

Multi-functionality and the Urban-Rural Dichotomy in Australian Metropolitan Planning

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Abstract: This paper reviews the current approach to metropolitan strategic planning in the transitional area between the distinctly urban and rural land known generally as the peri-urban. Peri-urban areas are highly fragmented, multi-functional spaces provide urban areas with a range of services. Productivist cities were developed upon a notion of continuous growth and consumption. Productivist planning regarded peri-urban land as land awaiting higher-order development, mainly for urban purposes. In a post-productivist era there is broad awareness of the finite nature of resources and the need for sustainability. Awareness of the importance of peri-urban land in this regard is also increasing. Recent iterations of Australian metropolitan planning strategies have promoted cities as being 'sustainable' and 'liveable'. Peri-urban areas by their nature are integral to the achievement of these ends. Following an overview of recent metropolitan planning strategies in Australia, the paper critically examines the response of current strategies to the notion of sustainability and multi-functionality and the role of peri-urban land, with particular focus on agricultural production. This paper offers an analysis of Australian metropolitan planning and comments on the treatment of peri-urban land as an integral component of the notion of sustainable and liveable cities.

Introduction

Scientific evidence indicates that contemporary approaches to resource consumption are exposing limits, e.g. peak oil, peak water, peak phosphorous (Holland, 2008; Haberl, 2012). Contemporary modes of operation, e.g. use of fossil fuel use for power generation, transport and industrial production are leading to rapid climatic change (IPCC, 2014). Resource consumption rates and resultant emissions are generally regarded as unsustainable and require new forms of energy and management.

The concept of resource limits also applies to land as the total global amount of land is fixed. Currently, more than 50 per cent of the world's population is urbanized and this is projected to reach nearly 70 per cent by 2050 (DoESA, 2010, 3). Historically, settlement occurs where there is access to reliable fresh water and arable land for food production (Mumford, 1961; Diamond, 2005) and population accommodated by a combination of increasing density and outward expansion into adjoining non-urban land (Fragkias & Seto, 2012). If the amount of land is fixed then urban expansion forces other land uses to relocate and compete for a diminishing supply of land.

This paper argues that contemporary approaches to land use policy are still utilizing modernist economic and market approaches to production and consumption and that these traditional modes of decision-making are unable to cope with the increasing complexity of the post-productivist era land use.

Focusing on peri-urban land use, and agricultural production in particular, this paper offers an analysis of Australian metropolitan planning and comments on the treatment of peri-urban land as an integral component of the notion of liveable and sustainable cities.

Peri-urban land use, pressures and limits

There is increasing debate over food security and the increasing awareness of the importance of agriculture to the quality of city life economically, socially and environmentally (e.g. food miles, food quality, re-engagement with our agrarian roots) (Godfray et al., 2010; Johnson et al., 1998; Mason & Knowd, 2010). Peri-urban land addresses many of these concerns by providing food production in close proximity to the places of consumption,

especially in terms of perishable produce. Fringe land also provides significant ecosystem services on which urban populations rely, e.g. clean water, biodiversity, landscape amenity, recreation space, construction materials and waste management locations. This space is, in effect, multi-functional and diverse (Holmes, 2006).

Buxton and Low Choy (2007) demonstrated that the peri-urban area is an ill-defined area containing dispersed patterns of subdivision, and clusters of non-agricultural activities dispersed among agricultural land uses. Each urban expansion into the peri-urban reduces the land available for food production or the provision of services and amenity to satisfy human needs. The land to which peri-urban activities retreat or re-locate may not be as productive or suitable as the land from which they came (McFarland, 2015).

Modernity, productivism and post-productivism

In this paper, modernity is conceived as the era of scientific break-throughs leading to industrialization, increasing mobility of capital and goods, and rapid social mobility from rural to urban areas. Modernity is characterised by Fordist-production, inward focused nation-states, protectionist policies, nuclear families and hierarchical social structures (Beck, 1992; Mayer & Knox, 2010). Modernity in this sense commenced around the 1750's in the era of scientific discovery (the enlightenment). This then led to industrialization of cities, firstly Europe and then spreading globally. Industrialization was accompanied a shift of population from rural to urban areas. Industrial production led to contemporary market economics.

