Making Cities Livable

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Title: "Constrained Harvests: a historical view of land use planning and nutrition in Australian cities"

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Abstract:
This paper explores the role of land use planning in influencing aspects of nutrition in Australian cities, including food production, processing, distribution and access, consumption, marketing, promotion and the availability of nutrition related services and facilities. Drawing on a major review conducted by the author for Queensland Health and the Heart Foundation, a historical perspective is used to highlight the changes in urban and regional planning, food systems, and population eating habits and behaviours that have taken place since the early 20th Century in cities such as Perth, Sydney and Brisbane. Where once the planning of orderly suburban expansion was partly predicated on the benefits of home-grown produce, few meaningful planning interventions have emerged that respond to the current nutrition crisis. Most attention in the paper is placed on recent shifts in food systems, urban restructuring and consolidation. Areas of concern are highlighted. Urban consolidation is shown to have increased the proportion of Australians living in apartments and created a unique form of small-lot detached housing in greenfields development, constraining domestic production opportunities. The community gardens movement has little support and is rarely provided for in new developments. Good quality agricultural land in regions surrounding cities is being retained in some jurisdictions and lost in others. High densities of fast-food outlets are observable in many suburbs. Vending machines and junk food advertising dominate major activity centres. The paper highlights and critiques planning interventions that have been employed in Australia in response, and discusses those being mooted for introduction.

Introduction

It is increasingly recognised that the urban environment is implicated in the health outcomes of citizens, including in the area of nutrition. My paper focuses on the notion of planning for nutrition in Australian cities. It draws on research conducted at Griffith in 2008. I wish to focus on two key aspects to provide insight into the dimensions of the problem. After some early starting points setting up the framework and key concepts I'd like firstly to go through a short history of key changes to urban and regional planning, food systems, and population eating habits and behaviours in Australia, and how this has impacted on nutrition. Secondly, I'd like to like to use this historical focus to question what this means for the supportive environments movement, which is seeking to alter the built environment to encourage positive human health.

Key concepts

What is nutrition?

Nutrition may be defined in a much broader way than simply the constituent materials in human food. Nutrition includes all the factors which are part of, and/or influence, the food system and population eating habits and behaviours (Yeatman 2003). When viewed in this way, nutrition includes a number of systems that interact to provide food, and that in part determine whether healthy or unhealthy food options are available to and marketed to the public in urban areas. This is especially an Australian problem. In this nation, "because the majority of people live in cities and towns, the environment within [those localities] also has a direct effect on people's quality of life, including health and access to services." (Beeton et al. 2006:7).

Is there evidence for land use/nutrition relationships?

There is emerging evidence regarding links 'between contemporary public health epidemics, such as obesity and depression, and aspects of our urban environment', which have emerged in parallel with the increasing suburbanisation of Australian cities' (Capon 2003: 21).

The food environment can include availability and accessibility to food as well as food advertising and marketing. There is particular interest in how the built environment and urban systems may influence food security and nutrition. Food security may be defined as 'the ability of individuals, households and communities to acquire appropriate and nutritious food on a regular and reliable basis, and to do so using socially acceptable means (Carter and Taylor 2007:23).

In conducting this review we uncovered significantly more studies linking the built environment to nutrition than we expected, however the evidentiary support is more limited than that obtained for physical activity. In particular, there are very few studies demonstrating an association or causal relationship between the built environment and eating behaviours. And other than for interventions such as community gardens, there has been little research testing built environment interventions for nutrition. More research and evaluation of such initiatives is a pressing need.

Expanding on that literature is not the purpose of this presentation. But for those interested further, my colleagues at Griffith and I published a review of that literature and it is available at the Urban Research Program website, for which I'll provide details at the end of this presentation. This is not to overplay the role of the built environment: the real answers to most of our problems likely lie in solving the over-production and hyper-consumption under our present neo-liberalism. How we may feasibly transition towards more sustainable political and economic relations is unclear. That said, planning may offer some ways forward. But let us just say that whilst the evidence-base for environmental influences on nutrition is thus far relatively slim, this is not a rare problem in urban studies. Disentangling the influence of one aspect of the built environment, from the milieu of personal, social and environmental factors influencing a particular behaviour, is notoriously difficult. Yet while some environmental

influences on eating behaviour may be weak, they can influence large segments of the population on a daily basis. For instance, foods served at schools and workplaces limit the food options for everyone in those settings. And every driver and passenger, however young, sees signs for fast food outlets along the roads they travel on a daily basis (Booth et al. 2001:S22).

