrated the potential for clashes in worldviews and the weaknesses in the main argument that gardens can function as hubs for building social inclusiveness as a key feature of social resilience. Habermas's worldview was discussed as a point-of-view that reinforced why things happened and what was considered important. Furthermore, community and school gardens were found to have precedents in food security through self-organised and coordinated planning of in times of food crisis. However, the relationships between garden groups with members of the broader policy

communities highlighted the potential for clashes in worldviews. It further consolidated the weaknesses in the main argument that gardens can function as hubs, not only for building coordinated action but also self-reliance in food security. Finally, emergent policy connections in the areas of health and education were outlined as avenues for the learning and adaptation of school children, youth and adults. These findings were important because they tell us that you don't need to re-invent the wheel - demonstrations in community and school gardens as hubs for building locally-based resilience and food procurement already exist.

Both the literature and interviewees confirmed that approaches in favour of developing essential resiliency, such as attention to sustainable local communities, formed stronger foundations in times of natural and economic disasters. Interviewees were asked: 1) *The draft of the 'new' Brisbane City Plan proposes 'urban villages', where everything is in walking distance. What do you think about this?* Local village hubs with local food gardens were found to serve as an avenue to empower shared responsibility. They were also asked: 2) *If community and school gardens were part of 'urban villages', how might they contribute to building social resilience and food security?* Gardens initiatives were also reported to improve resilience through social inclusion and food security through formal and informal food literacy. However, congruent with the literature, practitioner accounts of the legitimacy of community and school gardens as hubs, revealed not only common ground, but tensions in worldviews and resulting power struggles. The challenges of integrating the multiple worldviews into coordinated action were found to be complicated. Ideological tensions were found to arise within and between community groups and between these groups with government agencies and businesses.

How these dynamics can be addressed was found to ultimately be a question of governance and its ability to anticipate and respond to the inherent complexities of food risk perceptions, resilience-building activities and shared responsibilities that were anchored at the community level. As a key part of the integrated approach, Habermas's communicative action legitimised the diversity of voices and set up a mechanism for consensus and negotiation. It was argued that this held important contributions for the NSDR criteria for leading change and coordinating effort for shared responsibility through the coordinated planning of partnerships and networks (COAG, 2011: 7):

Leaders drive development of partnerships and networks to build resilience at the government, business, neighbourhood, and community levels. These partnerships

are based on a sense of shared responsibility, and an acknowledgement of the need for coordinated planning and response.

4. Managing governance complexities through synergised and shared control

The research questions addressed in the literature chapter was: *What governance opportunities and challenges are posed for the democratic management of networks and relationships?* The management of the growing complexities of disasters was found to need more attention to the underlying interconnections and broader contexts. Network Governance was discussed as an avenue for the management of emergent issues in complexity and uncertainty such as the need for: social inclusion and sustainability; collaborative relationships including the community; tackling of wicked issues or intractable problems; increasing social complexity, dynamism and diversity; and more integrative approaches given the recognition of fragmented organisational frameworks. Both Policy Network and Governance Network approaches demonstrated the challenges and opportunities at hand in terms of facilitating network management and democratic processes. They highlighted the need for governance structures to consider network performance measures. The extent of inclusion within a network was considered in terms of the capacity to broaden multiple trusted sources. The nature of public participation and involvement presented some challenges for Governance Networks in producing effective outcomes. Finally, transparency, accountability and meta-governance were found to be particular challenges for Policy Networks.

Practitioner's views for governing the complexities of food security and building social resilience focussed on mobilising synergies between worldviews and seeking forms of shared control. They concurred that a mixture of Policy Networks and Governance Networks was needed for a holistic and more integrated Network Governance approach to dealing with the wickedness and uncertainties latent within food security concerns. Interviewees were asked: *What should businesses, communities and government do about these issues?* They confirmed that government, business and communities all have roles to play. Partnerships with corporate and local businesses were seen as important. A range of ideas for community involvement from the informal to formalised deliberative governance were posed. However, particular importance was placed on the role of government to facilitate and empower communities to share in taking responsibility for their own decisions and actions where they wish to do so. Avenues for communicative action were particularly

highlighted. For example, local government planning was reported to have a vital role in removing barriers to public participation and raising community awareness through consultation and engagement. Suggestions included trialling neighbourhood parliaments, participatory budgeting, forming local food procurement policies and mobilising established gardens as effective demonstrations in resilient food provision. Projects in community health were also cited as an avenue for demonstration particularly as they relate to forming partnerships. State-run education was found to need formalisation of outdoor learning into school plans and curriculum development. It was argued that a richer appreciation of the prospects for leading change and coordinating effort for disaster resilience can be derived if it is acknowledged that replicable demonstrations in a variety of resilience-building contexts such as community-based planning, health and education exist which can be formally trialled through seed-funding. Finally, disaster resilience perspectives highlighted the benefits of local contingency food plans for disasters. Key issues in the viability of these propositions included a return to core business in the Queensland State government, conflicting financial priorities, and a lack of long-term commitment to community empowerment, that may in the long-term, require a focussed approach on incremental changes.

The main research question of this thesis was: *Using the three NSDR criteria for leading change and coordinating effort, can opportunities for the democratic management of the networks necessary for community and school gardens to function as hubs for building social resilience and food security be facilitated?* Habermas's communicative action aimed to facilitate the ability of alliances to cut through disparate worldviews and find the workable common ground. The contribution of Network Governance and communicative action were found in their navigation through the complexities resident in the relationships and partnerships needed to address the far-reaching and largely uncertain consequences of disasters. This contribution was reported to be important because the NSDR has called for a for more "integrated and coordinated disaster resilience" (COAG, 2011: 3) and whole-of-government approach to disaster resilience. As such, the NSDR was found to require the facilitation of: 1) policy integration (the synthesis of complexity and differences); 2) policy holism (whole-of-government approach) which allows for movement of decisions outside the traditional scope of disaster risk management; and 3) bottom-up approaches which support local flexibility and innovation. These approaches are important for addressing the NSDR call for community empowerment for adaptive capacity, capability and confidence in the face of disasters (COAG, 2011: 2) and partnerships

with those who can effect such changes (COAG, 2011: 9). Furthermore the NSDR advised that effective community resilience relies on good working relationships within and between communities (UKCO cited in COAG, 2011: 15). This entailed a long-term, evolving process to deliver sustained behavioural change which is cognizant of the three criteria for leading change and coordinating effort for disaster resilience as analysed throughout this thesis (COAG, 2011: ii, 7). In answer to the main research question, policy for governing the complex scenarios and necessary relationships will benefit from mobilising the synergies identified through communicative action toward a spirit of shared control.

In summary, the research problem addressed by this thesis was that food-related disaster events have become complicated by the interplay between the needs of a rapidly growing urban population, increasing oil demand to maintain the current food supply chain, and climate change impacts on the critical infrastructure. The synergies between these influences have been analysed to expose our collective vulnerability to unexpected food insecurity. Governance failures to anticipate these complications and their uncertainties have been understood as yet another potential disaster. The synthesis of the four areas of research in combination to Habermas's Theory of Communicative Action, provide an original contribution to an integrated approach to the complex, interconnected and uncertain problems of food security. For such a broad social issue, the limitations of this thesis lie in the relatively small number of interviews based only within South-East Queensland. However, the practitioner accounts provide rich and contextual insights to an extensive theoretical analysis of four bodies of literature, and their interconnections. The opportunities for further research to refine these results lay in a continued effort to seek out the synergies and shared purposes that can align the disparate worldviews in all their multiplicity toward a more integrated whole. The life-world investigation that underpins Habermas's communicative action provides tangible opportunities for leading change and coordinating effort in complex circumstances.

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Appendices

Appendix 1: Policy directions in support of community-resilience as a form of disaster resilience

There are a number of policy agendas that advocate government leadership which supports the NSDR goals for community-based resilience. These include:

1) *The International Strategy for Disaster Resilience (ISDR)*

According to the ISDR, the strategic goal of relevance here is to develop and strengthen institutions, mechanisms and capacities at all levels that can systematically contribute to building resilience to hazards, particularly at the community level (UN, 2005: 3, 4). To ensure that disaster risk reduction is both a national and local priority, there is the need for “widespread consensus for, engagement in and compliance with disaster risk reduction measures across all sectors of society” (UN, 2005: 6). Here, “human resource capacities” should be accessed and “capacity-building plans” developed. The need for community participation is highlighted through the promotion of networking and strategic management of volunteers (UN, 2005: 7).

2) *The National Partnership Agreement on National Disaster Resilience*

The NSDR is complemented by Australia’s *National Partnership Agreement on National Disaster Resilience* between the Commonwealth, States and Territories. The objective is for Australian communities to be resilient to natural disasters (COAG, 2009: 2). In communications with the public, this joint initiative is referred to as the *Natural Disaster Resilience Program* (COAG, 2009: 4). This agreement acknowledges the mutual importance of “reducing the impact of, and increasing the resilience to natural disasters” and that working together with others parties is needed to achieve those outcomes (COAG, 2009: 2).

3) *The National Disaster Resilience Framework*

The Ministerial Council for Police and Emergency Management’s Emergency Management (MCPEM-EM) agreement called the *National Disaster Resilience Framework* concurs that governance for resilience is strengthened through shared understandings and responsibility. The framework acknowledges that the shift in emphasis from the top-down approach to engagement with communities at the

“grass-roots level” is key to the: strengthening of networks; development of understandings needed for shared ownership; empowerment of communities to be more self-reliant; and enhanced learning, innovation, skills and resource development which are cornerstones of the social resilience approach (MCPEM-EM, 2008: 1-4). It is recognised that strengthening communities to minimise disaster risks improves the functionality of the Prevent-Prepare-Respond-Recover (PPRR) model (2008: 1).

4) *The Climate Change Adaptation Action Plan*

The Ministerial Council for Police and Emergency Management’s Emergency Management (MCPEM-EM) document *The Climate Change Adaptation Action Plan* (2009) aims to “ensure climate change adaptation strategies are an integral part of emergency management planning and processes”. It is stated that the “emergency management sector should engage with communities... to design and implement climate change adaptation strategies that will enhance Australia’s disaster resilience”. The provision of better information, tools and networking opportunities, and timely cooperative action are highlighted (MCPEM-EM, 2009: 1, 2).

5) *National Climate Change Adaptation Framework*

The *National Climate Change Adaptation Framework* acknowledges the role of government leadership in building adaptive capacity and raising awareness of adaptation options (COAG, 2007: 4). To this end, it is recommended that key components of adaptive capacity include “governance systems with sufficient flexibility and foresight to embrace adaptation planning, and willingness to adapt” (COAG, 2007: 6).

With the change of State government in 2012 many of the Queensland plans are being reviewed and action on climate change has been curtailed. The State government frameworks set up by the Labor government supported many of these local government initiatives. Now that the State government has changed there is the question of whether these policies and plans will survive.

6) *Queensland State Disaster Management Plan (QSDMP) (2010)*

The QSDMP strives for an integrated and comprehensive approach to the Prevent-Prepare-Respond-Recover (PPRR) model. It is aimed that “the awareness, preparedness and resilience of communities involve all individuals taking a share of

the responsibility in before, during and after disaster activities” (SDMG, 2010b, 5-8).

The five guiding principles are the:

1) Comprehensive approach:

The four phases of the comprehensive and integrative approach include Prevent-Prepare-Respond-Recover (PPRR) (SDMG, 2010b: 5):

- **Prevention:**

Prevention is “the taking of preventative measures to reduce the likelihood of an event occurring or, if an event occurs, to reduce the severity of the event” (SDMG, 2010b: 5). This requires an understanding of the following three phases.

- **Preparedness:**

Preparedness is “the taking of preparatory measures to ensure that, if an event occurs, communities, resources and services are able to cope with the effects of the event” (SDMG, 2010b: 5). As discussed in the fifth principle below, this requires building community capability and resilience (SDMG, 2010b: 24).

- **Response:**

Response is “the taking of appropriate measure to respond to an event, including action taken and measures planned in anticipation of, during, during and immediately after an event to ensure that its effects are minimised and that persons affected by the event are given immediate relief and support” (SDMG, 2010b: 5).

- **Recovery:**

Recovery is “the taking of appropriate measures to recover from an event, including the action taken to support disaster-affected communities” (SDMG, 2010b: 5). The functions of recovery are interrelated and include: 1) economic renewal and growth; 2) environmental restoration and regeneration; 3) human-social support, health and well-being; and 4) infrastructural repair and reconstruction (SDMG, 2010b: 37, 38). Mitigation is linked with recovery when “it is apparent there is an opportunity to build communities in ways more resilient than before” (SDMG, 2010b: 23). Mitigation is defined as “risk treatment” meaning that a “process of selection and implementations of measures” can be used to “modify risk” (SDMG, 2010b: 61). Mitigation in this form highlights the significance of more resilient infrastructure, prepared communities and resilience activities within partnerships based on a clear understanding of vulnerabilities (SDMG, 2010b: 23).

2. All hazards approach.

“The all hazards approach assumes that the functions and activities applicable to one hazard are most likely applicable to a range of hazards and consequently a disaster management plan captures the functions and activities applicable to all hazards. For example, health services and emergency supply are functions common to most disasters” (SDMG, 2010b: 6).

3. All agencies approach.

“The all agencies approach recognises that no single agency can prepare for and deal with the disruption to community life and infrastructure that can result from a disaster”. Therefore, it is “necessary for a lead or primary agency to coordinate the activities of the large number of organisations and agencies that are involved. These can be drawn from across all levels of government and non-government and private sectors” (SDMG, 2010b: 6).

4. Local disaster management capability.

“Local level capacity is recognised as the frontline of disaster management”. It is outlined that local governments should assume primary responsibility for the management of events in their local government area, which is conducted within their Local Disaster Management Group (LDMG)” (SDMG, 2010b: 7). District Disaster Management Groups (DDMG) provide, “whole-of-government planning and coordination capacity to support local governments in disaster operations” when requested by LDMGs (SDMG, 2010b: 14).

5. A prepared, resilient community.

“Disaster resilience is significantly increased by proactive planning and preparation for the protection of life, property and the environment through an awareness of threats, associated risks and local disaster management arrangements” (SDMG, 2010b: 8). “The awareness, preparedness and resilience of communities involve all individuals taking a share of the responsibility in before, during and after disaster activities” (SDMG, 2010b: 8).