Economic productivity and growth are key features of Modernism. Western economies, such as the USA, Canada, Australia and Great Britain, are founded on productivist principles. These economies pursue a cycle of mass-production and mass-consumption, providing benefits to society through stable employment and wage structures. Protectionist policies, however, exposed inherent weaknesses in productivism. For example, during the 1980's there was a global-wide oversupply (in terms of the market, there was no 'oversupply' in terms of global hunger) of agricultural commodities due to subsidies to primary producers. Correction of this led to many countries embarking on a process of gradual reduction of protective tariffs and subsidies, thereby exposing producers to the effects of international markets (Argent, 2002). This was the commencement of the post-productivist period with governments in the USA and Great Britain introducing neo-liberal principles into the political realm: smaller government, privatization and market efficiency (Allmendinger, 2009).

The transition from the first age of modernity to the second involves a paradigm shift whereby there are new kinds of economics, law and politics and new types of personal and social life brought about by global interconnectedness and the compression of time and space (Beck, 2000). Decisions of nation-states are now affected by 'the increasing authority and materiality of supranational organizations, the development of transnational regimes and regulations to legitimise decisions, the economization or even ecologization of foreign policy and, in conjunction with this, the blurring of the classical boundary between domestic and foreign policy in general' (Beck, 2000, p. 82). This shift is exemplified by the ability of external bodies (other nation-states, private companies and organisations) to challenge policy decisions of sovereign nation-states. For instance, a World Trade Organisation ruling overturned Australia's policy prohibiting the import of apples from countries affected by fire blight (News Weekly, 2010).

Cities compete to achieve recognition as global cities using standardised factors such as economic performance and physical, social and cultural infrastructure (Robinson, 2002; Lemanski, 2007). Data used for the purposes of identifying and ranking global cities is retrospective. Despite having entered a second modernity the categorisation of cities as 'global' places 'emphasis on a range of economic activities within a certain global reach' (Robinson, 2002, p. 536). Competition for recognition of a city's achievements trans-nationally, occurs without apparent regard for the differential and diverse construct of the city locally. Sydney, for example, promotes itself as 'a sustainability leader, an economic and financial services powerhouse, an international education and tourism destination and a hub for the creative industries and digital economy' (Moore, 2015, online). Sydney, however, is not homogeneous, experiencing variable socio-economic and environmental conditions

geographically. Continued use of outmoded approaches to performance are likely to reinforce inequities and inequalities that exist in cities. Modernist approaches continue to view land as a resource to exploit for its highest and best short-term economic return. traditional economic measures consider land in terms of 'use'. Second modernity requires traditional views of land to be replaced by forward-looking, innovative approaches that redress internal deficiencies and view land and its attributes in a more integrated manner.

Peri-urban land and the limits of an economic growth paradigm

A conventional macro-economic view would consider that the peri-urban values lost due to fringe urban expansion are replaced locally, or globally, under standard market mechanisms. In relation to peri-urban food production, for example, Barr (2003; 2008) would argue that loss of farmland at the metropolitan fringe is a natural progression of urban growth. This progression is a direct and obvious result of policies and social systems focused on economic growth as the measure of successful management generally. Within this approach land is treated as a commodity. As farms close to cities become economically unviable those seeking rural amenity on 'lifestyle' lots replace them. These in turn are replaced, ultimately by the expansion of the urban footprint. The food once supplied by the original local farms, it is argued, is replaced by imported food from further afield. When it is noted that the peri-urban land use change described by Barr affects non-metropolitan and metropolitan areas alike (Houston, 2005) then the effects of peri-urban land use changes become more acute.

Economically, product substitution is a standard market consideration (Barr 2003). This, however, ignores the fact that urban fringe expansion is occurring globally with similar and simultaneous displacement of non-urban services and systems. As urban footprints expand world-wide then increasing competition for declining areas from which to produce goods for markets will occur. Furthermore, all land and its services are not homogeneous. Traditional market economics is flawed in this regard. Land is not a commodity in the same way that manufactured goods are, for the latter are able to be moved about across the globe with far greater numbers of buyers and sellers (Klosterman, 1985).

Historic context of planning in Sydney and Melbourne

Under the Australian Constitution the states have control over land use planning (Stilwell & Troy, 2000). Each state government is responsible for control of comprehensive metropolitan planning; however, metropolitan strategic plans are not included in planning legislation and are, therefore, not subject to the requirements applicable to other land use plans, such as zoning instruments (McFarland, 2011; Mees, 2011).