How does land use planning fit in?
Land use planning can influence nutrition in many ways, including via:

- Food production [agricultural land and gardening];
- Food processing, distribution and access [retail mix and accessibility; distance and transport to shops, food availability, drinking fountains]
- Food consumption [consumer behaviour and choices, food prices, quality and variety, food knowledge, skills; storage, preparation and cooking facilities]
- Food marketing and promotion [signage; vending machines; sponsorships]
- Nutrition-related services and facilities [parenting rooms; nutrition education programs, community kitchen facilities and community programs]

(Pretorius 2008:3)

There are emerging moves to take the Supportive Environments approach from the more advanced field of physical activity to the field of nutrition, targeting land use planning to change our future built and social environments.

Critically, if one is to look behind the changes in diet and physical activity observable in the Australian population there have also been very large shifts in food production, food processing, and food distribution systems as well as in food shopping and eating options. Land use planning is implicated in many of these changes. And these shifts have seen an irrefutable increase in the availability of energy-dense, nutritionally-poor foods to consumers. Changes have been seen in such areas as the accessibility and (local) production of healthy foods, increased accessibility of fast food, a proliferation of outdoor food advertising and shifts in domestic and commercial design. It is these aspects that I'd like to explore through use of the historical narrative. Shall we begin on that journey…

Past Australian Urban Food Environments
Andrea Gaynor's PhD research on the history of growing food in Australian cities, published as *Harvest of the Suburbs* (Gaynor 2006), illustrates just how much our urban food environments have changed since WWII. Her exceptional research raises important questions, including many about the complex economic, spatial and social reasons people choose domestic and communal food production, and their interactions with food systems.

As Gaynor notes, cultivation within our cities was once commonplace. In the 19th and early 20th century market gardens were common, with horticulture flourishing near cities such as the Yarra (Melbourne) and the Swan (Perth). Many households, especially those with larger gardens in middle and outer suburbia, were 'partially or wholly self-sufficient in fruit, vegetables, eggs and sometimes also milk' (Gaynor 2006:21). Cathy May (1997:51) wrote of Bayswater in Perth that 'Even in the most built up areas, large vegetable gardens with a few fowls or ducks were common.' In Brunswick, Melbourne, in 1881 some 40% of households owned large livestock, and 63% owned poultry (Gaynor 2006:19).

The particular form of Australian suburbanisation encouraged domestic production. Australian cities differed greatly from their European forebears. A 'compact' was developed between colonial administrations and the settlers of the Australian frontier in which urban population growth was accommodated through outwardly spreading suburbs. Cheap land and the transport technology of the streetcar and railway, along with cultural preferences and the

emergence of building societies are regularly cited as key factors in the emergence of suburban home-ownership (Frost and Dingle 1995:22). However, the late Patrick Mullens suggests that raw political-economic factors under our industrial urbanisation, such as a lack of concentrated industry and therefore little factory-owned rental housing, left households no option but to pursue land purchase and house construction. He suggested that Australian capitalism before WWII produced an 'urban peasantry' in a position of 'forced self-sufficiency' (Mullins 1981a) with life 'centred around the house and yard' (Mullins 1981b:38). Whether forced or by choice, it led to a unique national domestic economy. While Mullins is critical, this supplementary production helped much of the working class feed themselves through the depressions of the 1890s and 1920s, as well as the hardships of two World Wars. Privately owned, detached housing on large allotments (mostly 1/6 to 1/4 of an acre) allowed suburban dwellers the room and freedom to garden, and both water tanks and reticulated water the means. Horse manure, the 'pollution' of the common form of transport before the motorcar, was readily available (Gaynor 2006:23).

There were some deleterious aspects of domestic production, including the problem of backyard and butcher-shop slaughtering of livestock, which local authorities sought to prohibit with the roll-out of abattoirs. And yet, from early in the life of our cities most nutrition was based not on domestic production, but on foods produced elsewhere.

Supplementing the domestic production were market gardens, which proliferated along the flood-prone waterways that snake through each of the Australian state capital cities. Then into the broader hinterlands where cattle and grain properties fanned out.