7) Operation Queensland (2011)

The Queensland Reconstruction Authority (QRA) established *Operation Queensland: The State Community, Economic and Environmental Recovery and Reconstruction Plan 2011-2013 (the State Plan)* after the severe weather events during November 2010 to February 2011 (QRA, 2011c). Operating under *the State Plan*, *Operation Queensland: The State Community, Economic and Environmental Recovery and Reconstruction Implementation Plan 2011-2013* outlines implementation actions and reporting mechanisms for the *Six Lines of*

Reconstruction Committees. The strategic objectives involve building and supporting resilience, self-confidence, preparation and the whole-of-government approach as embodied in the previous State government's *Toward Q2: Tomorrow's Queensland* (QRA, 2011b, 5, 6). The NSDR focus on leading change and coordinating effort is taken on board by *the State Plan* to be at the forefront of building disaster resilience (QRA, 2011a: 10).

8) Disaster Management Alliance (2010) Resilient communities through partnerships: A memorandum of understanding

The Local Government Association of Queensland (LGAQ) works in conjunction with Queensland's Department of Community Safety for building disaster resilience within communities. Local governments are on the frontline in emergency management and best placed to know what's right for their communities. Local government have a lead role in addressing local level issues through: engaging and supporting local people; shaping local places; delivering local programs; and implementing local plans and policies (LGAQ, 2011b: 1). The Disaster Management Alliance is a partnership between the Local Government Association of Queensland (for and on behalf of Queensland Councils) and the State of Queensland through the Department of Community Safety. This Memorandum of Understanding (MoU) recognises that from a disaster management perspective, "well prepared communities" are better able to manage, recover from and "adapt to change" (Disaster Management Alliance, 2010: 5). Through collaboration, the MoU strives to achieve outcomes resulting in (Disaster Management Alliance, 2010: 5):

- **“Resilient communities:** *Communities working collectively to reduce the impacts of natural disasters;*
- **Self-reliant communities:** *Communities, businesses, families, and individuals who take action to prevent, prepare for, and to recover from natural disasters;*
- **Engaged communities:** *Communities who work with Local Government and State Government agencies to build resilience at a local level; and*
- **Aware Communities:** *Communities informed of their local natural hazard risks”.*

Appendix 2: The seven National Strategy for Disaster Resilience (NSDR) priority actions

As outlined below, the seven core actions developed by the NSDR are: 1) leading change and coordinating effort; 2) understanding risks; 3) reducing risks in the built environment; 4) communicating with and educating people about risks; 5) partnering with those who effect change; 6) empowering individuals and communities to exercise choice and take responsibility; and 7) supporting capabilities for disaster resilience.

1) Leading change and coordinating effort

International calls for leading change and coordinating effort

Disaster management policy at both the national and international levels has driven the growing emphasis on the need for resilience (Prosser and Peters, 2010: 9). In terms of the global policy framework for addressing social resilience in the face of natural and economic crises, the *International Strategy for Disaster Reduction* (ISDR), developed under the United Nations, produced the current guiding document: *The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*. According to the ISDR, the specific gaps and challenges identified since the *Yokohama Strategy* in 1994 form five priorities for action in the development of the ISDR framework 2005-2015. The five international action priorities are (UN, 2005: 2): 1) strengthening governance frameworks; 2) risk identification; 3) risk reduction; 4) management of knowledge and education; and 5) strengthening preparedness.

Additionally, the United Nation's *Biennial Work Program* was developed following the *Global Platform for Disaster Risk Reduction* in 2009 (UN, 2009: 2). This document calls for "scaling up action" for developing disaster resilient communities. It is noted that although the *Global Assessment Report on Disaster Risk Reduction* has "provided irrefutable evidence that disaster risk is continuing to increase and threatening development gains... it is clear that the current scale of organisation and investment in disaster risk reduction is far from sufficient to address the scale and scope of disaster risk" (UN, 2009: 3). The need for ensuring coherent global and regional support is identified to achieve this end (UN, 2009: 1). In scaling up actions, the UNISDR secretariat goal is to "lead the ISDR partnership toward increased political and financial commitment for measurable change". The strategic objectives

highlight the areas of: Disaster risk reduction through climate change adaptation; measurable increases in disaster risk reduction investment; strengthening of the international system; and developing disaster resilient cities, schools and hospitals (UN, 2009: 1, 4). The resolution of the ISDR was to call upon governments to establish national platforms (UN, 2009: 2).

Australian response to establishing a national platform

In 2009, the Council of Australian Governments (COAG) commissioned the *National Disaster Arrangements Working Group* to form an agreement for Australia's whole-of-nation disaster resilience as our national platform. The COAG then agreed to establish the *National Emergency Management Committee (NEMC) Working Group*⁵¹ to "drive and coordinate national policies and capability development" (Prosser and Peters, 2010: 9). Adopted by the COAG in 2011, the NEMC developed the *National Strategy for Disaster Resilience: Building our nation's resilience to disasters* as the national guiding document (COAG, 2011: ii, 1). This according to Prosser and Peters (2010: 9) marks an important shift as "departments will now play a more significant role, enabling a whole-of-government view of nationally significant emergency management issues, as well as the ability to influence and facilitate decisions beyond the remit of the traditional emergency management portfolio". This shift has the policy agenda to "strengthen governance through leading change and coordinating effort" (COAG, 2011: 1). The three priority actions for leading change and coordinating effort are applied to this thesis. As stated, these include: 1) understanding and mitigating risk; 2) supporting community-based resilience activities; and 3) sharing responsibility through partnerships and networks. These are congruent with, and are supported by, the following actions.

⁵¹ The consultation list for the NSDR includes: 1) unspecified federal, state and local government agencies; 2) Research and academia including: Australia 21; Australian Emergency Management Institute; ANU National Security College; Australian Security Research Centre; Batchelor Institute of Indigenous Tertiary Education; Charles Darwin University; CSIRO; Flinders University, Research Centre for Disaster Resilience and Health; Monash University, Department of Community Emergency Health and Paramedic Practice, Global Terrorism Research Centre, and World Association for Disaster and Emergency Medicine Oceania Regional Chapter Council; RMIT, Centre for Risk and Community Safety; University of Queensland, Institute for Social Science Research; University of Western Sydney, Disaster Response and Resilience Research Group; and Victoria University, Faculty of Arts, Education and Human Development; 3) Industry groups including: Insurance Council of Australia; Planning Institute of Australia; and Real Estate Institute of Australia; and 4) Non-Government Organisations including: Australian Red Cross; Not-for-profit Advisory Group, Australian Government Disaster Recovery Committee; Adventist Development and Relief Agency; Anglicare Australia; Australian Emergency Management Volunteer Forum; Catholic Social Services; Lifeline Queensland; Lions International; St John Ambulance; The Smith Family; and Volunteering Australia (COAG, 2011: 22).

2) Understanding risks

The NSDR states that risk “information must go beyond examination of life and property and simple economic assessments to cover the full scope of the social, built, economic and natural environments” (COAG, 2011: 8). This requires an understanding of complex interactions and synergies of which the development of networks are a part. Therefore the international response to understanding risk calls for research, analysis and reporting on “long-term changes and emerging issues that might increase vulnerabilities and risks or the capacity of authorities and communities to respond to disasters” (UN, 2005: 9).

3) Reducing risks in the built environment

Reducing risks in the built environment is an inherent part of understanding risk (COAG, 2011: 8). The reduced performance or failure of critical infrastructure such as homes, industrial properties and road and rail is predicted due to extreme weather events and climate change impacts is of serious concern (CoA, 2011: 6). These facets of our built environment are integral to our economic environment. Economic modelling for the *Garnaut Climate Change Review* in 2008 estimated that the “negative impacts of unmitigated climate change” may reduce Australia’s gross national product, mostly from “reduced performance or failure of infrastructure” (CoA, 2011: 6).

4) Communicating with and educating people about risks

The ISDR identify that the impacts of disasters are known to reduce where people are well informed and “motivated towards a culture of disaster prevention and resilience” (UN, 2005: 9). The NSDR aims to support community networks in resilience-based planning including resilience-building activities and capability development (COAG, 2011: 7). It is acknowledged that communicating with and educating people about risks needs to be based on a clear understanding of the risks to the community and communicated in a manner appropriate to each community (COAG, 2011: 9).

5) Partnering with those who effect change

An NSDR priority outcome for leading change and coordinating effort for building disaster resilience is the development of partnerships and networks. These relationships require a shared responsibility where all members recognise and understand the risks that disasters pose to their own and community interests (COAG, 2011: 7). With strong links to the issue of governance, the aim is for working

together and “drawing on the expertise and capacity of various partners” to “create a well-informed, integrated and coordinated approach” to resilience. Strong links, shared understanding, social structures and networks are key features here (COAG, 2011: 9, 10). Partnerships highlight the importance of relationships because of the linkages and interdependencies between parties (UKCO, 2010). The Australian Government’s Department of Families, Housing, Community Services and Indigenous Affairs’ (FaHCSIA) recognises building of partnerships as a principle for social inclusion. The aim is for governments, organisations and communities to work together “to get the best results for people in need” (FaHCSIA, 2011: 2).

6) Empowering individuals and communities to exercise choice and take responsibility

The NSDR has identified that “we all share responsibility to understand these risks, and how they might affect us” Therefore, by understanding the “nature and extent of risks, we can seek to control their impacts, and inform the way we prepare for and recover from them” (COAG, 2011: 7). The NSDR further recognises that a sense of community capability and confidence is needed to empower communities to share in the responsibility for coping with disasters (COAG, 2011: 2). It therefore calls for: more self-reliance; preparation and encouragement of responsibility; the use of local networks and resources; and the mobilisation of local knowledge, skills and abilities. This is an important point as it highlights the shift from conventional top-down government approaches to the governance of existing networks. It implicitly acknowledges that the State does not have the capacity to deal with complex problems and allocates an important role to the community sector.

7) Supporting capabilities for disaster resilience

In terms of supporting immediate capabilities for disaster response, the ISDR identify that preparation exercises and drills need to be rapid and effective to ensure “access to essential food and non-food relief supplies, as appropriate, to local needs” (UN, 2005: 12). In addition to short-term preparation is a long-term focus. In terms of the provision of and access to food, risk reduction and strengthening preparedness both highlight the importance of social safety-nets. There are two facets to consider here. First, the ISDR recognises the emerging importance of “social safety-net mechanisms” to assist the most vulnerable such as the poor, elderly and disabled as well as populations affected by disaster (UN, 2005: 11). FaHCSIA (2011: 1) recognises reducing disadvantage as a key aspirational principle for social inclusion. The aim is to make sure “people in need benefit from access to good health,

education and other services". The ISDR places key importance on recovery safety-nets during the aftermath of disasters, however, the general considerations under the priorities for action in 2005-2015 calls for "proactive measures" that will "build community resilience and reduce vulnerability to future disasters" (UN, 2005: 4, 11). The preparation of safety-nets prior to disaster may therefore pre-empt the needs of minority groups through the appropriate consideration of cultural diversity, age and vulnerable groups in planning for risk reduction (UN, 2005: 4).

Second, the UKCO (2010: 7) advocates that government should establish programmes to "support and encourage individuals and communities to be better prepared and more self-reliant during emergencies, allowing the authorities to focus on those areas and people in greatest need". The NSDR recognises that fostering self-reliance should be encouraged and tailored to community conditions (COAG, 2011: 14). Therefore, supporting capabilities for disaster resilience draws attention to the need for harnessing knowledge, learning and innovation and development of skills (COAG, 2011: 13). The ISDR recognise the need for networking, advocacy, coordination and exchange of information as key processes (UN, 2005: 13). Additionally they recognise that engaging the "active participation and ownership of relevant stakeholders, including communities, in disaster risk reduction, in particular building on the spirit of volunteerism" are specific mechanisms of social capital to develop (UN, 2005: 13). In terms of shared responsibility, important points to emphasise are: 1) the need to lift those who are most dependent; and 2) encourage self-reliance by those who can do for themselves.

Appendix 3: Information sheet and Informed Consent



June 2012

TITLE OF PROJECT

Food for thought:
Sustainable food supplies and social resilience

INFORMATION SHEET

Research Team	Chief Investigator: Dr. Michael Howes Griffith School of the Environment. Griffith University, Gold Coast Campus. Contact Phone: (07) 5552 7264. Contact Email: m.howes@griffith.edu.au
	Co-Investigator: Dr. Jo-Anne Ferreira Griffith School of the Environment. Griffith University, Nathan Campus. Contact Phone: (07) 3735 3962. Contact Email: j.ferreira@griffith.edu.au
	PhD Researcher: Kimberley Reis. Griffith School of the Environment. Griffith University, Nathan Campus. Contact Phone: (07) 3735 6676 Contact Email: k.reis@griffith.edu.au

Why is the research being conducted?

Food supply chain interruptions due to severe weather events have become an emergent issue in terms of understanding our vulnerability to food insecurity. Emergency management in Queensland recognises that communities should not become reliant on re-supply responses, and should make every effort to become self-sufficient in all their needs in case they become vulnerable. Community and school gardens have a long history of providing direct and immediate access to food to avert and alleviate widespread hunger during periods of economic and environmental crisis. This research forms part of a PhD thesis which is designed to develop a governance structure which can: 1) implement policy which aims to integrate agendas across and between government departments for building food-related disaster resilience; and 2) democratically manage locally-driven food initiatives.

What you will be asked to do

Involvement in this project will include participation in an interview for approximately 1 hour duration. The interview will, with your consent, be recorded.

The basis by which participants will be selected or screened

Participants have been selected from government, business and community sectors on the basis of their interest in disaster resilience and locally-driven food initiatives.

The expected benefits of the research

This thesis has been designed to improve our understanding of the opportunities and challenges for governing food-related social resilience as a form of disaster resilience. We expect a variety of policymakers and planners will find this research useful.

Your confidentiality

Data collected, including notes of interviews, will be accessible only to members of the research team. You will not be identified in any reports or publications arising from this research unless you have consented to this in writing. Data collected during this research, including digital recordings of interviews and discussions and transcriptions of them, will be held securely by the research team for the duration of the research. All retained transcriptions will be anonymous (i.e. it will not identify you or be capable of being attributed to you in any way). The recordings will be kept for 12 months following transcription in order to verify any changes to the transcriptions / analysis. The recordings will then be erased. Specific consent will be sought for any proposed retention and use of the recordings beyond the 12 months.

Your participation is voluntary

There is absolutely no obligation for you to participate in this research and if you do agree to do so you are free to withdraw from the research at any time.

Questions / further information

If you have any questions about the research or your participation you may contact the PhD Researcher, Kimberley Reis, whose contact details are listed above.

The ethical conduct of this research

Griffith University conducts research in accordance with the *National Statement on Ethical Conduct in Human Research*. If potential participants have any concerns or complaints about the ethical conduct of the research project they should contact the Manager, Research Ethics on 3735 5585 or research-ethics@griffith.edu.au.