Prior to World War Two, land use planning in Australia was administered as a subset of local government legislation (Taylor, 1998; McFarland, 2011). Contemporary stand-alone land use planning came into effect in Australia in 1951 with Sydney's County of Cumberland Planning Scheme (CCPS) (Coleman, 1969) and Melbourne's 1954 Metropolitan Planning Report (MPR) (MMBW, 1954). Rapid population growth between 1945 – 1960 led to unprecedented demand for new, mainly detached, housing in Sydney and Melbourne (Taylor, 1998). Both the CCPS and MPR were based on a rational-procedural approach to planning whereby land allocation resulted largely from demographic projections (McLoughlin, 1992). Political objectives were imposed on the plans, with urban boundaries described so as to provide land for urban growth over the ensuing twenty-five to thirty years, and to contain the economic cost of new infrastructure (MMBW, 1954; Taylor, 1998). Table 1 shows the progression of metropolitan strategic plans in Sydney and Melbourne from 1951 to the present.

Table 1 – Timelines of Metropolitan Strategic Plans: Sydney and Melbourne, 1951 – 2014

Year	Sydney	Melbourne
1951	County of Cumberland Planning Scheme (Coleman, 1969)	
1954		Melbourne Metropolitan Planning Report (MMBW, 1954)

1968	Sydney Regional Outline Plan (Searle, 2002; Bunker & Houston, 2003)	Melbourne Metropolitan Planning Report adopted(MMBW, 1971)
1981		Metropolitan Strategy Implementation (MMBW, 1981)
1988	Sydney Into Its Third Century (Searle, 2004)	
1994	Cities for the 21 st Century (Searle, 2007)	
1995		Living Suburbs (Vic. Gov., 1995)
1998	Shaping Our Cities (DUaP, 1998)	
2002		Melbourne 2030 – Planning for Sustainable Growth (DoI, 2002)
2005	City of Cities – A Plan for Sydney’s Future (DoP, 2005)	
2009		Melbourne @ 5 Million (DoPCD, 2010)
2010	Metropolitan Plan for Sydney 2036 (DoP, 2010)	
2013	Draft Metropolitan Strategy for Sydney 2031 (DoPE, 2013)	
2014		Plan-Melbourne (Victorian Government, 2014)
2015	A Plan For Growing Sydney (DoPE, 2015)	

Without exception, all metropolitan planning strategies for Sydney and Melbourne have resulted in urban growth expansion (Figures 1 & 2) (Bunker, 2002; McFarland 2013). The few attempts to protect peri-urban land have been conditional and short-lived. Melbourne’s 1954 *Metropolitan Planning Report*, for example, recognised that continued urban boundary growth ‘increases the disabilities inherent in this type of growth and put out of production more and more food producing areas’ (MMBW, 1954, 22). In response to this the Victorian Government introduced a metropolitan urban growth boundary (UGB) in combination with ‘green wedges’, the preservation of non-urban areas between the urban growth corridors (MMBW, 1971). Green wedges were to provide permanent protection of agricultural and environmental resources as well as major infrastructure, e.g. airfields and sewerage treatments plants, and resource-producing land, such as quarries for building materials (Alastair Kellock & Associates, 2000). Melbourne’s UGB and the green wedges remained in place until 1981. Since 1981’s *Metropolitan Strategy Implementation* report each strategy has stated that peri-urban land values are important and will be respected; yet on each occasion Melbourne’s urban growth boundary and the green wedges have been eroded or trans-located (Buxton & Goodman, 2003; Mees, 2011). *Plan-Melbourne*, adopted in May, 2014, proposes a (new) permanent boundary around Melbourne on the basis that ‘Melbourne’s outward growth has generally reached its natural boundaries of mountains, floodplains, productive agricultural areas and important natural habitats’ (Vic. Gov., 2014, 162).