I'd now like to challenge the conventional view or what I term the 'imagined past' of Australia's food landscapes in a few key ways. Firstly, there is a belief in some quarters that Australia's cities were once subject to a strong local bio-regionalism. That is, that the majority of urban food was produced either within the city or within its nearest environs, based on the transport technologies and food storage systems of the time. There are many in the slow foods and cooperative movements who promote a 'return' to this imagined past. Now it is true that in the very earliest days of each of the colonies that Australia's urban dwellers had only local production, a more seasonal diet, with less variety and choice, and fewer mass-produced foodstuffs. But the construction of railways and the development of processed foods from very early in our urban evolution changed this.

Railways allowed for food, especially grain but also hardier fruits and vegetables, to be transported significant distances to markets. The rapid expansion of Australia's rail networks meant that at the time our cities really became cities, they were serviced by extremely large hinterlands, certainly compared to the food landscapes of Europe. This in part explains why there was so little diversity and local specialisation (that particularly type of ham, or particular type of cheese) in Australia's culinary history.

Food processing was also a critical part of the early Australian urban experience. In the 1890s much of what was bought in grocery shopping was in bulk supplies, requiring lengthy preparation at home, although the dubious advance of white bread had already emerged (Symons 2007:114). But by the turn of the century industrialisation advanced rapidly with many factories producing 'jams, bread, biscuits, butter, margarine, condensed milk, cheese' and preserved meat (Humphery 1998:41). As processed foods such as 'ready-to-eat breakfast foods', tinned meats and fruits, baked goods and confectionary became widely available, diets transitioned more and more towards packaged goods (Humphery 1998:45). The processed goods brought food marketing to new heights, with branding a key element. And these non-perishable goods were transported across the country. Australians were early and somewhat eager adopters of this major shift in food production and consumption.

Further, backyards were not all full of chooks, corn-rows, plum trees and strawberry patches. The widespread adoption of ice-chests and ice deliveries made storage of perishables possible early on in Australian cities. The hinterlands produced food relatively cheaply. With less need for home-grown food, the 'bourgeois ideal' instead became 'an ostensibly ornamental garden, featuring unproductive lawn and a miniscule vegetable plot' (Symons 2007:69). The middle-classes have never been enslaved to the demands of domestic food production.

And in another challenge to some long-held views, I'd like to suggest we have also long been suburban shoppers. In the early 1900s, food retailing was via multiple means, including co-operative stores, the emergent variety stores (including Coles and Woolworths) as well as the produce markets. 'Street traders' and corner stores fulfilled more local needs (Humphery 1998:36). However by the 1920s, retail had moved to where people lived in the expanding suburban peripheries, and high street retailing in outer suburban locations was dominant, with most strips including a butcher, grocer, fruiterer, baker/cake shop, and a corner shop/confectioner (Humphery 1998:38). Australia's transport agencies and land developers encouraged this profitable urban form, often shaping high streets along tram lines and at key rail stations. Food retail was oriented to the transport technology of the time.

Fordist Suburbia

From the 1950s onwards the long expansion of the Australian economy showed a new face, Fordist economic relations, low density suburban expansion, movement of jobs and services to suburban locations, and embedded within it all, the emergence of mass motorisation. Urban planning emerged in a Modernist new face, planning for the growth of cities via infrastructure and service provision.

Mass motorisation brought new geographies for food retailing. Car-oriented retail developments, the modern supermarket and the first shopping malls, and new city-scapes of roadside advertising emerged. The Golden Fleece chain of service station restaurants, founded in 1957, presaged the rise of fast-food chains across Australia (Pickett 1998:125). And there were social changes. Rotary engine lawnmowers made keeping lawns easier. The arrival of television interrupted evening meal times (seemingly forever). Spawned by the motorcar, self-service grocery shopping grew rapidly, reducing irreparably the markets of street traders. A week's supply (approximately 50 kilograms for a large family) could now be carried by the motorcar from one store to home. And the car could travel significant distances to larger, cheaper stores with greater ranges of goods (Symons 2007:206). Supermarkets could be built away from traditional retail strips where land and rents were inexpensive, placing the costs of transport on the shoulders of their customers. The economic efficiencies were unbeatable. But the preference of supermarkets for non-perishable goods: tinned, dried and frozen. Fresh seasonal produce was 'scarcely tolerated' in the earliest phases (Symons 2007:214) though some chains were later to proclaim they were 'fresh food people'.

