

The decline and rise of urban agriculture: Can urban agriculture deliver on multiple urban planning and policy fronts?

The decline and rise of urban agriculture: Can urban agriculture deliver on multiple urban planning and policy fronts?

Trevor Budge La Trobe University

Box 199 Bendigo 3552 Australia

t.budge@latrobe.edu.au

Word count 5,677

Running head: The decline and rise of urban agriculture

Key Words: Urban agriculture, urban planning and policy

Abstract: The traditional Australian family home in the suburbs boasted a vegetable garden and some productive fruit trees. Market gardens were once interspersed amongst some suburban areas and were located on the edges of the cities. The recent scale and form of metropolitan development has placed both forms of urban agriculture under growing pressure. Suburban lots became smaller and houses increased in size while the market gardener sold up and moved on. Urban agriculture is a major element of food production across much of the developing world however it is now on the rise in the western world both as a concept and in practice. Assisted by concerns and movements associated with concepts such as; 'food miles', grow local, 'slow food', farmers markets, food security, the social and community benefits of growing your own food, community gardens and the realization of the links between food and the local economy, urban agriculture is experiencing a strong revival. Should our metropolitan strategies and urban design practices be incorporating food as a core element? This paper recounts this apparent turn around and addresses whether this is a substantive change in urban planning and policy or just another trendy fad.

Introduction: Food and Cities

This paper commences by briefly reviewing the changing role of agriculture in relation to the development of cities. It then discusses how metropolitan scale planning in Australia has responded to food production as a land use. The paper turns to an examination of the emergence of a new environmental and social agenda that supports and promotes the concept of 'urban agriculture' because of its apparent capacity to deliver on a number of fronts. It concludes by discussing how metropolitan scale planning may well have to be recast to meet these new imperatives.

The use of land for the production of food was once an intrinsic part of the urban form and the immediate surrounds of most towns and cities (Wrigley 1978, Russell 1997, Cockayne 2007, Whittock 2009). As cities grew they had to have strong links with agriculture and the local food system that built up to support them because it was an essential element of the day-to-day survival of their population and the operation of an urban economy. The massive population growth of cities associated with the industrial revolution initially spawned the need for substantially increased levels of horticultural product on the edges of cities (Cockayne 2007, Burchardt 2002).

The limits of transport and the highly perishable nature of much of the product particularly many vegetables meant that it was essential that a substantial amount of production took place in close proximity to cities. Areas of intensive horticultural production developed to meet the needs of the rapid growth in the population of Australian cities in the latter half of the nineteenth and early part of the twentieth century, although Burke (2009) suggests that the level has been overstated. The requirement to get highly perishable produce to the consumer quickly meant market gardens and a large labour intensive industry grew up as part of the extended urban form in Australian and other western cities. The large population that was now living in cities was supplied by a complex and integrated local food system (Gaynor 2006, Steele 2008, Burke 2009).

Cities, food production and land use planning

For most of human history the vagaries of the supply of food have been central to our very existence (Tannahill 1989, Mazoyer and Roudart 2006). For much of the world's population it still is (Mougeot 2005). Cities over the centuries have been a place where food has been bought and sold and the market as a physical location has not only been a prominent aspect but has been one of the great social places and a constant reminder of the role of food as part of the local economy. Food has been a major element in shaping the urban form (Steele 2008). With limited capacity for transport and storage much of the food that was exchanged in towns and cities was grown in or in very close proximity to where people lived. Perishable product could not be transported very long distances; it was sold and consumed soon after harvesting because of storage issues (Steele 2008). The evidence appears to be that the actual consumption by city dwellers of fresh perishable vegetables was highly seasonal and was considerably less in the past than what is now the case (Keene, 2009).

The need for large-scale food production adjacent to rapidly growing city populations was initially met, but then progressively reduced by the development and use of such innovations as refrigerated storage, improvements in the capacity of private transport and then combined in the development of the refrigerated transport of product (Cronin 1991, Burke, 2009). These innovations, together with changes in agricultural production techniques such as a reduced reliance on the inherent productivity of soils through the use of artificial fertilisers and the development of irrigation systems, started to break the nexus that had developed between the location of population and the production of perishable food.

The interdependency that had developed and still exists across much of the developing world between urban form and local food systems (Mougeot 2005) was further considerably loosened in Australia by the market forces associated with the suburbanisation of metropolitan areas. The support for private large scale land development in Australia's cities as the primary means of managing land supply for residential demand (Sandercock 1975) resulted in the considerable loss of large areas of productive land to what the

market termed 'higher and better uses' (Buxton and Goodman 2003, Budge 2007). Rutherford et al (1967) noted an unplanned 'rolling wave' development of the Sydney hinterland, where more profitable agricultural uses were replaced by extensive, low profit agricultural activities, and then the general termination of these activities by residential development. Land speculation drove land use planning decisions. The continuation of agriculture on the immediate urban edge saw a clash of value systems and a rise in 'nuisance' complaints against those attempting to make a living (Houston 1995, Gillespie and Mason 2003).