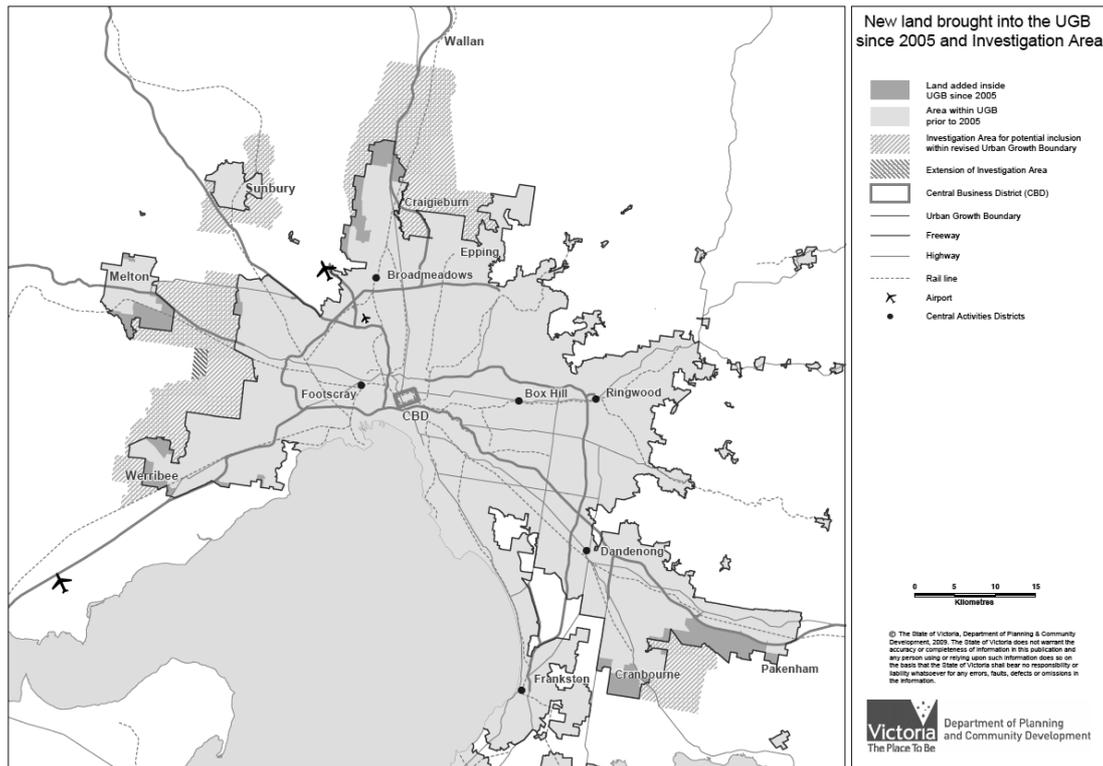


Figure 1: Melbourne's urban growth 2005 – 2009 and areas for future expansion.
Source: Victorian Department of Planning and Community Development (2009).

Metropolitan planning in Sydney has followed a similar growth trajectory to Melbourne's. Since 1951 each metropolitan plan has come under pressure to provide additional land releases for a rapidly increasing population (Searle, 2002; 2004). Metropolitan plans since 1988 have indicated urban growth corridors to the north-east and south-west of the existing urban boundaries. These growth corridors will consume approximately half the 2,025 hectares currently under production for vegetable growing in the Sydney area (Malcolm & Fahd, 2009). Wilkinson (2011) estimates that overall the greater Sydney region will lose about 6,800 hectares of peri-urban land under *Sydney 2036*. The proposed solution to replace the lost food production is to grow food of the equivalent economic value intensively on industrial sites (DoP, 2010, 250). This indicates either indifference to, or a lack of understanding of the other non-economic values of peri-urban land, especially the multi-functionality of agricultural land, and its importance to urban populations.