Land use planners generally encouraged these trends, particularly in retail centre planning and design. Indeed, Modernist planning was highly attracted to the future offered by the automobile city. The 'science' of supermarket retailing based on shelf arrangement, corridors of movement and managed traffic flow, was replicated in the mobility-focused planning for cities. Planning for new freeways and neighbourhoods designed around access to them proliferated in the 1960s. Planners introduced concepts such as retail hierarchies (neighbourhood, sub-regional and regional shopping centres) creating new distributions of food access. Access by households without cars was to be by buses, with the trams that were the lifeblood of most traditional retail strips, where grocers, butchers and bakers were holding on, removed by governments everywhere but in Melbourne following the advice of (mostly US) transport planners (Wilbur Smith and Associates 1965). Public transport use plummeted. A new geography of transport disadvantage emerged.

To be fair though, the metropolitan plans of the 50s and 60s, such as the MMBW Plan for Melbourne (1954), did include green belts to constrain suburban expansion. This innovation offered the retention of land for market gardens, orchards and dairying close to urban centres, though they were often naïve to the issue of preserving high quality agriculture land per se. And in some cases those green belts were spectacularly ignored.

But food production, storage and distribution continued to change. Larger, more industrial farms used specialisation and irrigation to produce large volumes cheaply. Canning and other technologies continued to improve and for the first time frozen foods, and the white goods to keep them, became available. Market gardens near cities declined in total area, despite population growth (Gaynor 2006). National and global logistics chains emerged to transport processed goods ever further, though tariff protection meant most goods on the shelves were Australian. Costs fell, yet most commentators argue nutritional standards did not rise.

By the 1970s there were few economic incentives left for domestic production, with cheap industrialised meat and processed foods readily available. This finalised the transformation of gardening into a form of recreation. According to Mullins (Mullins 1981a:70) the new auto-centred form of "suburbanisation … spelled the demise of Australia's urban peasantry, for the vegetable garden, the chicken run, the fruit trees and the highly developed domestic economy was replaced by mass consumption, where food could now be bought more easily and cheaply at supermarkets and the availability of other cheap consumption items also meant that goods once made, cultivated and consumed in the smallholding were now bought." Gardens for display replaced the productive, even for the working class. My mother's sole lemon tree bears testament to this shift.

Land use planning was used directly to condition residents to these changes. From the 1950s onwards, attempts to exclude large livestock and even poultry from Australian suburbs intensified, mainly through the use of land use planning codes or other Council by-laws. Chicken coops, if allowed at all, could only be located away from boundary fences in some localities. Cows, goats and other livestock were allowed solely in 'agricultural zones' elsewhere. Only vegetable gardening and fruit trees [associated more with middle-class groups] did not challenge the new suburban order and were tolerated (Gaynor 2006:132,137).

The neoliberal era and urban consolidation

From the mid-1970s onwards there were a number of changes to the Australian settlement. The restructuring of the Australian economy [i.e. the removal of tariffs, deregulation, new balances of power between labour and capital] created winners and losers and transformed our cities, with new planning paradigms emerging. Our cities began polarising under neoliberalism. Parts of cities tied to certain economic sectors (i.e. professional services and finance sectors) have boomed. But households, and sub-regions not so fortunate struggle to generate projects and income, whilst "being denied direct distributional flows from sites of prosperity now that post-war social and spatial distributional systems have largely been dismantled" (O'Neill and Fagan 2006:207). This renting of the urban fabric, most clearly evident in Western Sydney, may start to evidence itself in polarising food environments, though the research to confirm it is lacking thus far. What we do know is that the offer of the major supermarket chains, particularly in fresh fruit and vegetables, does differ significantly according to geographic location.

Further, the logistics chains of major supermarkets see food that may be grown locally shipped interstate for processing and packing before being shipped back to the region of its origin. When linked with the increasing specialization of farming particular crops in vulnerable locations of Australia, this production and distribution system is seen as potentially vulnerable to failure. We saw this most clearly with the destruction of much of the nation's banana crop in Northern Queensland in early 2006 and the resulting banana drought, which

for our international guests was a major crisis in the Australian nation, especially for us Queenslanders.