It was about the time when the nexus between food production and an urban form was starting to be broken that metropolitan scale planning driven by newly formed metropolitan authorities emerged in Australia. The reaction of those early authorities to land on the edge of cities that was supporting agricultural production being threatened by a sprawling, market led, land development system, was to seek to use newly created strategic and regulatory planning systems to 'protect' these areas of production from at least ad hoc development.

The Melbourne and Metropolitan Board of Works was charged with the responsibility to develop the city's post war metropolitan planning scheme. It was concerned that urban development was sprawling and threatening to overrun horticultural production areas. It stated "a line must be drawn somewhere, or the city will continue sprawling over a wider and wider area, increasing the disabilities inherent in this type of growth and putting out of production more and more food producing areas (Melbourne and Metropolitan Board of Works 1954:22). Ironically the statement 'increasing the disabilities inherent in this type of growth' is still a driver of metropolitan scale planning. The post world war two County of Cumberland plan for metropolitan Sydney had similar concerns and motivations.

Food increasingly became a commodity in the hands of larger and larger scale producers, more and more food was processed and vertically integrated through globalised food systems and corporations. Organisations that dealt with and controlled all aspects of production, storage, processing, transport, distribution and sale provided access all year round to food no matter what

the season or issues with production. During this whole period the role of the backyard in Australian life as a place that had frequently supported home grown vegetables and fruit got smaller in area. Large supermarkets increasingly offered an expanding range of products not possible under traditional home grown or farming methods. Food in cities was no longer something that you grew, or you saw being grown and taken to market, but had increasingly become a commodity that you consumed.

Food ceased to be a core concern for many people in Australian cities because it was so apparently readily available. The overwhelming majority of the population became divorced from the production of food. Food had become something you buy when you need it. The globalisation story of food is now a well known popularised by authors such as Roberts (2008).

As Dixon (2003) notes the commodification of food by transnational corporations and multilateral governance mechanisms was matched with the rise of consumers using their buying power to demand convenience from the market. The ready availability of capital to finance the increasing concentration in food retailing sectors worldwide provided a foundation from which giant retailers contested the power of producer groups and even the power of multinational processing firms.

Consequently local and metropolitan scale land use and strategic planning paid increasingly less attention to agriculture as a core component of the urban form (Kennedy 1993). Food was still a prominent issue when metropolitan planning considered the broader hinterland - their peri urban area, but only relatively small areas of land in and immediately adjacent to Australian metropolitan areas continued to be used for horticultural production land. Some of it was 'protected' from conversion to urban development by the planning system. Pockets of highly productive land remained. Agriculture had been increasingly forced to compete for a finite supply of space with other land uses, most demonstrably that of urban development and associated planning, but also increased community pressures for landscapes dedicated to natural environmental purposes, and free from agricultural chemicals (Johnson et al 1998).

Much of the Australian population would generally now appear to have little interest or concern in how food gets from the paddock to the plate. Why should they? Access to food for most people is easy, convenient and low cost. Yet once the backyard vegetable garden and fruit trees epitomised the suburban home. Gaynor's (2006) portrait of the backyard in Australia depicts vegetables and fruit as core values when home food production was about self-reliance particularly post war. Timms (2006) notes that such utilitarian values were lost with 'the transformation of the backyard from utility space to elegant outdoors living-room' and the use of the backyard as a status symbol. Timms (2006:147) even quotes a real estate agent that says that a vegetable garden lowers the value of a property because it associates home ownership with hard work. As the average size of a residential lot reduces the amount of space for home food production is reduced (Gaynor 2006). Current water restriction policies do not support backyard food production.

Agriculture and Australian metropolitan planning strategies

The history of metropolitan fringe agriculture in Australia has generally been a story of land and food production lost to urban sprawl. Attempts to conserve or 'save' such land from being converted to housing and other urban uses through metropolitan planning strategies have had some success but in a large scale view have proven to be of little consequence in the metropolitan consumption of land. Large areas of some of Australia's most productive agricultural land are now paved over. In some cases where such areas remain they have become confined to almost novelty status, as some sort of residual area, rather than as being valued as commercial food production (Budge 2007). Food production has in some instances become secondary to a role as landscape that supports urban amenity and to playing an important part in the tourism marketing of a city. There has been little direct attention as to how more detailed policy and regulative issues should apply to an issue of protecting productive farmland from conversion to urban uses (Gardner 1994, Houston 1995, Sinclair 2002, Budge 2007).