Feedback to you

You will be notified of publication plans and if you wish you will be sent a copy of any report or publication arising from this research.

Privacy statement

The conduct of this research involves the collection, access and/or use of your identified personal information. The information collected is confidential and will not be disclosed to third parties without your consent, except to meet government, legal or other regulatory authority requirements. A de-identified copy of this data may be used for other research purposes. However, your anonymity will at all times be safeguarded. For further information consult the University's Privacy Plan at <http://www.griffith.edu.au/about-griffith/plans-publications/griffith-university-privacy-plan> or telephone (07) 3735 5585.



TITLE OF PROJECT

Food for thought:
Sustainable food supplies and social resilience.

CONSENT FORM

PhD Researcher: Kimberley Reis
School: School of the Environment, Griffith University.
Contact Phone: (07) 3735 6676
Contact Email: k.reis@griffith.edu.au

By signing below, I confirm that I have read and understood the information package and in particular have noted that:

- My involvement in this research will include being interviewed for approximately one hour by Kimberley Reis (PhD researcher from Griffith University);
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that there will be no direct benefit to me from my participation in this research;
- I understand that a de-identified copy of this data may be used for other research purposes;
- I understand that the recordings will be kept for 12 months following transcription in order to verify any changes to the transcriptions / analysis. The recordings will then be erased, with specific consent sought for any proposed retention and use of the recordings beyond the 12 months;
- I understand that my participation in this research is voluntary;
- I understand that if I have any additional questions I can contact the researcher;
- I understand that I am free to withdraw at any time, without comment or penalty;
- I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on (07) 3735 5585 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and
- I agree to participate in the project.

Name	
Signature	
Date	

Appendix 4: Government/Industry based food plans and strategies

Australian National Food Plans and Strategies

1) The Prime Minister's Science, Engineering and Innovation Council (PMSEIC) *Australia and Food Security in a Changing World (2010)*

PMSEIC (2010: iii) locates food challenges and opportunities in terms of food as a commodity. That is: the capacity of the value chain; its production, imports, exports, processing and waste reduction; and research and development productivity and innovation. Land-use planning and energy-use are key features. Meeting those challenges and opportunities is focused on an alliance between governments, industry and research development for food innovation. The "food aware consumer" is seen as positively influencing this framework for food innovation (PMSEIC, 2010: 60).

2) The Australian Department of Agriculture, Fisheries and Forestry (DAFF) *Issues Paper to Inform Development of a National Food Plan (2011)*

The aim of this 'Issues Paper' is to provide a "focus for consultation about possible improvements" to Australia's "whole food supply chain from paddock to plate" (DAFF, 2011d: vi). Areas of focus for global and national food security included: food safety and nutrition for the consumer; generating a competitive, productive and efficient food industry; and sustainability of the industry (DAFF, 2011d: v).

3) The Australian Department of Agriculture, Fisheries and Forestry (DAFF) *National Food Plan Green Paper (2012)*

The 'Green Paper' integrates feedback from submissions in developing a "strong, resilient and collaborative food industry" (Ludwig cited in DAFF, 2012a: iv). With a consideration of the global context, the national food plan for Australia's policy framework and food security sees a focus on: safe and nutritious food; a competitive and productive food industry; a strong natural resource base; and food trade and market access (DAFF, 2012a: vi). From the written submission, meetings, discussions and blogging, the *National Food Plan* is the next step (DAFF, 2012b: 20).

4) The Trusted Information Sharing Network (TISN) *National Strategy for Enhancing the Safety and Security of our Food Supply* (2010)

The TISN works in conjunction with the Australian Government's *Critical Infrastructure Resilience Strategy* (outlined next) to address joint government/industry concerns about food safety. It aims to ensure that the food industry is “capable of responding to the new increased potential for acts of deliberate and malicious intervention in the food supply”. Six themes are highlighted and include: communication and consultation; coordination; prevention; preparedness; response; and recovery (TISN, 2010: 1). The TISN is comprised from number of different business sectors or sector groups including: banking and finance; health; the food chain; transport; communications; water services; and energy (CoA, 2010a: 17). These groups are overseen by the *Critical Infrastructure Advisory Council*, which “provides advice to the federal Attorney-General on the national approach to critical infrastructure protection” (TISN, 2010: i).

5) Australian Government, *Critical Infrastructure Resilience Strategy* (2010)

The *Critical Infrastructure Resilience Strategy* aims to maintain the functioning of “essential services” which form the basis of our critical infrastructure (CoA, 2010a: 6). The networks based on “sector resilience” includes: energy; water services; communications; transport; food chain; health; and banking and finance (CoA, 2010a: 10). This strategy works aims to ensure that the government/industry priorities for food supply are met (CoA, 2010a: 17).

Various State level approaches

1) The Queensland Government, *Food for a growing economy: An economic development framework for the Queensland Food Industry* (2011)

In response to the development of a *National Food Plan* for Australia, the Queensland Department of Employment, Economic Development and Innovation (DEEDI) developed a Queensland Food Plan. Devised by the previous government, the main themes addressed include: “reputation and the consumer; innovation, productivity and skills; planning and regionalisation; trade and investment; resources, sustainability and the environment; food supply and continuity; and health, safety and food information” (DEEDI, 2011a: 2).

2) The South Australian Government, *South Australian Food Strategy 2010-2015* (2010)

The Honourable Mike Rann, Premier of South Australia states that, “collaboration is the key to achieving these aims. We must work together across sectors, share experiences and expertise, and develop partnerships between industry and government along the entire value chain” (GSA, 2010: 4). Key targets of the *South Australian Food Strategy 2010-2015* are to: “generate \$16 billion in Gross Food Revenue by 2015; increase the food industry’s contribution to South Australian’s wellbeing; and, reduce the South Australian food industry’s impact on the environment” (GSA, 2010: 2)

3) The Victorian Government: *Strategic Plan for Food Regulation in Victoria 2011-2014*. (2011)

The Victorian Committee of Food Regulators was established by the Victorian Government to achieve a “seamless’ regulatory system across all the Victorian food regulators for the benefit of consumers and the food industry”. The central themes of the plan will be (DPI, 2011):

Continuous improvement of the regulatory system, transparency and accountability, effective stakeholder feedback, and coordinated reporting by all regulators. The plan will seek to identify issues and trends and endeavour to address them to make it easier for consumers and industry to access the information they require and have their issues resolved. The plan extends beyond food safety alone. It also encompasses food labelling and misleading or deceptive conduct in relation to food.

Other international approaches

1) The Canadian Government: *Growing Forward Framework Agreement*

As part of the Canadian Government, Agriculture and Agri-Food Canada devised the *Growing Forward Framework Agreement*, which “lays the groundwork for coordinated federal-provincial-territorial (FPT) action over five years (2008 to 2012) to help the sector become more prosperous, competitive, and innovative”. The vision is for a “profitable and innovative agriculture, agri-food and agri-based products industry that seizes opportunities in responding to market demands and contributes to the health and well-being of Canadians” (Government of Canada, 2008).

2) The United Kingdom Government: *Food 2030 Strategy* (2009)

The Food 2030 Strategy is focused on six core issues for the United Kingdom’s food system: “encouraging people to eat a healthy, sustainable diet; ensuring a resilient, profitable and competitive food system; increasing food production sustainably; reducing the system’s greenhouse gas emissions; reducing, reusing and

reprocessing waste; and increasing the impact of skills, knowledge, research and technology” (UKG, 2009).

3) The Scottish Government: *Recipe for Success: Scotland's National Food and Drink Policy* (2009)

This policy strives to: “support the growth of our food and drink industry”; build its reputation as a “land of food and drink”; ensure healthy and sustainable choices; make the public sector an “exemplar for sustainable food procurement”; ensure food supplies are “secure and resilient to change”; make food “available and affordable to all”; and ensure that “people understand more about the food they eat” (Scottish Government, 2009: 1). According to Richard Lochhead, Cabinet Secretary for Rural Affairs and Environment, the aim of this policy is to (Scottish Government, 2009: 2):

Promote Scotland's sustainable economic growth by ensuring that the Scottish Government's focus in relation to food and drink, and in particular our work with Scotland's food and drink industry, addresses quality, health and wellbeing, and environmental sustainability, recognising the need for access and affordability at the same time.

Appendix 5: Community and Non-Government Organisation (NGO) food plans and food security position papers

Australian based food plans

1) The Australian Food Sovereignty Alliance (AFSA) A People's Food Plan (2012)

In response to the development of Australia's *National Food Plan*, the Australian Food Sovereignty Alliance (AFSA⁵²) released the draft of *A People's Food Plan* in 2012. As the *National Food Plan* is focussed on sustainability of the food industry and market, the AFSA mission is to work towards "fair, diverse and democratic food systems for the benefit of all Australians" that includes community-based concerns. The values and principles that reflect that commitment to re-locating power aim to be (Parfitt *et al*, 2012: 2):

- **"Inclusive:** All Australians, especially the poor and disadvantaged, have a right to choice of and accessibility to high quality, fresh and nutritious food;
- **Collaborative:** We work with, network and give voice to the multifaceted fair food movement;
- **Professional:** We conduct our interactions respectfully and with humility, ready to learn, not lecture;
- **Transparent:** We are democratically accountable to our members; supporters and the wider public; and our meetings and processes are open;
- **Wise:** Where possible, we seek and develop positions based on fact, not hearsay; but we are open to intuitive understandings of our environment, culture and society;
- **Courageous:** We aim to provide strong leadership in setting out a vision and action plan to bring about the necessary transition to new food and farming futures; and
- **Sustainable:** We act in accordance with social, ecological and economic justice, and with the precautionary principle".

⁵² The AFSA is a "collaboration of organisations and individuals working together towards a food system in which people have the opportunity to choose, create and manage their food supply from paddock to plate". The AFSA does not provide the names of affiliated organisations. It is governed by a Management Committee currently consisting of nine members: President, Michael Croft Michael is a director of several industry organisations, and studies Australian Leadership at James Cook University; Treasurer and Fiona Tito-Wheatland is an activist for foster care, mental health and sustainable agriculture; Secretary, Fran Murrell co-founded MADGE Australia Inc, a group on the spin on GM food; Nat Wiseman is an active member of several South Australian food-centred non-profit organisations, including the Reclaim the Foodchain collective of Friends of the Earth Adelaide, and the Permaculture Association of South Australia; Carol Richards holds a PhD in sociology and works at The University of Queensland as a postdoctoral research fellow; Bob Phelps founded Gene Ethics to work for a GM-free future. In 2003 he was awarded a Federation Medal for his services to the Australian community; Robin Krabbe is currently completing a PhD with the University of Tasmania, addressing community supported agriculture; and Russ Grayson is a community food systems consultant, and the founder of [Pacific Edge](#). He is also a member of the [Australian City Farms and Community Gardens Network](#); and has recently worked with the City of Sydney in the development of their plans for a city farm (AFSA, 2011).

2) The Tasmanian Government, *Food for All Tasmanians: A Food Security Strategy (2012)*

The Tasmanian Food Security Council (TFSC) is an advisory council to the Premier of Tasmania. As government/industry objectives are already well represented, this strategy takes a social inclusion approach to developing local food systems (TFSC, 2012: 4, 6). It focuses on (TFSC, 2012: 4):

Those aspects of food security in community control such as capacity building and local food systems rather than agriculture and aquaculture industry development and protection, water and irrigation schemes, and global forces. These important matters are addressed in specific state and national policies, including the development of a National Food Plan... Food for all Tasmanians offers strategies to connect Tasmanian individuals, families, and communities most in need to local networks of support and increase local food access and supply.

Priority actions include: 1) increase food access and affordability; 2) build community food solutions; 3) regional development and support for food based social enterprises; and 4) planning for local food systems (TFSC, 2012: 12).

3) The Victorian Eco Innovation Lab *Sustainable and Secure Food Systems for Victoria (2008)*

Larsen *et al* (2008: 1) propose response strategies to environmental risks and hazards for the Victorian government which is inclusive of food sovereignty perspectives. Distribution strategies include localisation, farmer's markets, community-supported-agriculture, and urban agriculture (of which community gardens are an integral part).

4) The Australian Heart Foundation, *Food-sensitive planning and urban design (2011)*

A conceptual framework is proposed for achieving a sustainable and healthy food system for Victoria, but can be extended to other States and Territories (Donovan, *et al*, 2011: 4). In addition to mainstream concerns such as ensuring a strong and competitive food economy, it aims to include (Donovan, *et al*, 2011: 10):

- *“making sure we can enjoy attractive, liveable surroundings;*
- *Facilitating major reductions in the environmental footprint of our settlements;*
- *Providing opportunities for stronger community interactions;*
- *Ensuring better shared spaces;*
- *Supporting fair access to the appropriate foods and services people need; supportive environments for active living; and*
- *Making sure these qualities can be provided indefinitely and are resilient to challenges such as peak oil and climate change”.*

5) The Public Health Association Australia (PHAA) *A Future for Food: Addressing public health, sustainability and equity from paddock to plate* (2009).

This report was prepared by the PHAA with specific input and guidance from the *PHAA Food and Nutrition Special Interest Group*, presentations at Population Health Congress held in July 2008 and the PHAA Nutrition Round Table held in June 2008. An unencumbered educational grant from Sanitarium Health Food Company is cited. The PHAA devised *A Future for Food: Addressing public health, sustainability and equity from paddock to plate*, calling for an “overhaul in the way we approach food policy in this country” (PHAA, 2009: 2). In recognition that food policy initiatives to date have been fragmented, they identify and discuss five current dilemmas not covered by industry objectives: 1) inadequacies of current dietary guidelines due to the re-emergence of deficiency related diseases; 2) food policy failure to mediate the rising incidence of obesity and chronic disease; 3) food policy failure to integrate measures of environmental sustainability such as food “life-cycle assessment”. This does not omit the environmental impacts of our food choices including “agriculture, manufacturing, refrigeration, transport, packaging, retail, home and waste”; 4) food policy failure to consider social equity. For example, the cheapest foods tend to be high in added fats, sugars and refined grains, therefore economically disadvantaged groups require support with education on food literacy; and 5) food policy as devised by industry groups should be encouraged to use their marketing skills for the public interest (PHAA, 2009: 5-12).