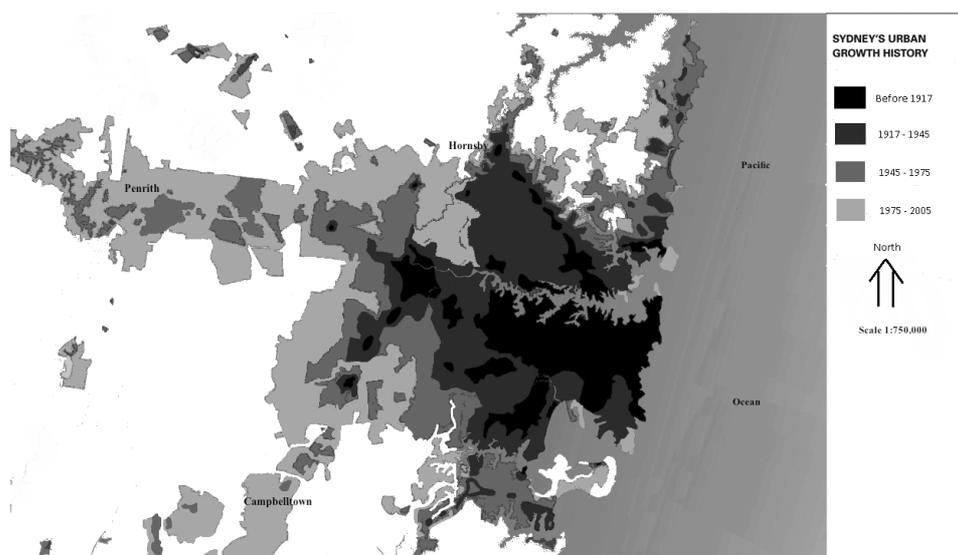


Figure 2: Sydney's urban growth trajectory.

Source: Adapted from NSW Department of Planning (2005).

In *Sydney 2031* recognition appears to be given to the contribution that peri-urban agriculture makes to the metropolitan population by stating that 'metropolitan rural land will also be supported for the economic, social and sustainability values that local jobs and a reliable supply of fresh food bring to Sydney's future' (DoPE, 2013, 12). However, as with *Sydney 2036*, *Sydney 2031* also proposes industrially-based agricultural production to replace food grown on peri-urban land subsumed by urban fringe growth.

The rural provisions of *Sydney 2031* are linked to Goal 3 in *NSW 2021: A plan to make New South Wales number one (NSW 2021)*. Mapping of rural lands is proposed, but only *ex post facto* (DoPC, 2011, 11). Rural land management is divided between Goal 3 'Drive Economic Growth in Regional NSW', where agriculture is considered only as serving regional economic growth, and Goal 22 'Protect Our natural Environment', where natural resource management is largely considered from an urban perspective (DoPC, 2011, 44-45).

Sydney, Melbourne are the largest population centres in their respective states and have experienced similar patterns of rapid population growth (Table 2). Both operate under a three-tiered federation, with State governments enacting planning legislation. In each case local government authorities administer land use planning under State-approved plans and policies. A judicial appeals process for statutory planning operates in both locations.

An international comparative perspective - Portland, Oregon

Portland, Oregon is introduced here to provide an international comparative perspective. Portland is regarded as an exemplar of land use planning (Walker & Hurley, 2011; Adler, 2012). Sydney, Melbourne and Portland are the most significant population centre in their respective state and show similar, rapid population growth rates (Table 2). Post-1940 land use planning history in Oregon also bears some similarities to that of Sydney and Melbourne. During the 1940s Oregon experienced rapid population growth due largely to west-coast ship building for World War Two (Adler, 2012). A second wave of population growth occurred during the 1960s with a wave of amenity-led migration (Walker & Hurley, 2011). Rapid population growth occurred in Australia during the same period, mainly from post-war immigration and high birth rates (the 'baby boom'), with Sydney and Melbourne in particular experiencing the fastest growth (Taylor, 1998). However, land use planning responses in Sydney and Melbourne differ significantly from Portland (Table 3).

Table 2 - Population of Sydney, New South Wales, Melbourne, Victoria and Portland, Oregon 2000 - 2010.

	2000	2010	Population change %
Sydney	4,085,578	4,550,200	+11.37
New South Wales (Total)	6,436,455	7,144,928	+11.01
Melbourne	3,466,000	4,108,441	+18.54
Victoria (Total)	4,765,900	5,468,430	+14.74
Portland metropolitan area	1,927,881	2,226,009	+15.5
Oregon State (total)	3,421,399	3,831,074	+12.0

Source: Australian Bureau of Statistics (2014, online); U.S. Census Bureau (2014, online).

A comparative analysis of the land use governance systems in Sydney, Melbourne and Portland is shown in Table 3. Sydney and Melbourne share similar features indicative of a centralised planning system. Portland indicates a broader, more multi-faceted approach to land use planning.