Metropolitan scale planning in Australia essentially focused on providing an orderly land development market to ensure a steady stream of housing, infrastructure provision and profits for the growing land development sector. Those who envisioned that metropolitan scale planning was also a resource management process as well as a means to manage urban development to pursue more community based objectives continued to advocate for agricultural areas as part of the metropolitan area. However this advocacy was against a background of the continuing decline in the need for food production in and adjacent to metropolitan areas in Australia. Undeveloped land on the fringes of cities became green belts or green wedges (Buxton and Goodman 2002, Buxton and Goodman 2003, Armati 2008) rather than production areas and a widening range of non-urban land uses such as airports, water treatment plants, golf course estates, prisons and tourism complexes were provided for and supported that are provided for in green wedges as part of the *Melbourne 2030* strategy. A highly developed and intensive metropolitan scale local food system was no longer needed or wanted it was supplanted by larger scale systems that increasingly drew product from more distant places.

Protection for productive agricultural land swung to a wider spatial scale with state wide and regional level policies to 'protect' productive agricultural land. For metropolitan areas the use of land in the widening hinterland of cities became important. Focus shifted to what has become known as peri-urban areas, beyond the reach of urban development (McKenzie 1996) but increasingly over-run by rural living and rural residential forms of land use. Recent studies (Houston 2005, Buxton et al 2006, Buxton et al 2007) have underpinned the calls for more strategic planning and regulation of these larger areas around issues like supporting the agriculture that is taking place in them. Concern has been increasingly expressed for the uncertainty of policy for peri-urban areas. Peri-urban areas were defined as neither urban nor rural but as a dynamic interface and transitional zone. They were characterized by a diverse range of land uses, communities and environments, and the intrusion of urban land uses and subdivisions on previously rural land uses were seen as resulting in their progressive

fragmentation and for pressures from competing land uses (Buxton et. al. 2006, Land and Water Australia 2007).

The importance of peri-urban agriculture for a healthy city and the advantages of retaining agriculture are being increasingly recognised in rhetoric, but not in planning strategies, although the urbanisation of agriculturally productive land is of concern around many cities (Parker and Jarecki, 2003). Parker (2007) suggests that peri-urban areas are a mixture of urban 'lifestyle' dwellers and local food producers, giving a regional context to urban centres and often producing a conflict of land uses. Peri-urban areas are sometimes seen as 'farming land awaiting residential subdivision, and this assumption is having significant consequences, to the extent that subdivision is beginning to be regarded as a 'right' (Willis n.d.: 3). Houston's (2005) analysis identifies that peri-urban regions in the five mainland States produce almost 25% of Australia's total gross value of agricultural production. Houston (2005) provides considerable evidence to suggest this may be an underestimate because the agricultural census poorly serves exact data on peri-urban agriculture.

Food security, urban agriculture and links to land use planning

The previous sections have told the story of how land for intensive horticultural production became increasingly divorced from the urban form and that metropolitan scale planning in Australia largely went along with that if not facilitated that change. Ironically there is now a growing call for cities to once again engage in supporting local food production and local food systems.

A host of reasons for that support have been put forward ranging from the identification of 'food deserts', places where there is no convenient access to fresh food particularly for those who are poor and lack private transport (Parham n.d.), to demands to address climate change by reducing food miles associated with the long distance much food is transported, to concerns about diet and obesity, to a renewed interest in community gardens for both their social role and to meet a demand by people whose properties are too small to grow food in an era of rising food prices. Much of this agenda has been grouped under the broad term of addressing 'food security'.

This new agenda has arisen against a background of an extraordinary growth in interest about food, its preparation and consumption. Ironically there is still limited awareness by many people about where food actually comes from. The initiative of Michelle Obama in digging up part of the White House lawn to plant a vegetable garden can easily be dismissed as cheap populism and no doubt some considered her action as that (see <http://obamafoodorama.com>). However it was also widely seen as symbolic and a recognition that priorities are changing. The New York Times reported (March 19 2009) Mrs. Obama as stating that the main purpose “will be to educate children about healthful, locally grown fruit and vegetables at time when obesity has become a national concern.” As reported in the same story the move was also an attempt to placate strong community activism, “whether there would be a White House garden has been more than a matter of landscaping. It’s taken on political and environmental symbolism as the Obamas have been lobbied for months by advocates who believe that growing more food locally could lead to healthier eating and lessen reliance on huge industrial farms that use more oil for transportation and chemicals for fertilizer.” Michelle Obama was quoted as stating, “the country’s one million community gardens, can also play an important role for urban dwellers who have no backyards.” In reporting the same story ‘The Age’ in Melbourne credited the initiative to Kitchen Gardeners International, a coalition of gardeners whose mission is to inspire and teach people to grow their own food. Through their "Eat the View" campaign they urge the planting of "high-impact gardens in high-profile places".

The UK media reports similar grass roots activism but also backed by government policy. “We face some awesome changes in the way we deal with food production,” said Tim Lang, Professor of Food Policy at City University, London, “for the past century we have relied on oil to produce more and more food for ourselves - mainly through the use of petroleum products to make cheap fertilisers.” (The Observer 16 November 2008) As the article stated, “food experts such as Lang have been pressing the government to develop a proper strategy for ensuring that Britain is able to supply itself with food for the rest of the century, but in a way that fits in with the nation's goals on climate change.”