They put forward a call to action and recommendations to six areas of interest. The PHAA hosts an annual conference to research and discuss these issues listed: 1) Governments: Provide an integrated vision and commitment to food across all areas of government, which has public interest at its core; 2) National Health and Medical Research Council: Adopt a review the guidelines to include environmental and social considerations; 3) Food Industry: Cooperate in the protection and maintenance of health which is ecologically sustainable and socially equitable; 4) Education Sector: Ensure basic food literacy skills in schools and involvement in community-based education initiatives; 5) Public Health and Food Professionals: Advance a National Food Policy in the public interest; and 6) Communities and community based organisations: Become involved with the food debate (PHAA, 2009: 2, 13).

6) The Australian Conservation Foundation (ACF) *Paddock to Plate: Policy propositions for sustainable food and farming systems (2009).*

Authored by Andrew Campbell of Triple Helix Consulting Pty Ltd., the ACF's *Future Food and Farm Project* received funding from the William Buckland Foundation. This project was overseen by the *Reference Group*⁵³ (Campbell, 2009: 35). The *Paddock to Plate: Policy propositions for sustainable food and farming systems* is based on the Victorian context but may be applied more broadly (Campbell, 2009: v). There are five propositions (Campbell, 2009: vi, vii):

- Joint-up governance and leadership on sustainable food and farming: This includes: Integrated governance with clear environmental, social and economic measures and targets; assessment of food system resilience and vulnerabilities; and a green, healthy and fair food procurement policy. They advocate for a *broad based food strategy task force* comprising of industry and representatives across sectors of the food chain including consumer and environmental groups (Campbell, 2009: 9-12);
- Transformed farming, so that it is productive within ecological limits and adapts to global change (Campbell, 2009: 13-18);
- Embedded sustainability through the food value chain: This includes: investment in education, training, innovation and knowledge for sustainable food and networks to support them; improvements in the efficiencies of the food chain through life-cycle analyses (Campbell, 2009: 19-22);
- Food system leadership and engaged communities: This includes: investment in leaders and champions of sustainable food and farming; enable a diet rich in fresh and minimally processed foods; innovative community and commercial enterprises that promote resilience and sustainable food systems; “and thinking” rather than focus on tension angles; and community engagement (Campbell, 2009: 23-25); and
- Planning and design for sustainable, healthy food systems: This includes: Food sensitive urban design; sustainable urban food production; elimination of food deserts; community gardens; roof top gardens; market gardens; fresh food

⁵³ *Reference Group* membership comprises of: Professor of Horticulture and Viticulture, Institute for Land and Rood resources, Melbourne University, Victoria; Senior Business Manager, Fresh Food, Woolworths Ltd., NSW; Restaurateur and Chair, Victorian Women's Trust; Executive Director, Biodiversity and Ecosystem Services, Department of Sustainability and Environment, Victoria; Climate Change Adaptation Group, Department of Sustainability and Environment, Victoria; two Victorian Farmers; Natural Resource Management Consultant, Bendigo, Victoria; Food Policy Officer, Choice, Sydney, NSW; Researcher, Victorian Eco-Innovation Laboratory, Melbourne University, Victoria; Organic Agriculture Consultant, Victoria; Environmental Officer, Dairy Australia Ltd, Victoria; Professor of Environment and Society, University of Essex, UK; and Manager, Sustainable Viticulture, Foster's Group Ltd, Adelaide, SA.

markets; use of peri-urban zones; reduced dependence on fossil fuels; use of rail networks; closing the loop between food and waste; and developing new opportunities to manage transitions toward building resilience (Campbell, 2009: 26-29).

7) Australian and Queensland Red Cross *Food Security Position Paper* (2008)

The *Australian and Queensland Red Cross Food Security Position Paper* warns that “the risk in not taking the broader rights-based approach into account is that it may overlook the issues related to potential future food insecurity related to climate change and oil shortages, which may affect far more of the Australian population than food insecurity currently does” (Borg, 2008: 9). Rights-based approach aims to include food sovereignty perspectives which promote food access as a normal part of community development (Borg, 2008: 2).

Other international responses to national food plans

1) *The Scottish Food Manifesto*

The “Fife Diet” has developed a new *Scottish Food Manifesto* in response to the Scottish Government’s *Food and Drink Policy* in 2009. The manifesto aims to: 1) connect the way we grow, produce, distribute and consume our food with our climate change targets; 2) connect the environmental policy framework to our health and well-being initiatives; and 3) look afresh at the values that underpin how creating more joined up thinking in how we grow, consume and distribute our food and a more diverse economic model (Small and Martinez, 2012: 1). In light of this re-distribution of power, they propose that the term ‘food sovereignty’ replace ‘food security’ as “the guiding principle of our policy, and explore the opportunities for collaborative gains between the agendas of community food and health, affordability and sustainability” (Small and Martinez, 2012: 2).

2) *The People’s Food Plan for Canada.*

The Canadian people’s food policy, launched in 2011 is called *Resetting the Table: A People’s Food Policy for Canada*. This document was developed in response to the Agriculture and Agri-food Canada (AAFC) development of the *Growing Forward II Agricultural Policy Framework (for 2013-2018)*. Additionally, the Canadian Federation of Agriculture (CFA) was working on an industry-led National Food Strategy. The Conference Board of Canada was launching a Centre for Food in Canada, and the Canadian Agri-food Policy Institute has recently released a report calling for a drastic

overhaul of Canadian agricultural policy (Creative Commons, 2011: 7). As with the Scottish context, similar democratic implications are highlighted in the Canadian people's food policy (Creative Commons, 2011: 7): "It is time for strong citizen and civil society involvement in the construction of a new food policy for Canada – a policy which places the well-being of the majority and the health of our planet at the centre of all decisions. It is time to reset the table".

Appendix 6: Food sovereignty movements

Food sovereignty movements serve to re-position consumers as co-producers of food systems through various community-based food initiatives. Values of organic and permaculture farming principles are prevalent. Some main examples include:

1) Slow Food and Eco-Gastronomy Movement

This movement expresses a preference for direct-buying arrangements such as: farmers' markets; the "traceability of food"; the preservation of endangered food and heirloom species which have disappeared from modern diets; and social settings which encourage friends and communities to gather and share in the pleasures of eating together and each other's company (Lyons, 2006: 164).

2) Community-controlled economic development

Community-controlled economic development includes creating: strategic visions for sustainable agriculture (Campbell, 1997); self-reliant communities (Green *et al*, 1992; Shuman, 1998); farmer markets (Larsen and Gilliland, 2009); farmers' markets as small business incubators (Cameron, 2007: 370); and agricultural adaptability by diversifying agriculture and employment and building on farmer's ability to adapt and reorganise (Pingali *et al*, 2005: 14, 15).

3) Community-Supported Agriculture (CSA)

CSA strives to create a direct relationship between farmers and those who eat their produce, such as farm members, shareholders and subscribers (Cone and Myre, 2000; Larsen *et al*, 2008). This can take the form of the 'food-box' model in which communities pay for fresh, seasonal, and local produce up-front to help enable the farmer to grow the produce. The community and farmer share in the successes and failures of the crops. Some CSA members provide distribution points for subscribers to collect their boxes. As Lyons (2006: 164) points out, seasonal dependency requires that subscribers experiment with fruits and vegetables which may be unfamiliar to them. Social bonds are encouraged through projects such as Farm Tours; *Adopt-A-Farmer*, which connects farmers with school children through school garden projects. Local food box systems such as Food Connect and New World Concepts are bringing food into Brisbane city (Borg, 2008: 10-14).

4) Community Food Security (CFS)

CFS is a “place-based politics” which serves to re-situate food security debates toward the benefits of localisation strategies. It strives for developing the ability of community membership to ensure that they have access to healthy, environmentally sustainable, economically viable and a socially desirable food supply chain (Pelletier *et al*, 1999: 401), and to influence broader social, economic and political changes. It converges with justice issues and community-based, local innovations (Gottlieb and Fisher, 1998).

5) Alternative Food Movement (AFM)

Kloppenborg *et al* (2000: 177) agree that an articulation of alternative food systems come primarily from academics and policy specialists rather than the views of producers, consumers and those who constitute the various roles within the movement. To fill this gap, their interviews with 125 people across a broad section of the alternative farm/food community included the following key visions: sustainable food systems which are relational; proximate; diverse; ecologically and economically sustainable; just and ethical; sacred; knowledgeable and communicative; seasonal; healthful; participatory; culturally nourishing; and sustainably regulated.

6) Food Localisation Movement (FLM)

FLM focus is on horizontal, network-based food partnerships rather than reliance on corporate ownership of the food supply chain (Beus and Dunlap, 1990; Kortzen, 1998; Larsen *et al*, 2008; Welsh, 1997), with the aims of providing: increased local employment (Feenstra, 1997; Gale, 1996; Green *et al*, 1992); more direct access to food; and improved nutrition and decreased greenhouse gas emissions from long transport distances (Cleveland *et al*, 2011: 4555). Local NGOs working in localised food sustainability include: Northey Street City Farm with farmers markets and the *Work for the Dole program*, and SEED International (Borg, 2008: 10-14). Localisation also involves education and training efforts such as Growing Communities which provide advice with school and community gardens (Borg, 2008: 10-14).

7) Food citizenship and Soil citizenship

Notions of citizenship as it relates to food involve the practice of food localisation and caring for the ‘place’ of community and environment (Baker *et al*, 2004: 305, 309). This includes transforming people from consumers of food to co-producers of food (Delind, 2002: 223; Esteva and Prakash, 1998).

8) Food democracy and Food justice

Food democracy is the establishment of community food projects and policies which are founded upon democratic practices (Welsh and MacRae, 1998: 246). Food justice is a combination of social justice concerns with anti-hunger agendas which aims to empower community driven action (Fisher, 1997). For example, Lyons (2006: 156) cites the relevance of debates on food-related environmental issues which include genetically modified foods; chemical residues in food; and mad cow disease, which in turn raise debate in the areas of public health, social justices and animal welfare. Fair Trade is an example of appealing to consumer choices which appeal to concerns over justice issues (Lyons, 2006: 156).

Appendix 7: Safety-nets for food disadvantage

Examples of health policy partnerships in joint government/community run food projects in Australia that were referred to in this thesis are listed below. There are many other groups which act as safety-nets around Australia that have not been listed.

1) Foodbank

Foodbank is a “non-denominational community supported, non-profit organisation which relies on the support of a large network” of “food growers, manufacturers and processors”. The concept of Foodbank is to “feed the country's needy by redistributing surplus food”. These food products, “for various commercial reasons, cannot be sold” (Foodbank Queensland Limited, 2012). Foodbank states that “welfare agencies are involved in an on-going struggle to provide food relief to thousands of people who are dependent on food handouts to supplement their welfare benefits”. Foodbank Queensland therefore provides the “link” between food companies and community support agencies (Foodbank Queensland Limited, 2012).

2) The Australian Red Cross

Australian Red Cross initiatives include: 1) Emergency Services; 2) Social inclusion; and, 3) Stronger communities programs which are focused on (Australian Red Cross, 2012a, c):

***“Young people:** Helping young people improve their lives by developing opportunities to strengthen skills, knowledge and confidence;*

***Children and families:** Working with communities to foster safe, strong and resilient families that enable children to learn and reach their full potential;*

***Food security:** Identifying and addressing food security needs and improving eating habits through nutrition education and the provision of food services; and*

***Supporting stronger communities:** Strengthening community capacities and the development of local, sustainable solutions”.*

Red Cross responds to the three pillars of food security: 1) food availability; 2) food access; and 3) food utilisation. Focus is on “developing strategies that address early intervention and prevention initiatives that build resilience along with advocacy and policy approaches that seek to alleviate the systemic issues compounding food insecurity” (Australian Red Cross, 2012b). Primary programs include (Australian Red Cross, 2012b):

“Food supply programs include local food basket surveys, Good Start Breakfast Clubs in primary schools, Soup Patrols, and Meals on Wheel;.

Food Access programs include local analysis of shop locations and transport routes and development of home, school and community gardens;

Food utilisation initiatives include advocating for housing improvements for adequate cooking and storage facilities and education programs such as the FOODcents program which assists people to create healthy meals on a budget; and

An innovative holistic program is the Healthy Baby Healthy Community program supporting food security for pregnant woman and infants in Aboriginal Community”.

3) Anglicare

Anglicare aims to provide counselling, education and services for: Aged care; mental health; youth; family relationships; migrant and refugees; disability care and carers; retirement; and emergency relief and recovery (Anglicare, 2013). Anglicare produced the report, *When there's not enough to eat: A national study of food insecurity among emergency relief clients*, in 2012. The report explored the key findings of a national study into food insecurity with regards to those seeking emergency relief, and what can be done to help. It also gave voice to the experiences of people interviewed at emergency relief services across Australia. It identified the causes of food insecurity and dynamics that influence its severity (Anglicare, 2012).

4) Salvation Army

Similar to Anglicare, the Salvation Army works across a number of social issues including: homelessness; addiction; domestic violence; emergency relief and family support; family tracing; employment; court and prison services; aged care; disability; and asylum seeker support (Salvation Army, 2013). The Salvation Army conducts a Youth Outreach Service Alternate Education Program. They utilise a ‘veggie patch’ for linking at-risk youth with the wider community (Landcare Australia Limited, 2012) (see Appendix 13). With the assistance of a Junior Landcare grant, the ‘veggie patch’ (Landcare Australia Limited, 2012):

Provides an opportunity for young people to get outdoors and be involved in caring for a fruit and vegetable garden. Young people are assisted to learn new skills such as budgeting, planning, healthy eating, socialising skills, cooking, problem solving, ownership and pride. The program provides an opportunity for young people to experience positive and healthy role models, feel a sense of achievement and develop links to the wider community that promote a sense of belonging and acceptance.

Queensland Government Plans which support community-based health agendas

The *Queensland Health Strategic Plan 2007-12*, the *Department of Communities 2010-14 Strategic Plan*, and the *Local Government Association of Queensland (LGAQ) Healthy Communities Project* are three key policies in government support of safety-nets. Details are outlined in Appendix 11.

Appendix 8: Four features of Betterment as a resilience-building activity in the literature

The key features of the betterment approach to social resilience include four broad bodies of literature: 1) self-reliance and self-organisation; 2) inclusiveness and social ties; 3) capacity building, learning and adaptation as developable human qualities; and 4) empowerment and participation. These themes are outlined in the four tables below.