Table 3- Comparison of Land Use Governance in Sydney and Melbourne

Land Use Governance Features	Sydney	Melbourne	Portland
State Legislative Governing Framework	✓	✓	✓
Regional Strategic Planning Authority	x	x	✓
Local Government Planning Administration	✓	✓	✓
Community-led Planning System	x	x	✓
Objective Measures of Compliance	x	x	✓
Citizen-initiated Plebiscites	x	x	✓
Planning Structure Applies Equally to Public & Private Land Use Proposals	x	x	✓
Fast Track Approvals Process Applies to State Significant Development	✓	✓	x
Independent Panel Review of Planning Strategies	x	x	✓
Judicial Review of Planning Strategies	x	x	✓

Discussion

Although Sydney's and Melbourne's planning strategies contain provisions describing the importance of non-urban land values (economic, social and environmental) and the need for these to be appropriately managed, the plans primarily focus on growth from an urban perspective. The result has been outward growth, despite what may have been intended (Figures 1 and 2).

Table 4 compares Sydney's, Melbourne's and Portland's population density since 1970. Density was calculated from population relative to the metropolitan area at the respective

date. The data indicate that Sydney and Melbourne's urban growth strategies continue to exhibit characteristics of urban sprawl described by Newman and Kenworthy (1989), encompassing relatively low-density fringe urban expansion (Buxton, 2014) (Figures 1 and 2). Portland is a transit-oriented city with constraints on urban fringe expansion through the use of UGBs and medium-density housing development around transport nodes. Portland's density is relatively moderate by comparison with other cities (Angel et al., 2011).

Table 4 – Population density: Sydney, New South Wales; and Melbourne, Victoria 1970 - 2010.

	1970 (persons/km ²)	1990 (persons/km ²)	2010 (persons/km ²)	Density change 1970-2010 (%)
Sydney	215.6	299.2	377.8	+4.06
Melbourne	233.6	300.6	425.2	+4.79
Portland Metropolitan Area	1154.4	1,622.7	2,370.6	+30.41

Source: Australian Bureau of Statistics (2014, online).

While *Plan-Melbourne* openly acknowledges the continuous urban growth emphasis in Melbourne's metropolitan planning, it is ironic that the plan considers that this new boundary will 'provide long-term certainty to the planning objectives originally set-out in the early 1970s, which sought to preserve the non-urban values of the land surrounding Melbourne's urban areas' (Vic. Gov., 2014, p.162). *Plan-Melbourne* subsumes the planning narrative of the previous forty years in one broad statement. The 'certainty' provided in *Plan-Melbourne* is no greater than that of the preceding plans.

The content of metropolitan planning for Sydney and Melbourne indicates that the focus is on short-term economic benefits over the long-term effects on the natural environment (White, 1994; Buxton, 2014; Ruming & Gurran, 2014). The urban growth strategies for Sydney and Melbourne reinforce the conceptualisation of urban and rural land as being clearly distinct (Lerner & Eakin, 2011) and aspatial (McGuirk, 2005), as if it is an 'either/or' choice. There is a conspicuous divide between social and environmental interests (Bartel *et al.*, 2014). Achieving a balanced planning system requires integrated consideration of urban and non-urban land use values. Protecting rural land and containing the rate of urban boundary expansion provides economic, social and environmental benefits for the whole community (Dragun & Tisdell, 1999; Knowd *et al.*, 2006; Gosnell, *et al.*, 2011).

The proposed loss of half of the productive vegetable growing land under Sydney's metropolitan strategy will lead to increased food imports with the attendant issues accompanying the debate over 'food miles', including energy consumption, transport congestion, resource management, production pressures on other agricultural land, food quality and amenity (Malcolm & Fahd, 2009). Issues in relation to rural resource protection, especially agricultural land, receive superficial treatment. While some agricultural production can be undertaken intensively in the intensive manner suggested for Sydney, e.g. hydroponic vegetables and flowers, this approach to food production indicates that planning has become aspatial, with:

Its economic dimensions aimed at enhancing place competitiveness; its social dimensions aimed at securing a competitive 'quality of life' (an amalgam of amenity culture and place characteristics); and its environmental dimensions aimed at ecological modernisation (the governance of environmental resources to secure economic survival, particularly through their marketisation and privatisation). (McGuirk, 2005, 60)

This aspatial planning approach reflects a disconnect between land and its social and environmental functions (Low Choy & Buxton, 2013). Generally, urban residents lack

connection to the way food is produced and, therefore, no longer is there an understanding of the importance of land in this process (O'Hara & Stagl, 2001). Food is now viewed only in terms of the availability of its end products and these are largely presented in an abstract form through processing and packaging (Vileisis, 2008).