The term urban agriculture and even the phrase 'agricultural sensitive urban design' (Larsen et al 2008) have been coined to embrace a wide range of different activities. There is growing emphasis on community gardens (Ferris et al. 2004), community supported agriculture, rooftop gardens (Adelaide City Council n.d.), and what is known as 'guerilla gardening'. Agriculture in an urban setting is seen as being integrated into the functioning of the urban area in terms of production, processing and consumption. Urban agriculture can be undertaken in a variety of forms and involves different farming systems from household production to community participation through to commercial enterprises; it can be permanent, temporary or informal (Drescher 2001, Enns 2008).

Urban agriculture is being promoted to meet the objectives of numerous policy areas, such as poverty alleviation, economic growth, improved health outcomes, environmental management, social interaction and community strengthening (Drescher 2001; Zeeuw 2007). Knowd et al. (2003) and Lang et al. (2004) support urban agriculture to assist in the reestablishment of local food systems in urban areas so as to stimulate and engage a broader policy debate and response (Pothukichi et al 2002, Parham n.d.). To this must be added for Australian cities the almost sudden realisation that water in Australia must now be a valued and managed resource. The production of safe, convenient, low cost nutritional food is linked to water policy. Research undertaken for the Victorian Local Governance Association (VLGA) by the La Trobe University Community Planning and Development Program found that there is increasing concern, particularly at the community level with the dependence of food production on increasingly scarcer and costlier water supplies, depleting fossil fuel resources and with productive agricultural land in and around cities being paved over (Budge and Slade 2009).

Pothukuchi and Kaufman's survey (1997) of planning departments in twenty-two US communities revealed that limited attention was given to food system. They identified a number of reasons for this including that the food system is not seen as directly linked to the built environment and that it is dominated by the private sector (Pothukuchi and Kaufman 2000). They suggested that land use planning and planners have a unique opportunity to support, facilitate and

lead food security initiatives at a community level through the obvious decisions about the use of land. This has been linked to the growing awareness of a number of widely alleged and perceived benefits of local food supplies in terms of building and supporting social capital and strengthening local communities (Biehler et al n.d., Clancy 2004, Jackson 2006, Enns et al 2008, Cassidy & Patterson 2008).

Relying on urban policy development and the land use planning system to provide a continuing supply of fresh healthy food from productive agricultural land through Australian metropolitan strategies has been reasonably strong on rhetoric and largely a failure in practice (Gardner 1994, Sinclair 2003, Budge 2007). Highly productive farmland is scarce in Australia, it is generally found in only limited areas on the fringes of the continent with significant areas of some of the most productive areas located on the edges of the rapidly expanding metropolitan areas. A recent national assessment of the actions by national, state and local governments in preventing the loss of farmland to urban growth across Australia confirms that view (Buxton et al 2006). With land use planning, both in a policy and regulatory sense, essentially a responsibility of Australia's six State governments, the approach to farmland preservation has been understandably somewhat disjointed and lacked a consistent theme (Budge 2007). The specific protection and management of productive areas of agricultural land as a national or regional resource has largely lacked any coordinated action or consistent policy approach (Buxton et al 2006, Buxton et al 2007). There is no agreed national framework for the protection of farmland and there are no signs that one will emerge.

The incorporation of urban agriculture into metropolitan planning strategies

The level of media attention about food in Australia is increasing. It is doubtful whether the interest has ever been greater. Whether it is cooking shows, issues with food additives in China, the amount of water used to produce commonly consumed food items, the near monopoly of two supermarket

chains, the impact of food waste on greenhouse gas, the effect of extreme weather events on the price of certain commodities, there is a heightened awareness of food and the fragility of the systems that support it. A whole new agenda has arisen around food and it is starting to permeate into land use planning.

In Brisbane 'Food in the City' is an explicit program of the Brisbane City Council. An examination is now being undertaken within Council of the barriers within the planning scheme to localized food production and to removing existing statutory impediments in the planning ordinances to urban agriculture initiatives and developments. In Sydney the Food Fairness Alliance, was formed in 2005 to coordinate the efforts of rural producers, health professionals, community workers and community-based advocates active in developing a socially, economically and environmentally sustainable food system in the Sydney region. It has become a significant political and economic force that is influencing government policy on food.

Business Victoria (2008) identifies that the food industry in Victoria represents 21.4% of the State's manufacturing industry, and consists of over 2,000 processing plants employing 55,000 people much of them in the metropolitan area. The food sector with 15% is the second highest sector of the Victorian economy in terms of gross value added. SGS found that in 2007-08 the food sector employed 366,000 people of whom 210,000 were in Melbourne (SGS 2009).