Table 2: Self-reliance and self-organisation

Author	Topic	Definitions, qualities and indicators of resilience
MCPEM-EM, 2008	National Disaster Resilience Framework	<i>Self-reliant communities.</i>
United Kingdom Cabinet Office, 2010	Community resilience	Communities and individuals <i>harnessing local resources and expertise to help themselves</i> in an emergency, in a way that complements the response of the emergency services. Key features include use of: <i>skills, knowledge, motivation and enthusiasm to encourage involvement of others</i>
SDMG, 2010b	Queensland State disaster Management Plan	<i>Self-organisation and self-reliance is needed.</i>
Folke <i>et al</i> , 2002	Building adaptive capacity	Resilience requires <i>self-organisation</i> within systems.
Luthans <i>et al</i> , 2006	Psychological capital	A proactive approach to developing the psychological capital of resiliency in organisations involves <i>strong social support networks</i>
UN, 2005	Disaster risk reduction	Resilience is the degree to which the social system is capable of <i>organising itself</i> to increase this capacity for learning from past disasters for better future protection and to improve risk reduction measures.
Krasny and Tidball, 2009a	Urban environmental education	Resilience in social-ecological systems requires ecological diversity; diverse forms of knowledge; and <i>multiple levels of organisation</i>

Table 3: Inclusiveness and social ties

Author	Topic	Definitions, qualities and indicators of resilience
Luthans <i>et al</i> , 2006	Psychological capital	A proactive approach to developing the psychological capital of resiliency in organisations involves: 1) Reduction of risk via strong social support networks with a culture of trust and reciprocity; and 2) Strengthening the assets of human and social capital such as knowledge, skills and abilities
Enemark, 2006	Pandemics	Resilience requires trust in relationships.
Moore <i>et al</i> , 2004	Community health and Hurricane Floyd	Collective efficacy is a social determinant of disaster preparedness and recovery.
Breton 2001	Neighbourhood resilience	Development of social capital
Poynting, 2006	Violence and the Cronulla riot	Development of social cohesion and sense of community
Maguire and Cartwright, 2008	Social assessment of community capacity to manage change	The resilience approach builds upon the inherent capacities of a community, rather than only relying on external interventions to overcome vulnerabilities.
Krasny and Tidball, 2009a	Urban environmental education	Resilience in social-ecological systems requires ecological diversity and diverse forms of knowledge .
United Kingdom Cabinet Office, 2010	Community resilience	Include communities and individuals so they may harness local resources and expertise to help themselves in an emergency, in a way that complements the response of the emergency services.

Table 4: Learning and adaptation as developable human qualities

Author	Topic	Definitions, qualities and indicators of resilience
Brooks, 2003	Adaptive capacity	Adaptive capacity is the ability or capability of a system to modify or change its characteristics or behaviour to cope better with actual or anticipated stresses.
Manyena, 2006	Social resilience	Ecosystem resilience is the capacity to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary. Resilience in social systems has the added capacity of humans to anticipate and plan for the future.
Horne and Orr, 1998	Organisations and behaviour	Resilience is a fundamental quality of individuals, groups and organisations, and systems as a whole to respond productively to significant change that disrupts the expected pattern of events without engaging in an extended period of regressive behaviour.
Comfort, 1999	Seismic responses	The capacity to adapt existing resources and skills to new systems and operating conditions.
Mallak, 1999	Healthcare	Resilience is the ability of an individual or organisation to expeditiously design and implement positive adaptive behaviours matched to the immediate situation, while enduring minimal stress.
Tugade and Fredrickson, 2004	Psychological characteristics of individuals	Individuals are more flexible to changing demands, and are open to new experiences.
Valdovinos <i>et al</i> , 2010	Ecology	Fitness-enhancing changes or adaptive foraging in the feeding-related traits on individuals due to variation in their trophic environment. This modulation in feeding relationships within the structure and dynamic of food webs provides resilience and resistance of networks against perturbations thus enhancing community stability
Wildavsky, 1991	Searching for safety	Resilience is the capacity of cope with unanticipated dangers after they have become manifest and learning to bounce back.
Luthans, 2002	Psychology of positive organisational behaviour	Developable capacity to rebound or bounce back from adversity and conflict.
Paton <i>et al</i> , 2000	Disaster response	Resilience describes an active process of self-righting, learned resourcefulness and growth. The ability to function psychologically at a level far greater than expected given the individual's capabilities and previous experiences.

Folke <i>et al</i> , 2002	Building adaptive capacity	Resilience requires the ability to build and increase the capacity for learning and adaptation .
UN, 2005	Disaster risk reduction	Resilience involves increased capacity for learning from past disasters for better future protection and to improve risk reduction measures.
Krasny and Tidball, 2009a	Urban environmental education	Resilience in social-ecological systems requires adaptive learning .
Maguire and Cartwright, 2008	Social assessment of community capacity to manage change	<p>Adaptation is a response or adjustments in behaviour to a stressor, adaptive capacity is the ability to take those actions.</p> <p>A resilient community is able to employ its resources and its adaptive capacities in a proactive and pre-emptive way, whereas a less resilient community may only be able to take action after the change has had an impact" if at all.</p> <p>Resilience requires stability, recovery and transformation.</p> <p>Resilience as transformation is concerned with concepts of renewal, regeneration and re-organisation. Disturbance provides an opportunity of doing new things, for innovation and development.</p>
MCPPEM-EM, 2008	National Disaster Resilience Framework	Some resilience themes: adaptation; change; learning; innovation; skills and resource development .
SDMG, 2010b	Queensland State disaster Management Plan	The capacity of systems and communities to be resilient requires capacity for learning and behaviour change

Table 5: Empowerment and participation

Author	Topic	Definitions, qualities and indicators of resilience
Teague <i>et al</i> , 2008	The Victorian Bushfires Royal Commission	What is required is a shared responsibility , which means increased responsibility for all across agencies, councils, advisory bodies, communities, individual and households.
Ink, 2006	Review of Hurricane Katrina reports	Leadership qualities. Constructive flow of information.
Clauss-Ehlers and Lopez-Levi, 2002	Counteracting social distress and violence	Enhanced community involvement increases resilience
Krasny and Tidball, 2009a	Urban environmental education	Community participation enhances resilience.
United Kingdom Cabinet Office, 2010	Community resilience	Awareness and understanding of risks and how these link with their local area. Active involvement in decisions affecting them. The use of skills, motivation and enthusiasm to encourage involvement of others.
Luthans <i>et al</i> , 2006	Psychological capital	A proactive approach to developing the psychological capital of resiliency in organisations involves enhancing processes that contribute to efficacy, confidence and feelings of success.
Folke <i>et al</i> , 2002	Building adaptive capacity	Resilience is the ability to cope with, adapt to and shape change.
Oxfam, 2005	Tsunami impacts on women	Requires an appreciation of norms, attitudes and values.
MCPEM-EM, 2008	National Disaster Resilience Framework	Engagement with and empowerment of communities. Developing shared understandings.
SDMG, 2010b	Queensland State disaster Management Plan	Community awareness Preparedness Willingness to take action

Appendix 9: Community and school garden groups and city farms

Community and school gardens as listed by Brisbane City Council

Name	Location	Facilities
Acacia Ridge Community Garden	Acacia Ridge	Community garden
Aspley Special School Garden	Zillmere	School garden
Balaangala Indigenous Food Garden	The Gap	Community garden
Banyo Community Garden	Banyo	Community garden
Beelarong Community Farm	Morningside	Community garden
Bulimba Creek Catchment Co-ordinating Committee	Carindale	Community garden
Bulimba State School Garden	Bulimba	School garden
Burnie Brae Park	Chermside	Community garden
Carindale PCYC	Carina	Community garden
Centacare North East Community Care	Northgate	Community garden
Coorparoo Community Garden	Coorparoo	Community garden
Crossroads Community Garden	Chermside West	Community garden
Delaware Street Community Garden	Geebung	Community garden
Golden Years Seniors Centre	Nyndah	Community garden
Graceville/Sherwood Community Garden	Graceville	Community garden
Green Corner Community Garden	Ashgrove	Community garden
Green P Community Garden (PCYC)	Deagon	Community garden
'Grow for Life' Abbeville Street Community Garden	Upper Mt. Gravatt	Community garden
Inala Community Garden (Spiritus Early Parent Centre)	Inala	Community garden
Inspiration Garden	Morningside	Community garden
Jane Street Community Garden	West End	Community garden
Jeay's Street Community Garden	Bowen Hills	Community garden
Kelvin Grove Community Garden	Kelvin Grove	Community garden
Koala Park Community Garden	Moorooka	Community garden
Kyabra Street Community Garden	Runcorn	Community garden
Lyons Playground	Highgate Hill	Community garden
Northey Street City Farm	Windsor	Community garden
Nyanda State High School Garden	Salisbury	School garden
Paradise Street Community Garden	Highgate Hill	Community garden
Rocks Riverside Park	Seventeen Mile Rocks	Community garden
Sandbag Community Garden	Sandgate	Community garden
St Clements Church Garden	Stafford	Community garden
The Pocket Community Garden	East Brisbane	Community garden
Vera Street Community Garden	Toowong	Community garden

Wynnum Manly Community Garden	Lota	Community garden
Yoorala Street Community Garden	The Gap	Community garden
Brisbane Local Food	http://brisbanelocalfood.ning.com/	Social network
Brisbane Organic Growers Inc		Gardening information and support groups

Source: Brisbane City Council (BCC) (2013)

Australian City Farms and Community Gardens Network

The Australian City Farms and Community Gardens Network is an informal, community-based organisation which serves to connect community gardeners around Australia. The aims of the network include: “facilitating the formation and management of community gardens and similar social enterprise by making available information and, where possible, advice; and promoting the benefits of community gardening and urban agriculture” (ACFCGN, 2012). Nettle and the ACFCGN (2010) have also provided a handy annotated bibliography of community gardens and city farms in Australia.

Appendix 10: Local government agencies: Planning perspectives on land-use and localising food

1) The Brisbane City Plan

As a formal statement of proposals for the Brisbane City Plan 2000 review, it aims to work with *Brisbane City Shape 2026* which presents the big picture for the way Brisbane should develop (BCC, 2009b: 1, 2011a). With recognition of climate changes, population growths and diminishing resources, the plan builds upon eight visions as outlined in *Our Shared Vision: Living in Brisbane 2026* (BCC, 2009b: 1, 6; BCC, 2006). These include:

1. Regional and world city

With the population of South East Queensland expected to grow to 3.77 million by 2026, the need to manage the urban footprint is recognised (BCC, 2009b: 7);

2. Smart and prosperous city

With economic expansion and urban residential growth in mind, a range of options such as re-zoning land for encouraging the better use of land is considered (BCC, 2009b: 8);

3. Well-designed, subtropical city

The need for urban villages where “everything is within walking distance” is identified as important for generating a mix of activities; sense of community; ensuring access to open space; and creating healthy communities (BCC, 2009b: 10, 11);

4. Clean and green city

The pressures of climate changes require energy and water efficient developments as a part of Neighbourhood Plans and their implications for urban village design for recreation and landscaping (BCC, 2009b: 12);

5. Accessible, connected city

Walking and cycling infrastructure are identified as important to “offering residents real alternatives to their car” (BCC, 2009b: 14);

6. Active and healthy city

Opportunities for residents to “grow their own food and buy locally grown, fresh, healthy and affordable produce” is identified in addition to walking and cycling as part of an active, healthy life. Here, Brisbane aims to be “the city of walks” with walking and cycling paths within urban villages and connecting them. Two new directions for the city include (BCC, 2009b: 15): 1) How to facilitate the production of food in the city. Ways to promote urban rooftop farms, home based agricultural businesses and

edible landscapes in medium- and high-density developments; and 2) How to encourage innovative ways of greening Brisbane such as growing food in the city, plants of roofs and down the side of walls, supporting outdoor markets and increasing the number of street trees. This may require removing barriers presented by existing provisions.

7. Vibrant, creative city

It is acknowledged that “outdoor community spaces, whether they are parks, small seating areas or even a community garden, give people places to enjoy, keep active and engage in artistic pursuits”. New directions include recognition of local and unique neighbourhood characters and the need for outdoor spaces for celebration, markets and creative activities. These should be in locations “where there are a higher proportion of children, teenagers or older people” with better planned consideration of them (BCC, 2009b: 16); and

8. Friendly, safe city

Preservation of a “small town” feeling and unhurried lifestyle with a sense of community safety is seen as important. Encouraging demographic diversity and reducing the risks of social isolation and disadvantage highlights the role of the: aged; disabled; students, young couples, single parent families and low income earners (BCC, 2009b: 17). The potential impacts of climate changes and natural hazards are considered, and the importance of social infrastructure is identified (BCC, 2009b: 18).

2) Our Shared Vision: Living in Brisbane 2026

Our Shared Vision: Living in Brisbane 2026 outlines visions to guide planning policy in Brisbane (BCC, 2009b: 1, 6; BCC, 2006). A range of urban agricultural opportunities are identified along with the need for social inclusion and resilience. They include:

1. Well-designed, subtropical city

Localised food initiatives such as neighbourhood food gardens and roof gardens are an aspiration (BCC, 2006: 22). Harvesting of rain through “rain gardens” is seen as a contribution to the idea of “working landscapes” and “nature-smart green streets” (BCC, 2006: 23);

2. Clean and green city

Roof top gardens are seen as a smarter and more efficient way to cool the city due to climate changes and contribute to cleaner air quality (BCC, 2006: 16, 18);

3. Accessible, connected city

A network of “greenways” consisting of safe laneways, walkways and bikeways for pedestrians, cyclists, wheel chairs, prams and micro-electric vehicles is integral to the other visions (BCC, 2006: 26); and

4. Active and healthy city

Urban villages are seen as important to the development of active, healthy lifestyles. The idea of “clustering homes, jobs, shops, places to socialise and other community facilities near each other so everything is within a comfortable walking distance” is important (BCC, 2006: 32). Key aspirations include: the *Food in the City* initiative. Here, the vision for Brisbane is to have a “network of community gardens and city farms in parks, schools and community facilities”. It is aimed that, “residents will have fun growing their own food, and sharing their access to fresh, healthy and affordable food. Community gardens and city farms will also “bring together people from different cultures and connect them to their local communities” (BCC, 2006: 34). Other aspirations include: walk-ability; active and vibrant village life; reduce depression particularly of young people; and reduce public health risks (BCC, 2006: 35).

3) Brisbane’s plan for action on climate change and energy 2007

Brisbane’s plan for action on climate change and energy 2007 outlines strategic and land-use planning actions which include consideration of local food production in conjunction with mixed use urban villages and walking networks. In line with this is the action to: “encourage and actively promote urban agriculture and amend the City Plan and Local Laws as necessary to reduce barriers to food production within the city” (BCC, 2007: 10-11). In terms of the diversification and conservation of natural resources, one action item is to: “balance carbon sequestration objectives with the need to retain viable local food production in view of peak oil implications for food accessibility” (BCC, 2007: 16). Finally, in terms of research, action items involve: “feasible means for adopting green roofs in Brisbane (e.g. roof top gardens and horticultural production); and “expanding city farms to encourage local food production” (BCC, 2007: 18).