Planning for Sydney and Melbourne post-World War Two has always been undertaken as a centralised process (McFarland, 2011; 2013). Early plans were largely technocratic and adopted relative to the prevailing planning theory, with each plan proposing to achieve a balance between social, economic and environmental outcomes (Taylor, 1998). Since the 1980s planning has moved from the realm of the technocratic planner to be increasingly driven by political-economic imperatives responding largely to global influences (Searle, 2002; 2004). This evolution has resulted in divergence between urban and rural interests and bifurcated social and environmental outcomes (Bartel *et al.*, 2014). This has led to continual fringe expansion, based on traditional economic measures of land use, whereby the relationship of peri-urban values to urban populations are largely ignored (Low Choy & Sutherland, 2008; Low Choy & Buxton, 2013). Even though contemporary planning in Australia has attempted to embed consultation and communication as an integral part of the process of planning, both for strategic planning and specific development proposals, the general population has been largely alienated from the process of plan-making and implementation (Ruming & Gurran, 2014).

Public trust in the planning system has been generally lost in Australia (ICAC, 2010). Methods of restoring public trust in planning that facilitate shared ownership and mutually beneficial outcomes are needed (Healey, 1997; 2003). The development of a new planning framework for Australian metropolitan planning through meaningful engagement of the community could afford the opportunity for transformative change. Through this the community would engage directly in the development of a new planning approach, rather than the top-down approach by which planning is imposed on the community.

Embedding substantive and objective measures of outcome in Australian planning legislation and requiring these measures to be addressed in all land use plans would create consistency and transparency. This could overcome the unsustainability resulting from a substantially urban economic emphasis and amorphous performance measures in current metropolitan plans. Adopting such an approach in Australian metropolitan planning provides an explicit and direct relationship between strategic plans and core legislative principles.

Metropolitan planning in Sydney and Melbourne appears to utilise long-established routines. Change occurs in an iterative manner of incremental change. Such a process is indicative of single-loop learning (Jensen, 2005). Single-loop learning is ineffective in solving complex problems, such as the effects of market globalisation, climate change or global warming. An alternative approach would be to utilise double-loop learning. Double-loop learning involves reflection on the assumptions inherent in our understanding of a problem and the stated goals. In this manner both the goals and the actions can be reframed and a new approach developed (Pahl-Wostl, 2009).

Conclusion

Global urbanisation produces similar issues for metropolitan planners everywhere: accommodating urban fringe growth while maintaining peri-urban food production, ecosystem services and amenity. The Sydney and Melbourne examples demonstrate the rapidity with which peri-urban land may be consumed when planning systems fail to consider the cumulative effects of the loss of production, ecosystem services and amenity and increasing scarcity of these resources.

Australian metropolitan strategic planning follows an urban growth trajectory, concerned only with accommodating low-density urban development. Peri-urban land values are largely ignored. In an era of second modernity cities need to address outmoded modes of operation as encouraged by global city rankings. In second modernity cities need to more openly address issues of exclusion and inequality. Specifically in relation to this paper, the multi-functionality of peri-urban land needs to be addressed concurrently with outmoded measures

of economic performance developed in the modernist era. Land use planning in Oregon indicates that there are international examples providing valuable lessons for the management of land use in a manner that facilitates urban population growth while considering urban and non-urban land values synchronistically.

Australian metropolitan planning frameworks currently operate under a single-loop learning process whereby goals are established and the solutions developed in order to reach those goals. This is a limited means to resolving complex problems, such as climate change and global warming. Change as suggested in this paper is feasible within the existing political and legislative structures. The effect on land use would be to provide a system that moved from simple 'either/or' choices to mutually-beneficial, shared outcomes for urban and rural populations, especially in the increasingly important peri-urban areas. Under a more concordant system public costs are contained and socio-environmental benefits increased. Each iteration of Australian metropolitan planning along the current trajectory threatens the quality of urban living as well as long term sustainability. Utilisation of a problem-solving approach, such as double-loop learning offers a means of developing appropriate strategies to accommodate urban growth and, at the same time, preserve the multi-functionality of peri-urban space.

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