It is against this background of the emerging 'discovery' of the importance of urban food production that the role of planning is being revisited and a wider agenda discussed. The history, development, production and potential for food production in Australia's cities and suburbs has received minimal treatment in the growing research on Australia's cities let alone as a topic related to urban planning and policy.

Pothukuchi et al. (2002) identifies the need for cities in the context of planning to undertake a community food assessment as an integrative process where a diverse group of stakeholders undertake a solution-orientated process of examining community food assets and resources, as well as problems and

barriers. The assessment promotes long-term planning, based on a solid foundation of knowledge and local context. Pothukuchi (2004) states that planners can particularly contribute to community food assessments by a more systematic incorporation of the health impacts of community-food linkages. Planners can use their skills in land-use and neighbourhood planning to incorporate improvements in food access and health-motivated activities and by re-localising food systems as an approach to community planning as a way of reducing the social and environment costs that are normally externalized e.g. urban sprawl's takeover of agricultural land and food miles.

There is increasing recognition that local food production represents an important part of community and regional economies and that there are many benefits, including substantial health benefits, which emerge from stronger community and regional food systems (Chatham House 2008, Budge and Slade 2009). Cities have become accustomed to consuming a far greater amount of food than they can supply from within their own boundaries. Food gathered from a global system promotes continuing disregard for the heavy ecological footprint created through its use, including the creation of massive amounts of waste (Larsen et al. 2008), with much going to landfill through this open system of consumption. The establishment of large conglomerate shopping centres consolidates the dislocation between all the links in the food chain. Growers see their products bypass the local markets, going to wholesalers in cities and then appearing again, after travelling many 'food miles', back in their local store. These are highly inefficient urban forms.

There have been increasing concerns by a coalition of land use planners, agricultural resource practitioners, farmer groups, health advocates and conservationists that a limited land resource is under threat and that the loss of further highly productive agricultural land will have profound impacts on levels of food production, the costs of production, transport and on food prices. Despite Australia's relatively large land mass and seemingly unlimited land resources it is increasingly being seen as contrary to 'smart growth management' to permanently remove productive land from the resource base. One of the enduring legacies of a 'pioneer' nation, such as Australia, is a

widespread continuing belief that there will always be more land available and that technology will continue to deliver in the pursuit of greater levels of production. The need to take tough regulatory stances to preserve and manage productive agricultural land has been a difficult message to convey to the wider community and to those charged with long term land use planning and resource management at the metropolitan scale.

Knowd et al. (2003) comments that 'in the contemporary context of urban development, the possibilities of looking anew at agriculture relates more to implementing sustainability and addressing the structural changes brought about by globalization to communities, their food systems and quality of life for urbanites'. In times of increasing food insecurity, metropolitan scale land use policy needs to acknowledge the importance of local farm areas and the role they play in providing food for cities.

The assumptions, policies and implementation of our metropolitan strategies and detailed land use plans have not considered the multi dimensional role and impact of food production and consumption (Drescher 2001). We also have little grasp of the importance of food in the economy in our cities. Food, health, land use planning and jobs and how they relate to the functioning of cities are intertwined in a complex relationship that is only recently being identified and understood. (Lyson 2004, Budge and Slade 2009) The wider goals of food security and the consideration of how to deliver it, together with tackling climate change and environmental sustainability, include the simple concept of maintaining food production as close as possible to processing, distribution and consumption (Clancy 2004). When the value of lower cost, sustainable and secure supplies of fresh, high quality fruit and vegetables are also considered in terms of its nutritional and health values, it is apparent that converting productive agricultural land in and around our major urban areas into housing doesn't make a lot of sense. When to that realisation is added that sustainable food production is closely linked to managed secure water supplies including as much use of recycled water as possible, the picture emerges of cities that needs to radically rethink the way they value a resource like agriculture. The transport of fresh produce over vast distance is akin to transferring water at incredibly high cost (Budge and Slade 2009). Addressing

all these issues has implications for the urban form (Mougeot 2006).

In May 2006 the City of Vancouver Canada, which is seen as a leader in strategic city planning, issued a challenge to the community to establish more food-producing gardens in Vancouver. The goal is to create 2010 new garden plots in the city by January 1, 2010. There is currently an unprecedented demand by the community for the creation of new gardens and a waiting list for being informed about land available in neighbourhoods. Metropolitan Vancouver is currently incorporating a food strategy into its metropolitan planning strategy. Mr. Johnny Carline, the Chief Administrative Officer of Metro Vancouver, admits that the rate of growth of interest and pressure for a food strategy has taken him and his organisation by surprise. He states that it is the widespread realisation by the metropolitan community that food relates to the liveability of the city and a secure food supply links to climate change action, health and the overall sustainability of the metropolitan area that has given it a momentum that is now unstoppable (personal communication). The Vancouver example comprises a coalition of forces and interests that is not yet recognizable in any city in Australia. In Vancouver that coalition and its expression in the metropolitan land use strategy has become mainstream activity.