4) WaterSmart Strategy

Brisbane City Council’s *WaterSmart Strategy* values the principles of community adaptiveness and resilience given the pressures of climate and population changes (BCC, 2012c: 11). This strategy dovetails with *Our shared vision: Living in Brisbane 2026* in its aspiration for community: connectedness; engagement; safety; learning;

information; health and activity; cooperative governance; and *Food in the City* (BCC, 2012c: 16). The role of community gardens; schools; strong relationships; multi-use spaces; community self-reliance; improving resilience; and producing a larger agenda for *Food in the City* are emphasised as integrated to community management of water resources (BCC, 2012c).

5) The Brisbane clean air strategy

The Brisbane clean air strategy outlines the need for actions which “adopt natural solutions to improve the quality of air we breathe through rooftop gardens... [and] urban forests” (BCC, 2012b: 7).

6) The Green Heart Program

The *Green Heart Program* implements Brisbane City Council's policy *Growing a Green Heart Together*, that aims to encourage opportunities for involvement in neighbourhood planning and a culture of sustainability. Actions within schools; volunteers; homes; business; and council cover strategies for sustainable management of water; air quality; climate change; energy use; biodiversity; waste; transport; and the *Food in the City* agenda (BCC, 2012a).

7) Brisbane City Council's Food in the City Strategy

The aim is that by the year 2026, “residents will have fun growing their own food and sharing their access to affordable food” (BCC, 2011b). The targets are to: increase resident and community participation in food gardening; increase economic value of food gardening and local processing; reduce its food miles (food miles are the vehicle kilometres travelled by food before it gets to the table) (BCC, 2011b). Communities are encouraged to: grow herbs and salad greens at home; buy fruit and vegetables from local farmers markets; contribute to a community garden; start a local food production, processing or servicing business; learn about sustainable living in the city by visiting the Northey Street City Farm; apply for a community grant to start a new venture; and interact with other network such as “Brisbane Local Food” and the “Australian City Farms and Community Gardens Network” (BCC, 2011b).

Brisbane City Council's plans and strategies, projects, programs and initiatives include: *Community Gardens Strategy*; more community gardens planned; *Food in the City* is a key component of both the *Green Heart* and the *Green Choice Gardening* awareness raising campaigns; and provision of grants and funding programs (BCC, 2011b).

8) Community Gardens and City Farms Strategy 2009

Brisbane City Council published a *Community Gardens and City Farms Strategy* in 2009 which is currently not available on their website. Given the guiding visions of *Our Shared Vision: Living in Brisbane 2026*, the purpose of the strategy was to “provide a clear framework for planning, development and management of community gardens and city farms in Brisbane” (BCC, 2009a).

9) Local Government Association of Queensland (LGAQ) Healthy Communities Project

Local governments are on the frontline in emergency management and best placed to know what’s right for their communities. Local government have a lead role in addressing local level issues through: Engaging and supporting local people; Shaping local places; Delivering local programs; and, Implementing local plans and policies (LGAQ, 2011b: 1). The LGAQ *Healthy Communities Project* is funded by Queensland Health to build the capacity of Queensland’s local governments to create healthy communities as an integral part of council business (LGAQ, 2011b: 1). The Queensland Government with the Heart Foundation developed the *Active, healthy communities: A resource package for Local Government to create supportive environments for physical activity and healthy eating* (2010). It acknowledges that food accessibility is a key issue in obtaining a healthy diet. Some environmental characteristics which need consideration include: proximity of food outlets; availability of farmer’s markets; and access to markets and community gardens (Queensland Government and Heart Foundation, 2010: 10, 11). Suggestions for the future planning of healthy eating include: community-supported local food systems and agriculture; residential unit development codes which cater for this; improved Geographical Information Systems (GIS) and analysis tools of food accessibility and food deserts; and funding avenues (Queensland Government and Heart Foundation, 2010: 12-13). For more details on LGAQ connections with community health policies see Appendix 11 and for connections with building disaster resilience see Appendix 1.

Appendix 11: Community-based health policies

With the change of State government in 2012 many of the plans below are being reviewed. The State government frameworks set up by the Labor government supported many of these local government initiatives. Now that the State government has changed there is the question of whether these policies and plans will survive.

1) Local Government Association of Queensland (LGAQ) Healthy Communities Project

The LGAQ *Healthy Communities Project* is funded by Queensland Health to build the capacity of Queensland's local governments to create healthy communities as an integral part of council business (LGAQ, 2011b: 1). The Queensland Government with the Heart Foundation developed the *Active, healthy communities: A resource package for Local Government to create supportive environments for physical activity and healthy eating* (2010). It acknowledges that food accessibility is a key issue in obtaining a healthy diet (Queensland Government and Heart Foundation, 2010: 10-11).

2) Queensland Health Strategic Plan 2007-12

The *Queensland Health Strategic Plan 2007-12* forms the Department of Health's response to the previous Government's *Towards Q2 Healthy* target to cut obesity by one third in addition to smoking, heavy drinking and unsafe sun exposure. Known to be caused by unhealthy lifestyle, the challenge is to address the increase of obesity as a preventable disease forms one of four strategic priorities for Queensland Health - "Making Queenslanders Healthier" (Qld Health, 2011). This strategic priority has two relevant objectives to developing social resilience for food security. They are: 1) support health behaviour and life style choices to reduce the population rates of overweight and obesity; and 2) protect the health of Queenslanders through the management of preventable environmental health hazards (Qld Health, 2011). Therefore, the 2010 to 2011 key strategies include (Qld Health, 2011):

- 1) Provision of a range of targeted promotion and prevention programs and interventions focussing on improving nutrition and increasing physical activity, and reducing the rates of obesity;
- 2) Lead and coordinate whole-of-government initiatives to reduce chronic disease in the community; and

- 3) Improve the coordination of responses to outbreaks, natural disasters and other environmental hazards.

The 2010 to 2011 key performance indicator is the percentage of the Queensland population who therefore consumes recommended amounts of fruit and vegetables and engages in levels of physical activity for health benefit. To this end Queensland Health recognised the challenge of “changing the community’s focus to the prevention of illness and maintenance of good health” and “establishing meaningful and measurable outcome indicators for complex health and community services” (Qld Health, 2011). Queensland Health aims to “work in partnership” and “enable and support change in the health system”. It is recognised that “achieving a collective and coordinated response across multiple levels and complexities of government” will be a strategic challenge (Qld Health, 2011).

3) Department of Communities 2010-14 Strategic Plan

The *Department of Communities 2010-14 Strategic Plan* aims to provide integrated community services that strengthen Queensland. The plan aims to adhere to the *Community Services Act 2007*, the main objective of which is to “help build sustainable communities by facilitating access by Queenslanders to community services” (State of Qld, 2010: 7). The plan aims to address the previous Government’s *Toward Q2* agenda across all five ambitions with the delivery of services among minority groups and their concerns such as (Dept. of Communities, 2011):

- *“Encourage more participation in sport and recreation activities and lead more active lifestyles. This includes individuals and families whose health and wellbeing is at risk as they are not physically active. Schools and local governments are seen as key partners in the provision of facilities;*
- *Promoting child-safe communities;*
- *Provision of development and leadership opportunities for young people at risk of entering the youth justice system;*
- *Advocate for social inclusion of multicultural communities including islanders and aboriginals. This includes providing a whole-of-government leadership in multicultural policy and engagement with ethnic communities. Initiatives and events should promote the benefits of multicultural diversity and harmonious community relations, including anti-racism and enabling reconciliation;*
- *Provide services which enable people with disabilities and mental health illness to live and participate in the community;*
- *Breaking legacies of disadvantage through coordinated and place-based approaches;*
- *the homeless;*
- *Support, recognise and promote women’s social and economic participation;*
- *Community participation of seniors;*
- *Linking clients to education and employment opportunities;*
- *Providing community recovery responses to natural and other disasters; and*

- *Partnering and working with all levels of government, the private and NGO sectors on integrated and targeted renewal initiative in priority local communities which build capacity, drive service reform and respond to local needs”.*

4) Australian Government’s Department of Families, Housing, Community Services and Indigenous Affairs’ (FaHCSIA) Social Inclusion Policy

The Australian Government’s Department of Families, Housing, Community Services and Indigenous Affairs’ (FaHCSIA) recognise increasing social, civil and economic participation as a key aspiration principle for social inclusion. The aim is to help “everyone get the skills and support they need so they can work and connect with community, even during hard times” (FaHCSIA, 2011: 1).

Appendix 12: School-based education through government agencies and community groups

As previously stated, with the change of State government in 2012 many of the plans are being reviewed and action on climate change has been curtailed. The State government frameworks set up by the Labor government supported many of these local government initiatives. Now that the State government has changed there is the question of whether these policies and plans will survive.

Government initiatives

1) Queensland Environmentally Sustainable Schools Initiative (QESSI) 2005-2007 Strategic Plan

The *Queensland Environmentally Sustainable Schools Initiative* (QESSI) 2005-2007 forms the strategic plan by the QESSI Alliance. The Alliance was prepared in partnership between the Queensland Government's Department of Education and the Arts and Sustainable Futures Australia. Otherwise known as the *QESSI Alliance Strategic Plan*, the aim is to "establish an effective strategic framework for coordinated action" in delivering and supporting environmental education for sustainability in all schools in Queensland, and encouraging these schools to become environmentally sustainable (QESSI Alliance, 2005: a-1). This plan seeks to support and encourage the *National Action Plan* (NAP) (1999) as outlined next.

2) Department of the Environment, Water, Heritage and the Arts' (DEWHA) (2009) *Living Sustainably: The Australian Government's National Action Plan for Education for Sustainability*

The Australian Government's Department of the Environment, Water, Heritage and the Arts' (DEWHA) (2009) produced *Living Sustainably: The Australian Government's National Action Plan for Education for Sustainability* as the guiding strategy for reorienting education systems to sustainability, be they vocational, universities or schools (DEWHA, 2009: 21). Education for sustainability is based on the following principles (DEWHA, 2009: 9):

Transformation and change – equipping people with skills, capacity and motivation to plan and manage change; Education for all and lifelong learning – learning is for all ages and stages of life and occurs in formal and informal spaces; Systems thinking – to understand connections between environmental, economic, social and political systems; Envisioning a better future – developing a shared vision for a sustainable future; Critical thinking and reflection – reflecting on personal experiences and world views and challenging accepted ways of interpreting and engaging with the world;

Participation; and, Partnerships for change – building networks and relationships to improve communication between different sectors of society.

The vision of the plan is that all Australians have the awareness, knowledge, skills, values and motivation to live sustainably. In line with this, the four strategies include (DEWHA, 2009: 17):

1. Demonstrating Australian Government leadership through coordinated actions and integration of the principles into national initiatives (DEWHA, 2009: 19);
2. Reorienting education systems to sustainability: This involves the incorporation of sustainability with vocational education and training and university courses; and whole-of-school and whole-of-system approaches to education for sustainability through widespread uptake of: The *National Environmental Education Statement for Australian Schools*, which outlines the nationally agreed description of the nature and purpose of environmental education for sustainability through all years of learning (DEH, 2005: 1); and implementation of the *Australian Sustainable Schools Initiative* (AuSSI). The AuSSI outlines the development of *School Environmental Management Plans* (SEMPs) as the avenue for this end and its application for curriculum and community participation (DEWHA, 2010: 1-6; DEWHA, 2009: 21);
3. Fostering sustainability in business and industry (DEWHA, 2009: 25); and
4. Harnessing community spirit to act: This involves: provision of tools and resources for training and capacity building for sustainability; capacity building for local government to provide increased opportunities for training and mentoring; access to case studies and resources; coordinate and network; best practice community education for sustainability; and sharing of inspirational sustainability stories which transform community concern into action (DEWHA, 2009: 26, 27). Harnessing community spirit to act resonates with the United Kingdom's *Building Community Resilience through Schools* project as a key project in their community resilience programme (UKCO, 2010: 15).

3) Queensland Department of Education and Training Strategic Plan 2010-2014.

The *Department of Education and Training Strategic Plan 2010-2014* is the lead document for addressing the previous government's *Toward Q2 "Smart Ambition"* for delivering world-class education and training. The purpose of the plan is to "provide Queenslanders with the knowledge, skills and confidence to maximise their potential, contribute productively to the economy and build a better Queensland". A key value is to develop "healthy, safe and sustainable environments" (DET, 2010: 1). The objective for school children includes "laying strong educational foundations". It is

aimed that “every young Queenslander will be prepared with the educational foundations to support successful transitions to further education, training and work”. Key strategies of relevance include: 1) Positive schools and students: This involves the following actions: to implement focused strategies to teach social and emotional literacy; and to support children’s holistic well-being through fostering skills and attributes that encourage them to be healthy, green and fair citizens; 2) Quality teaching and learning. This requires support of student engagement and learning through the provision of quality curriculum and rich learning experiences; and 3) Parent and community partnerships. This involves the implementation of parent and community engagement strategies that support improved student outcomes. Helping parents and carers to become involved in their child’s learning is needed (DET, 2010: 7).

International initiatives

1) The Earth Charter Initiative

Australia’s national plan recognises the *Earth Charter Initiative* which is to “promote the transition to sustainable ways of living and a global society founded on a shared ethical framework that includes respect and care for the community of life, ecological integrity, universal human rights, respect for diversity, economic justice, democracy, and a culture of peace” (Earth Charter International, 2009: 1).

2) United Nations Decade of Education for Sustainable Development 2005-2015 (UNDESD)

Australia’s national plan also recognises the *United Nations Decade of Education for Sustainable Development 2005-2015* (UNDESD), that calls for the integration of the principles, values and practices of sustainable development into all aspects of education and learning. As such, it “reorients traditional educational approaches” towards: interdisciplinary and holistic learning; values-based learning; critically reflective thinking; multi-method approaches; participatory decision-making; and locally relevant information (ARIES, 2009: 2).

3) International Disaster Resilience Strategy (ISDR) (2005)

From a disaster resilience approach, the *International Disaster Resilience Strategy* (ISDR) recognises the UNDESD (UN, 2005: 9). The ISDR calls for the inclusion of disaster risk reduction knowledge within school curricula and other informal channels in order to reach children and youth with information (UN, 2005: 10). The ISDR

identify schools as key spaces for protecting and strengthening “critical public facilities and physical infrastructure” through “thorough proper design, retrofitting and re-building” in order to see these spaces as appropriately resilient to hazards (UN, 2005: 11).