The production and supply of food, the availability of land for growing food and access to safe, cheap food has all been largely taken for granted in Australia. Food price rises; the impact of drought and climate change on food production and the realisation that water supplies for growing food are not an inexhaustible resource have all hit home to Australians in recent years. There is a growing understanding that policy and practice that appeared to serve us well in the past are no longer sustainable and that new directions will be needed. It is increasingly evident that sustainable food systems that can deliver safe, low cost convenient and sufficient high quality food are not in place. Land use planning policy, practice and implementation plays a critical role in food in all its dimensions. Land use planning and planners have a unique opportunity to support, facilitate and lead food security initiatives at a local and community level through the obvious decisions about the use of land and the design of the urban form.

Conclusion

The policy context of the Australian planning system is characterized by a strong degree of centralised control at the State level but with each separate State setting its own priorities. Given this context it is understandable that there is no agreed national framework for the protection of farmland in metropolitan areas nor is there any signs that one will emerge. Such an initiative if it did occur would be much more likely to come from the collective action of the States not any action by the Commonwealth government which has consistently shied away from seeking a role in such matters. (Budge 2007)

Understandably, but increasingly, it is a disturbing observation that many people and much government policy appears to give little consideration to the fact that many elements in the food chain are fragile or potentially so. For instance, Victoria's recent heat wave destroyed large quantities of the state's horticultural product in the ground, the rising cost of water and oil raise the prospect of massive hikes in the price of much of the food we take for granted and food production and distribution chain is a major contributor of greenhouse gas production. Despite this apparent lack of concern a proliferation of recent popular literature indicates that there is a growing understanding of these issues and with it has come a stronger recognition of the links between land use planning, food production and food security (Campbell 2004, Cassidy and Patterson 2008, Budge and Slade 2009).

Generally the link between these elements is poorly understood, inadequately articulated, lacks a research basis and is not readily apparent to most people or even to many who operate in the fields of land use planning and food production. Food production as an economic driver and its links to land use planning are in many jurisdictions not recognised by any structure or defined roles and responsibilities in government nor by any substantive legislative or policy mechanism. While it might be seen as modest there are clear signs of a growing movement of concern about the need to make this link, and to express it in terms of the food economy, land use policy, links with health outcomes and local and regional economic development strategies (Planning

2009, Raja et. Al. 2008). The concept of re-establishing local and regional food systems is gathering pace.

The traditional Australian family home in the suburbs boasted a vegetable garden and some productive fruit trees. Market gardens were once interspersed amongst our suburban areas and were located on the edges of the city. The scale and form of metropolitan development and the loss of local food systems has seen the demise of this form of agriculture. Suburban lots became smaller and houses increased in size while the market gardener sold up and moved on in a largely free market process of developing residential land.

Urban agriculture is a major element of food production across much of the developing world. Its importance has markedly declined in Australia but it is now on the rise in the western world both as a concept and in practice. Assisted by concerns and movements associated with concepts such as; 'food miles', grow local, 'slow food', food security, the social and community benefits of growing your own food, community gardens and the realisation of the links between food, health and the local economy, urban agriculture is experiencing a strong revival. Metropolitan strategies and urban design practices need to again consider the incorporation of food production in them as a core element. This paper suggests that this apparent turnaround is likely to be much more than a fad and suggests that a fundamental rethink of a key element of urban policy and metropolitan planning is called for.

References

Adelaide City Council (n.d.) Rooftop Gardens [online]. Available: http://www.adelaidecitycouncil.com/adccwr/publications/guides_factsheets/fact%20sheet%20-%20rooftop%20gardens.pdf [Accessed 22 October 2008].

Amarti, M. (ed) (2008) *Urban Green Belts in the Twenty First Century*, Ashgate, Aldershot

Burchardt, J. (2002) *Paradise Lost: Rural Idyll and Social Change Since 1800*, Tuaris, London

Budge, T. (2007) 'Farmland Preservation in Australia: Emerging Issues - Fragmented Responses', in W. Caldwell, S. Hilts and B. Wilton (eds) *Farmland Preservation around the Globe: Challenges and Opportunities*, University of Guelph, Canada

Budge, T. (2009) Food and Health: The missing ingredients in Australia's metropolitan planning strategies. Paper presented to the 47th International Making Cities Livable Conference Portland, Oregon

Budge, T., and Slade, C. (2009) *Health, Food, Land Use Planning and Jobs*, Victorian Local Governance Association, Melbourne

Burke, M. (2009) *Constrained Harvests: a historical view of land use planning and nutrition in Australian cities*, Paper presented at the Making Cities Livable Healthy Cities Conference – Gold Coast Queensland

Business Victoria (2008) *Victoria's Food Industry* [online]. Available: http://www.business.vic.gov.au/BUSVIC/STANDARD//PC_60026.html [Accessed 13 October 2008].