Community groups

These community groups represent the community spirit to act on behalf of the AuSSI agenda for ‘education for sustainability’. They are resonant with Davis and Ferreira’s (2009: 67) call for a “webbed network approach” to AuSSI whereby “all participants are recognised as ‘knowing experts’, learning and acting together around contextualised issues and problems”.

1) Food Connect Brisbane

The Food Connect model is based on the principles of Community Supported Agriculture, whereby the seasonal produce comes from local farmers living within a short radius of the city Homestead, it is packed into boxes, and collected by our subscribers from a network of City Cousins (distributors) pick-up points (Food Connect, 2012a). Food Connect Brisbane also supports school gardening projects through the *Adopt-A-Farmer Program*. This supports local food by connecting a farmer with a school, whereby the farmer plays a central role in school gardening projects (Food Connect Brisbane, 2012b).

2) Northey Street City Farm

Northey Street City Farm (NSCF) is a non-profit community organisation situated on a four hectare farm site in Windsor, Brisbane, since its inception in April 1994. The purpose of the farm is for people’s enjoyment and participation permaculture practices and principals. As such it functions as a demonstration site where people can learn through hands on experience (NSCF, 2012a). School gardening is encouraged through organised school tours of the farm. NSCF is designed as a ‘living classroom’ where a range of educational activities for all age groups and school pedagogies is offered. Students have an opportunity to learn about permaculture and experience urban farming. These activities are designed to work across curriculum and fit a number of learning outcomes related to: Science; Technology; Art; Health and Physical Education (HPE); and Studies of Society and the Environment (SOSE) (NSCF, 2012b).

3) Growing Communities

Growing Communities is a not-for-profit organisation that advocates the education of sustainability and healthy living through productive gardens in Queensland communities and schools. Based on permaculture principles and systems thinking, they encourage the “development of sustainable agricultural practices in urban areas that promote the cultural richness of food, plants and people”. This entails “close collaboration with a wide range of people” as a way of “developing accessible solutions that address the big issues of sustainability, food security and nutrition”. The services include consultation, design, implementation and support of school and community gardens; promotion and management of school garden networks; and the design and delivery of skills development and training through seminars, workshops and professional development programs (Growing Communities, 2012a). Like Food Connect and Northey Street City Farm, Growing Communities is therefore both a community group and a source of education.

The school garden is considered to be “an essential tool for developing transformative, participative, holistic and sustainable practices”. Therefore, a whole-school approach to learning in, about and for the environment is sought through the use of the garden space. The garden is a “dynamic, integral and sustainable component of all parts of the school system: the way in which the school is organised and operates, the design of its natural and built environments, its management of resources, and the orientation of the curriculum”. It is aimed that gardening in schools will enhance students’ learning experiences by (Growing Communities, 2012b):

Empowering them to take the initiative and responsibility for social and environmental change; Developing knowledge and understanding of food and nutrition; Using innovative, authentic and meaningful teaching and assessment strategies; Catering for the different needs and abilities of learners in engaging and motivating ways; and, Embedding sustainability throughout the school and local community.

4) Biological Farmers Australia

The Biological Farmers Association (BFA) was “initially formed to progress the interests of farmers who wished to promote and protect the message of organics, including the setting of organic standards”. This involves “working with industry for industry”, and the BFA offers a range of services to the organic industry members from farm through to retail (BFA, 2012b). Additionally, the BFA provides on-line support for community gardening through advice with gardening tips and hints (BFA, 2012c). The BFA Organic Schools Gardening Program is a free resource which “provides a range of lessons on organic gardening designed to be utilised by

teachers at a primary school level or anyone with an interest. The program is structured for students aged 8 -12 years and provides written materials for lessons taking place both inside and outside the classroom". The following initiatives links school gardening with businesses: "*Adopt-a-farmer* – aims to link schools with farms for organic food and education; and *Local school local heroes Program* – aims to create opportunities for schools to build partnerships with local businesses and community organisations and members" (BFA, 2012a).

5) Stephanie Alexander Kitchen Gardens

A well-known school garden program is the *Stephanie Alexander Kitchen Garden Program* that began in 2001. It has now been adopted in 267 primary schools across Australia. Each garden therefore "builds invaluable knowledge and understanding of food and of the integral role it plays in our physical and social wellbeing" (Stephanie Alexander Kitchen Garden Foundation, 2013b). The philosophy is, "that by setting good examples and engaging children's curiosity, as well as their energy and their taste buds, we can provide positive and memorable food experiences that will form the basis of positive lifelong eating habits" (Stephanie Alexander Kitchen Garden Foundation, 2013a).

6) Green Cross Australia

Green Cross is a "Networking Enabling Organisation" (NEO) focused on resilience and climate change adaptation (Green Cross, 2012b). Green Cross aims to "help people to adapt to our changing climate, in ways that embrace sustainability and community resilience". Over 30 Green Cross offices around the world work towards this vision. Green Cross is not an advocacy group - rather they work with business, research, community and government partners to "deliver world-class digital projects that foster a global values shift towards a secure and sustainable future" (Green Cross, 2012a). Relevant school projects include (Green Cross, 2012a):

Green Lane Diary: We inspire primary school children to take every day actions to make a difference through our award winning environmental education program; and, Future Sparks: We raise awareness about clean energy options for the future through a national video competition for school children.

Appendix 13: Youth-based training

As previously stated, with the change of State government in 2012 many of the plans are being reviewed and action on climate change has been curtailed. The State government frameworks set up by the Labor government supported many of these local government initiatives. Now that the State government has changed there is the question of whether these policies and plans will survive.

Government policies

1) Queensland *Department of Education and Training Strategic Plan 2010-2014.*

The purpose of the plan is to “provide Queenslanders with the knowledge, skills and confidence to maximise their potential, contribute productively to the economy and build a better Queensland” (DET, 2010: 1). In terms of youth training the objective includes “developing skills for the economy” It is aimed that “Queenslanders will be skilled to maximise their opportunities and productively contribute to Queensland’s economy” (DET, 2010: 8). A key strategy is “youth transitions and attainment”. Here, providing multiple pathways and diverse learning experiences to engage senior students and increase Year 12 attainment is sought. Development and support of more effective pathways from school, between school and tertiary education and training institutions, and into work is desired. The DET (2010: 8) aims to work in partnership with the Australian government to “deliver increased learning and training opportunities to all Queenslanders”.

2) Queensland Department of Employment, Economic Development and Innovation (DEEDI) *Skilling Queenslanders for Work*

The Department of Employment, Economic Development and Innovation (DEEDI) produced the *Skilling Queenslanders for Work* document as a key component of the *Queensland Skills Plan*. *Skilling Queenslanders for Work* aims to “give workers the right mix of training, vocational skills and associated assistance to be part of Queensland’s 21st century workforce” (DEEDI, 2011b: 2). Through the *Community Employment and Infrastructure Program*, people who have significant barriers to employment and are at risk of long-term unemployment are eligible for training assistance (DEEDI, 2011b: 4). A relevant initiative operating under the program is Queensland’s *Green Army*. The objective is to create jobs and help the environment through the conservation and restoration of the natural environment, green spaces and recreational areas. Eligible participants to become a Green Trainee include:

younger jobseekers (15-24 years); the long-term unemployed; and, out of trade apprentices (DEEDI, 2011b: 5). *Skilling Queenslanders for Work* aims to be a “flexible initiative, responsive to the ever changing economic climate”. The projects are run by community organisations, local councils and State Government agencies (DEEDI, 2011b: 5). The Local Government Association of Queensland (LGAQ) advise that *Green Army* workers could “provide unskilled labour with rebuilding of community organisations affected by flooding under the supervision of qualified building staff” (LGAQ, 2011a, 1).

Community groups

1) Volunteering Queensland

Volunteering Queensland is Queensland’s lead agency in volunteering. The mission is to: 1) advocate for inclusive participation in Queensland; 2) enable volunteering through research, sector development and partnerships; and 3) recognise the value of volunteering to sustain vibrant and healthy communities (Volunteering Queensland, 2012c).

The *Youth Communications and Resilience Project* offer ‘Resilience Sessions’ that are one-hour activities aiming to engage high school students about disaster preparedness in a fun and meaningful way. The sessions may be delivered as a part of the *Resilience Ambassadors Initiative* and *Certificate II in Active Volunteering*. Students gain the opportunity to become ‘Resilience Ambassadors’ who will be able to further facilitate the session they attended for other students or community groups (Volunteering Queensland, 2012b). As such this project adds to the *Department of Education and Training Strategic Plan 2010-2014* for youth transitions and attainment (DET, 2010: 8).

2) Green Cross Australia

Green Cross Australia works with youth interests to help build social resilience as a form of disaster resilience. The relevant youth project is the *Extreme Weather Heroes*. Green Cross state that, “we work with young people to inspire a new generation of Australians to become emergency volunteers using the power of social networking” (Green Cross, 2012a).

3) Food Connect Brisbane

Food Connect Brisbane supports employment of marginalised people. Through sponsorship by Social Ventures Australia and Brisbane Youth Service, the industrial kitchen employs people who find it hard to enter the workforce, including indigenous people, at-risk young people, people post-incarceration, and people with disabilities. The goal is to guide marginalised people into the workforce with a good work ethic and help them find their strengths in an employed role. Other functions of the kitchen include: catering; cooking classes; and pantry products (Food Connect Brisbane, 2012c). As such, Food Connect Brisbane adds to the Queensland Department of Employment, Economic Development and Innovation (DEEDI) *Skilling Queenslanders for Work* agenda as outlined through the *Community Employment and Infrastructure Program* (DEEDI, 2011b: 4).

4) Northey Street City Farm

Northey Street also adds to the Queensland Department of Employment, Economic Development and Innovation (DEEDI) *Skilling Queenslanders for Work* agenda through the employment of marginalised people.

5) The Salvation Army – Youth Outreach Education

Brisbane City Council's *Our shared vision: Living in Brisbane 2026*, outlines the vision for Brisbane as a regional and world city whereby, "we must consider the needs of others – people who are older or younger than us, people who have a disability or have less money or who don't have a place to call home" (BCC, 2006: 40). One vision for Brisbane as a vibrant, creative city is for people to enjoy a sense of belonging. The shared vision is one of communities which are: inclusive; caring; safe; engaged; connected; active; and healthy (BCC, 2006: 12-15).

The mission of the *Salvation Army Youth Outreach Service* (YOS) is to offer a supportive environment through compassionate and skilled service to youth at-risk so they can find hope and achieve their potential. The aim is to "contact and engage with young people 12 to 20 years of age (inclusive) who are 'at-risk' of homelessness or are homeless and/or in need of support" (Salvation Army, 2012b). The 'Veggie Patch' at Lawnton, Brisbane, functions for linking at-risk youth with the wider community. This involves "young people coming together to plant, grow and care for a fruit and vegetable garden. The project focuses on positive community engagement and social interaction, healthy living, life skills development and gives participants a sense of achievement" (Salvation Army, 2012a).

This program provides lunches for these young people and “for some this is the most nutritious meal of their day. The students take pleasure in inventing new recipes and picking the produce to go into the meals” (Landcare Australia Limited, 2012). As a recipient of the Junior Landcare Grant, young people are assisted to (Landcare Australia Limited, 2012):

Learn new skills such as budgeting, planning, healthy eating, socialising skills, cooking, problem solving, ownership and pride. The program provides an opportunity for young people to experience positive and healthy role models, feel a sense of achievement and develop links to the wider community that promote a sense of belonging and acceptance.

Additionally, disadvantaged youth benefit from a partnership between YOS and a north side business Eden Gardens, at Carseldine. Previously, Eden Gardens has been based in Sydney and worked with disengaged youth in NSW since 2004. The partnership offers donation of plants, gardening equipment and supplies and gardening expertise and guidance (Salvation Army, 2012c). Volunteering and employment pathway opportunities are offered to YOS school students and clients of the Service. The Salvation Army assert that this provides a valuable training and employment pathway for youth interested in pursuing a career in horticulture, hospitality and/or retail.

Appendix 14: Volunteer advocacy as community resilience, social inclusion and social enterprise

Volunteering as a community resilience-building activity

1) Volunteering Queensland - Community Resilience approaches

Emergency volunteering involves: first stage recovery efforts such as the *Big Clean Up* involving the efforts of the 'Mud Army'; Longer-term recovery efforts involving restoration of livelihoods; and getting donations to people in need (Volunteering Queensland, 2012e). Volunteering Queensland has a number of community resilience projects and agendas. They state that, "community resilience is critical in minimising the effect of these disasters and contributes to a quicker, more effective response" (Volunteering Queensland, 2012f). Firstly, the *Step Up Program* is "a combination of projects with a focus on building community resilience to natural disasters by empowering a diverse range of community stakeholders with the necessary knowledge, tools and resources to build community self-reliance" (Volunteering Queensland, 2012d).

Finally, the *Natural Disaster Resilience Leadership Project* is a 4 day capacity building workshop which aims to give leaders in Queensland communities affected or threatened by natural disasters, the opportunity to explore their role in building community resilience. This project has provided over 160 community leaders the opportunity to share their knowledge and to gain some new strategies and understandings of (Volunteering Queensland, 2012a):

What is community resilience?; Adaptive leadership; The Queensland disaster management framework; What makes for a healthy community; Assessing community resilience; Developing projects to trigger change; Community economic development; Cross-sector collaboration; Best practice community engagement; and, The emotional impacts of disaster.

2) International Disaster Resilience Strategy (ISDR) (2005)

The ISDR advocate that community-based training initiatives should be promoted, considering the "role of volunteers, as appropriate, to enhance local capacities to mitigate and cope with disasters" (UN, 2005: 10).

3) Green Cross Australia – community resilience

In addition to projects involving school children (Appendix 12) and youth (Appendix 13) relevant community projects include: 1) *Harden Up – Protecting Queensland*. Green Cross aims to “help prepare people for extreme weather events” through an “interactive disaster resilience portal”; 2) *Build it Back Green* aims to assist “disaster affected communities build back sustainably, by providing them with tools and resources to become more resilient”; and 3) *Witness King Tides* aims to “raise awareness about the effects of climate change on our oceans and coastal communities through a fun and meaningful community photography initiative” (Green Cross, 2012a).

Volunteering as a social inclusion activity

1) Department of Communities Target Delivery Plan Volunteering 2010-2011.