Buxton, M., and Goodman, R. (2002). *Maintaining Melbourne's Green Wedge: Planning policy and the future of Melbourne's green belt*, School of Social Science and Planning RMIT University, Melbourne

Buxton, M., and Goodman, R. (2003). *Protecting Melbourne's Green Belt* *Urban Policy and Research*, 21(2): 205-210

Buxton, M., Tieman, G., Bekessy, S., Budge, T., Mercer, D., Coote, M., and Morcombe, J., (2006) Change and Continuity in Peri-urban Australia, State of the Peri-urban Regions: A Review of the Literature, RMIT University, Melbourne. □□

Buxton, M., Tieman, G., Bekessy, S., Budge, T., Butt, A., Coote, M., Lechner, A., Mercer, D., O'Neill, D., and Riddington, I. (2007) Change and Continuity in Peri-urban Australia. Peri-urban Case Study: Bendigo Corridor, Land and Water Australia, Department of Environment and Heritage.

Campbell, M. (2004) Building a Common Table The Role for Planning in Community Food Systems. *Journal of Planning Education and Research* 23:341-355. Available: Sage Publications.

Cassidy, A., and Patterson, B. (2008) The Planner's Role in the Urban Food System [online].

Available:<http://www.planning.org/thenewplanner/2008/spr/urbanfoodsystem.htm> [Accessed 12 September 2008].

Chatham House (2008) Briefing Paper Thinking About the Future of Food The Chatham House Food Supply Scenarios [online]. Available: http://www.chathamhouse.org.uk/files/11622_bp0508food.pdf [Accessed 4 October 2008].

Clancy, K. (2004), Potential Contributions of Planning to Community Food Systems. *Journal of Planning Education and Research* 2004(23): 435

Cockayne, E. (2007) *Hubbub: Filth, Noise and Stench in England 1600 – 1770*, Yale University Press, New Haven

Cronin, W. (1991) *Nature's Metropolis: Chicago and the Great West*, Norton, New York

Dixon, J. (2003) Authority, power and value in contemporary industrial food systems, *International Journal of Sociology of Agriculture and Food*, 11, 1. 31-39.

Drescher, A. (2001) The Integration of Urban Agriculture into Urban Planning – An Analysis of the Current Status and Constraints [online]. Available: http://www.ruaf.org/files/urban_planning.pdf [Accessed 25 May 2008].

Ferris, J., Carol N., and Sempik, J. (2004) People, Land and Sustainability: Community Gardens and the Social Dimension of Sustainable Development. in Cahill, M., and Fitzpatrick, T. (eds). *Environmental Issues and Social Welfare*, Victoria, AUS: Blackwell Publishing Asia.

Gardner, B. (1994) Highly productive agricultural land - Australia's limited resource. In *Agriculture and Rural Industries on the Fringe*. Australian Rural and Regional Planning Network and TBA Planners, Bendigo.

Gaynor, A. (2006) Harvest of the Suburbs An Environmental History of Growing Food in Australian Cities. University of Western Australia Press.

Gillespie, P., and Mason, D. (2003). Value of Agriculture in the Sydney Region, NSW Agriculture, Windsor.

Houston, P. (1995). Planning for Agriculture at the Fringe. Paper presented at *Regional Planning for Country and City: Bringing the Pieces Together*, Planning Education Foundation of South Australia Inc. Winter Planning Seminar, Adelaide.

Houston, P. (2005) Re-valuing the Fringe: Some Findings on the Value of Agricultural Production in Australia's Peri-Urban Regions *Geographical Research* 43(2): 209–223

Johnson, N., Kelleher, F., and Chant, J. (1998) The future of agriculture in the peri-urban fringe of Sydney, Farming Systems Research Centre, University of Western Sydney, Hawkesbury

Keene, D. (2009) Feeding Medieval European Cities, 600-1500 (Centre for Metropolitan History, UK Available <http://www.history.ac.uk/resources/e-seminars/keene-paper>

Kelleher, F., Chant, J., and Johnson, N., (1998) Community expectations and perceptions of agriculture in peri-urban regions, Centre for Farming Systems Research, University of Western Sydney, Hawkesbury,

Kelleher, F. (2001). Urban encroachment and loss of prime agricultural land, Centre for Farming Systems Research, University of Western Sydney, Hawkesbury

Kennedy, A. (1993). Agriculture in the Sydney Region: a fringe activity critical to the regional economy. Paper presented at Planning for Harmony, Royal Australian Planning Institute (NSW) Annual Conference, Penrith.

Knowd, I., Mason, D., and Docking, A. (2003) Urban Agriculture: The New Frontier [online].

Available:<http://www.wsroc.com.au/downloads/Urban%20Agriculture.pdf>
[Accessed 25 May 2008].

Land & Water Australia (2007) Peri-scoping [online].

Available:http://downloads.lwa2.com/downloads/publications_pdf/PR071250.pdf. [Accessed 14 May 2008].

Lang, T., Barling, D., and Caraher, M. (2004) Food, Social Policy and the Environment: Towards a New Model, in *Environmental Issues and Social Welfare*, eds. Michael Cahill & Tony Fitzpatrick, Victoria, AUS: Blackwell Publishing Asia.

Larsen, K., Ryan, C., and Abraham, A. (2008) Sustainable and Secure Food Systems for Victoria: What do we know? What do we need to know? VEIL Research Report No.1.

Lyson, T. (2004). Civic Agriculture: Reconnecting Farm, Food and Community. Lebanon, New Hampshire: Tufts University Press.

Mazoyer, M., and Roudart, L (2006) A History of Agriculture: from the neolithic age to the current crisis, The Monthly Review Press New York

McKenzie, F. (1996). Beyond the Suburbs: population change in the major exurban regions of Australia, Bureau of Immigration Multicultural and Population Research, AGPS, Canberra.

Mougeot, L. (ed) (2005) Agropolis: The Social, Political and Environmental Dimensions of Urban Agriculture, Earthscan, London

Mougeot, L. (2006) Growing Better Cities: Urban Agriculture for Sustainable Development International Development Research Centre Ottawa

Melbourne and Metropolitan Board of Works (1954) Melbourne Metropolitan Planning Scheme 1954 Report, Melbourne

Parker, F. (2007) Making Periurban Farmers on the Fringe Matter [online]. Available:<http://www.unisa.edu.au/SOAC2007/program/papers/0074.PDF>

Parker, F., and Jarecki, S., (2003). Transitions at the rural/urban interface: "Moving in", "moving out" and "staying put", Paper presented to the State of Australian Cities Conference, Parramatta

Passmore, D. (2007) Big on Rooftop Gardens. *The Courier Mail* [online]. 11 February, 2008, <http://www.news.com.au/couriermail/story/0,23739,21204373-3102,00.html>

Planning (2009) The Magazine of the American Planning Association: August/September Special Issue: The Food Factor

Pothukuchi, K., and Kaufman, J. (1999) Placing the Food System on the Urban Agenda: The Role of Municipal Institutions in Food Systems Planning. *Agriculture and Human Value*. 16:213-224.

Pothukuchi, K., and Kaufman, J. (2000) The Food System A Stranger to the Planning Field. *Journal of the American Planning Association*. 66(2): 113-124.

Pothukuchi, K., Joseph, H., Burton, H., and Fisher, A. (2002) What's Cooking in Your Food System? A Guide to Community Food Assessment, Venice CA: Community Food Security Coalition.

Pothukuchi, K. (2004) Community Food Assessment: A First Step in Planning for Community Food Security, *Journal of Planning Education and Research*. 2004(23): 356-377. Sage Publications.

- Raja, S., Born, B., and Russell, J. (2008) *A Planners Guide to Community and Regional Food Planning: Transforming Food Environments, Facilitating Healthy Eating*, American Planning Association, Chicago
- Roberts, P. (2008) *The End of Food The Coming Crisis in the World Food Industry*, Bloomsbury London
- Russell, E. (1997) *People and the Land Through Time: Linking Ecology and History*, Yale University Press, New Haven
- Rutherford, J., Logan, M., and Missen, G. (1967) *New Viewpoints in Economic Geography* Martindale Press Sydney
- Sandercock, L. (1975) *Cities for Sale: property, politics and urban planning in Australia*, Melbourne University Press, Carlton
- SGS Economics and Planning (2008) *The Economic Significance of the Food Sector*, Melbourne unpublished paper
- Sinclair, I. (2002). *Preserving Rural Land in Australia*, Paper presented to Joint Royal Australian Planning Institute / New Zealand Planning Institute Conference, Wellington.
- Steele, C. (2008) *Hungry City: How Food Shapes our Lives*, Chatto and Windus, London
- Tannahill, R. (1989) *Food in History*. New York: Three Rivers Press,
- Timms, P. (2006). *The Story of the Ordinary Suburban Garden: Australia's Quarter Acre*. Melbourne: The Miegunyah Press.
- Wrigley, E. (1978) *A Simple Model of London's Importance in Changing English Society and Economy 1650 – 1750* in Abrams, P. and Wrigley, E., *Towns in Societies: Essays in Economic History and Historical Sociology* Cambridge University Press London
- Whittock, M. (2009) *Life in the Middle Ages: Scenes from the Town and Countryside of Medieval England*, Constable and Robinson, London
- Willis, A. (n.d.) *From Peri-Urban to Unknown Territory* [online].
Available:http://www.griffith.edu.au/conference/soac2005/published_papers/city_structures/str14a.pdf [Accessed 13 May 2008].

Zeeuw, H., Dubbeling, M., Van Veenhuizen R., and Wilbers, J. (2007) Key Issues and Courses of Action for Municipal Policy Making on Urban Agriculture [online]. Available:http://www.ruaf.org/files/WP_02.pdf [Accessed 19 July 2008].