The Department of Communities address the previous Government's *Toward Q2* target to increase volunteering in the *Target Delivery Plan Volunteering 2010-2011*. The four key actions are outlined: 1) work with community organisations to improve their organisational readiness and capacity to engage volunteers; 2) build the skills of volunteers and volunteer managers; 3) work across government to deliver best practice government volunteering programs; and 4) identify and address barriers to volunteering in Queensland (Dept. of Communities, 2010: 5-7). The second activity, building of skills of volunteers and volunteer managers aims to provide “tangible benefits for volunteers, such as training and skills that may lead to employment and build the skills of volunteers and volunteer managers in government volunteering programs and non-government organisations”. This task is shared between the Department of Communities and the Department of Education and Training (Dept. of Communities, 2010: 6).

The Department of Communities aims to achieve “more inclusive, active and safe communities”. Key themes include: reducing barriers to social inclusion; increased opportunities for physical activity; and increased levels of volunteering. Priority areas involve: 1) building self-reliance of these clients or minority groups; 2) promoting “socially and economically inclusive and active communities through investing in targeted participation programs”; 3) leading and promoting “the recognition of cultural diversity and enhance community cohesion”; and 4) leading the implementation of the previous Government's *Toward Q2* target delivery plan to “increase the

proportion of Queenslanders volunteering in their community” (Dept. of Communities, 2011).

Volunteering as Social Enterprise

Brisbane City Council’s *Our shared vision: Living in Brisbane 2026*, outlines the vision for Brisbane as a “smart and prosperous city”. It is stated that “our prosperity arises from the abundance of ideas, funds and results that inevitably flow from our adaptability, collaboration, flexibility and sharing of goals” (BCC, 2006: 28). As such one key aspiration for inclusive and caring communities is for Brisbane to be a leading city in *social enterprises*. These are “associations or organisations which operate for the benefit of the community, using private sector acumen for public good. They have explicit social aims such as job creation, training or the provision of local services”. They also encourage “citizen initiative and participation” (BCC, 2006: 31). Additionally, the value of volunteers is acknowledged for helping connectedness and quality of life (BCC, 2006: 31). Food Connect (Food Connect Brisbane, 2012d) and Northey Street City Farm (NSCF, 2012a) are community groups which are social enterprises which trade as businesses (i.e.: profits feed back into the enterprise to strengthen Social Enterprise). According to Social Ventures Australia (SVA), social enterprises are businesses that trade for a social purpose, typically having the following characteristics of: explicit social aims; commercial orientation; social accountability; entrepreneurial drive; and socially inclusive values base (SVA, 2012).

Appendix 15: The Landcare model

The Landcare model includes: Community Landcare (On-ground works and community development); State and regional planning, management, leadership and funding; and National Landcare support and structures.

1. Community Landcare

The partnership between communities, government and organisations are centred on six themes (LAL, 2011a):

Improving our farmlands: Many primary producers are active participants in Landcare. They make significant contributions to combating soil salinity and erosion through sound land management practices and sustainable productivity. More than 40 per cent of farmers are involved in Landcare and many more practice Landcare farming; Breathing new life into waterway: Groups work to conserve, rehabilitate and better manage our creeks, river systems and wetlands; Around the coast: Coastcare groups are active in improving local coastal and marine environments; Bringing back trees: Each year Landcarers plant many millions of native trees, shrubs and grasses for a range of benefits, including improved soil and water quality. They restore bushland and conserve sensitive areas on both public and private land; Restoring wildlife habitats: Volunteers have provided protection for thousands of native species, including threatened and endangered flora and fauna; and, Urban action – protecting our urban environments: Active Landcare groups in Australian towns and cities work thousands of hours each year to tackle local environmental issues of most concern to their communities.

Landcare Australia Limited (LAL) states that its movement was borne from grass-roots initiatives to “improve agricultural productivity through sustainable land management”. The scope of the movement has flourished from this to a “broader focus on sustainable management of all of Australia’s natural resource assets and now encompasses individuals and groups across the whole landscape from coastal to urban and remote areas of Australia” (LAL, 2011h). They claim that the movement has successfully harnessed the efforts of individuals and groups under the ethic of caring for the land. The success of the Landcare model is “due in part to its bottom-up philosophy”. An example of this is articulated (LAL, 2011h):

A Landcare group usually starts when community members with common objectives connect over their observations of a local environmental issue... Groups set their own agenda, undertake work as often as they like and choose their own project sites. Groups may apply for funding from a variety of different sources to support their work including local, state, federal government and Landcare Australia... Generally, small group committees oversee operations, apply for project funding and organise communal activities like community workshops or tree planting. Most groups have one to six formal meetings annually. They may run discussion sessions, and short trips to other Landcare groups and other activities to gain and share knowledge. Some larger groups may have a paid coordinator providing part-time assistance, arranging meetings and activities and providing management guidance. Funds to pay

these salaries mostly come from government. Increasingly, Landcare groups amalgamate into Landcare networks managed by community boards that take a more regional approach to environmental issues and coordinate activities to achieve catchment wide outcomes. Networks are now a major community link to all levels of government and industry for financial support and information.

The claim is that “the success of the Landcare bottom-up model can be attributed to the inspiring contributions made by the passionate individuals who make up Australia’s Landcare movement. Their sense of stewardship, enduring commitment and deep appreciation for our natural environment is why Landcare exists today” (LAL, 2011h).

2) State and regional planning, management, leadership and funding

The coordinators and facilitators of Landcare networking can be found at the regional and State planning levels. Local government is strategically placed to work with community networks. Agencies include: 1) Regional - Natural Resource Management (NRM); 2) Queensland Water and Land Carers Inc. (QWaLC); 3) Landcare Queensland Limited; and 4) Brisbane City Council (BCC) *Local Government Landcare Partnerships Award*. The BCC is partnered with local community catchment groups through the *Creek Catchment Ranger Program*, which has been nominated for a National Landcare Award as an example of a “comprehensive approach to Natural Resource Management (NRM)”. As stated, “the Council’s grass-roots Creek Catchment Ranger program is a flexible and dynamic local government program that provides dedicated support to the city’s community-based catchment groups and a continuous linkage between Council and the community” (LAL, 2011b).

3) National Landcare support and structures

Landcare Australia Limited

Landcare was initially launched in central Victoria in 1985 through the initiative of Joan Kirner, (then Minister for Conservation, Forests and Lands) and Heather Mitchell, (then president of the Victorian Farmers Federation) due to the recognition of the “pressing need to develop a program that would reverse the degradation of farmland, public land and our waterways”. The Landcare movement gained momentum when the National Farmers Federation and the Australian Conservation Foundation, successfully lobbied the Hawke Labor Government to “commit itself to the emerging movement”. Then Landcare became a national program in 1989 when the Australian Government, with bipartisan support, announced the *Decade of Landcare Plan* and committed \$320 million to fund the *National Landcare Program* (LAL, 2011h).

In the same year, Landcare Australia Limited was formed by the Australian Government as a private non-profit company to manage the national public awareness and sponsorship campaign for the *Decade of Landcare* (Hawke, 1989: 2; LAL, 2011i). Landcare Australia Limited states that they are non-partisan and are not an advocacy body, rather, they “assist businesses to work with local communities on environmental restoration and repair projects and run national campaigns... and organise targeted promotions and fund raising initiatives such as natural disaster emergency response campaigns”. Funding is received from governments, corporate organisations and private donations (LAL, 2011i).

As of 2011, there are eight directors on the Landcare Australia Limited Board. There are three committees reporting to the Board: 1) Finance and Audit Committee, which is responsible for: review of Landcare Australia’s performance against the business plan, including operating and revenue budgets, and forecasts; assess the financial, commercial and risk aspects of operations; and liaise with the external auditors; 2) Membership and Governance Committee, which is required to make decisions on Board and Advisory Council matters; and 3) Sponsorship Committee, which is responsible for: policy; advice for Corporate partner issues; use of logo and licensing guidelines; direction and strategy for the raising of funds; board level contacts, resources and industry knowledge; and evaluation and assessment (LAL, 2011c).

Australian Landcare Council (ALC)

Activated in 2009, the Australian Landcare Council (the Council) is a ministerial advisory body on Landcare and natural resource management (DAFF, 2011a; LAL, 2011d). The role of the Advisory Council is to consider and make recommendations to the Board including the relationship between the Landcare movement and Landcare Australia; and the performance of Landcare Australia in relation to its objectives. The Advisory Council is made up of representatives from: Landcare representatives from the States and Territories; State and federal government; National Farmers Federation (NFF); Australian Conservation Foundation (ACF); and, Australian Landcare Council (ALC) (LAL, 2011c).

National Landcare Network (NLN)

In 2009, peak Landcare organisations discussed forming a national body for community Landcare. Participants of this meeting “shared a common sense of the importance of an effective national voice for Landcare and could see the opportunity

for resource and skill-sharing through a national network". The NLN consists of two representatives from each State or Territory. As a national representative body to speak for community Landcare, it aims to ensure that the "unique character of Landcare is not lost in the centralised nature of NRM planning. It ensures that the critical role of community engagement in NRM is recognised, and that NRM policies, funding and structural arrangements benefit the community" (LAL, 2011f).

National Landcare Facilitator Project

The role of the National Landcare Facilitator is to advocate for the Landcare ethos and advise and support community Landcare. It has a focus on sustainable production in the primary industry sector, together with the engagement and participation of community groups in natural resource management programs. It functions in conjunction with the Australian Landcare Council and Landcare Australia Limited. It is supported by DAFF through the *National Landcare Program* component of the *Caring for Our Country Program*. The national aims include providing support for: the Landcare movement; primary industry appreciation of natural resource management (NRM) issues; helping raise awareness of Australian Government NRM programs and priorities, especially the Landcare component of *Caring for our Country*; and reinvigoration of the Landcare movement (LAL, 2011g).

National funding arrangements

Caring for our Country is an Australian Government initiative jointly administered by the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) and the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) (CoA, 2010b). The *Caring for our Country* (CfoC) program "supports communities, farmers and other land managers to protect Australia's natural environment and sustainability of produce, food and fibre". The goal is to "achieve an environment that is healthier, better protected, well managed, resilient, and provides essential ecosystem services in a changing climate" (LAL, 2011f). The Australian Government's Department of Agriculture, Fisheries and Forestry (DAFF) provides administrative funding for a number of initiatives for Landcare such as improving the *National Landcare Directory*, Landcare Awards, Landcare publications and *Landcare Week* with the aim to increase community volunteering and corporate sponsorship (DAFF, 2011e; LAL, 2011d).

Appendix 16: The National Conservation Strategy for Australia 1984-85

The National Conservation Strategy 1984-85

The *National Conservation Strategy for Australia (NCSA)* for Australia was proposed by a conference held in Canberra in June 1983. It was drafted in response to the publication of the *World Conservation Strategy (WCS)* by the *International Union for Conservation of Nature and Natural Resources* in collaboration with United Nations agencies and the *World Wildlife Fund* in 1980. The WCS called for each nation to “prepare and implement a national conservation strategy... for conservation for the world’s living resources” (CoA, 1984: 3). Wilson (1987: 115) outlined that the NCSA was developed in three stages: 1) a seminar to outline the broad terms of reference; 2) provision for public comment on a Discussion Paper devised at the seminar. This included almost two years of public consultation including more than 20, 000 people (CoA, 1984: 3); and 3) the preparation of the final Strategy at the National Conference. The strategy was drafted by more than 150 conference delegates (CoA, 1984: 3).

Membership of the Conference Bureau⁵⁴ comprised members of the Steering Committee of government representatives, and the Consultative Group of non-government representatives which jointly directed the drafting of the strategy (CoA, 1984: 24) The Steering Committee was established to oversee the development of the NCSA and provide guidance to a task-force (Wilson, 1987: 115).

Success in Committee members finding common ground

As with the NSDR, there is a call to go beyond the old ways of doing business of the competing interests between fragmented strands and find the potential for integration. As stated (CoA, 1984: 3):

⁵⁴ The working group membership included (CoA, 1984: 24): Chairman; Premier’s Department, Tasmania; Department of the Chief Minister, Northern Territory; Australian Forest Development Institute; Australian Conservation Foundation; National Parks and Wildlife Service, NSW; Australian Mining Industry Council; Department of Home Affairs and Environment, Commonwealth; Department of Conservation and Environment, Western Australia; Confederation of Australian Industry; Australian Council of National Trusts; Department of Environment and Planning, South Australia; World Wildlife Fund Australia; Australian Committee for International Union for the Conservation of Nature and Natural Resources; Ministry for Conservation, Victoria; Co-ordinator General’s Department, Queensland; National Farmers Federation; and National Conversation Strategy Task Force (Chaired by the Department of Home Affairs and Environment, Commonwealth).

The proposed Strategy urges the Australian community to emphasise the common ground between conservation and development, to focus on the causes as well as the symptoms of environmental problems, and to increase the store of knowledge on which environmental management decisions can be based. It challenges the nation to redress the errors of the past and to keep our options for land use open in order to optimise the quality of life for all Australians.

According to Wilson (1987: 115) the *Priority National Actions* (PNA) caused the most dissent but working groups were able to reach agreement. Wilson reported that during the development of the NCSA, conservationist groups and developer groups both reported scepticism that anything could be achieved due to their seemingly oppositional views. However, once “both sides had the opportunity to talk to one another through the Steering Committee, they both were able to modify their view and reach consensus” (Wilson, 1987: 115).

Failure of implementation of the Strategy

Wilson proposed that the greatest value of the NCSA in the years to come will be for “reference purposes in the development for policy and programmes for further conservation in Australia” (Wilson, 1987: 115). Three years after the publication of the NCSA, Wilson (1987: 115) outlined that:

The Task Force which coordinated the development of the Strategy was disbanded soon after the Conference. Further development and the preparation of plans to implement the priority national actions were to be the responsibility of the interdepartmental Committee established under the guidance of the Consultative Committee. Unfortunately the process has foundered: the capacity for such committees to become ends in themselves, and for their energies to be dissipated on small details, has triumphed!

Selman (1987: 20; 1988: 15) asserted that the commitment to the NCSA principles had mainly come from “organisations possessing little direct power”, and that the “necessary translation into detailed programs of action has been very limited”.

Recommendations to improve implementation

Wilson (1987: 115) advised that “responsibility for further development of the Strategy should be clearly allocated, to ensure that its recommendations are acted on”. This is congruent with the NSDR call for shared responsibility (COAG, 2011: 5) and the UKCO (2010: 4) advice for a “shared framework”. Selman (1988: 16) agreed that future actions for the NCSA included policy holism with the incorporation of desired principles within and among various departments. However, Selman (1988: 14) cautioned that the lack of incorporation with the grass-roots level will be problematic:

The “strategic” approach is by no means ideally suited to all conservation issues. Strategies – almost by definition – usually work from the top-down, whereas environmental action often depends on grass-roots initiative for its vitality. Thus, activists may perceive grand strategies as “establishment” devices, created at too remote a level.