Fast food restaurants, food courts and bottle shops have flourished from the 1980s onwards, seemingly without reaching saturation point, creating a dire food landscape according to nutritionists. The economic efficiencies of low-wage casualised labour doling out pre-packaged sugary and salty food to the masses has been difficult to contain. There have been a few sporadic attempts to halt the fast food chains via planning and other local challenges, with varying motivations. I'm not convinced that the residents of Noosa were solely concerned about nutrition in their attempts to keep McDonalds out of their paradise. Notions of class and aesthetic complaint might be other factors. Regardless, very few local governments have succeeded, and state governments have been reticent to intervene.

Metropolitan planning has also changed since the 1980s as the contradictions of car-oriented suburbia were realised and planning moved away from continued suburban expansion towards urban consolidation, compaction, and more recently, the development of transit oriented development. Design movements such as the New Urbanism have been embraced by the planning fraternity and state and local governments. Each of these are noble ideas, if enacted cleverly, on environmental and economical grounds. Yet the way in which consolidation has been unleashed on our urban landscapes, particularly in Sydney, gives little cause for comfort (see Gleeson 2006). Laissez-faire consolidation has not necessarily improved our cities. Further, none of these movements has to any significant degree made linkages to food landscapes and nutrition, other than perhaps the New Urbanists mostly aesthetic complaints about fast food chains and their built form and outdoor advertising.

In the last decade, Metropolitan strategies have been introduced for all Australia's state capital cities. Each strategy includes strict restrictions on peri-urban residential development, using instruments such as growth boundaries. Further, they now generally include preservation of high quality agricultural land. But often these sites are used for bulk processed goods for export elsewhere (i.e. the sugar farming land protected between Brisbane and the Gold Coast) not for bio-regional supply of seasonal produce to the city.

Though few suburbanites have used their gardens for domestic production, the urban consolidation agenda means that less households have access to a private garden. Further, as noted in my colleague Tony Hall's pioneering work on disappearing Australian backyards (Hall 2007) with the reductions in lot sizes encouraged in the new greenfields developments, many private gardens are now too small or poorly sited for efficient production. Though the economic conditions suggest no crying need, the opportunities for future generations to rely on domestic production as a source of food for their households is being eroded from the landscape.

The result is obvious in the Australian diet. Right across the nation the consumption of fresh fruit and vegetables has declined and the consumption of processed foods has increased. Many adults do not achieve the recommended two serves of fruit and five serves of vegetables per day (Carter and Taylor 2007).

Changing food systems provide both risks and opportunities for nutrition. Most concern appears to be about the proliferation of highly processed, energy-dense foodstuffs, high in sugar and fat, filling supermarkets and other food outlets (Webb and King 2007). However planners have mostly done little to restrain outdoor advertising of such products, or considered controls to lessen their proliferation. The marketing of energy-dense confectionary, fast food and other unhealthy food choices is now a major feature of the urban landscape. The proliferation of billboards, illuminated signs, corporate livery on transport vehicles, retail signage, transit stop signage, on-board advertising on public transport, vending machines, to name just a few, ensure the built environment consistently provides urban

populations with marketing messages, numerous times a day . And signage has grown not just in volume, but also in size. Signs previously designed at smaller human scales are now designed at what Jan Gehl (1987) calls the '60 km/h design speed' with the illuminated signs of fast food outlets on urban arterials rising to enormous proportions.

Resistance
There are emerging beacons of hope though. Counter-cultural groups, migrants and local residents have actively pioneered a series of community gardens in every Australian state capital city. Community gardens may nurture and promote both domestic and communal production as 'a solution to the needs of people in increasingly dense cities' (Stocker and Barnett 1998:180). This movement shows signs of significant growth on the Eastern seaboard at least, with allotment-style gardens becoming increasingly popular. Planners and designers are actively seeking to incorporate such spaces into new developments for the first time in recent memory.

The domestic gardening sector is also well serviced by a network of nurseries, magazines, television shows, radio programs and gardening festivals. But I am not convinced that either community gardens or Peter Cundall will fundamentally get urban Australia planting passionfruit vines again.

We've also seen the rise of niche retailing, whether that be in forms such as Coles Express, organic supermarkets, farmer's markets and the like. Pritchard (2000:216) suggests these may be an indicator of 'profound shifts to household food supply arrangements, effecting a blurring of traditional retail categories'. I'm less convinced, believing the likelihood is that for car-dominated, time-poor suburban Australia the weekly shop at a major supermarket chain is likely to remain a mainstay. Many of these niche retailing offers are located in the inner-city, targeting higher-income, gentrified populations for their customers. Still, Brisbane City Council took a decision some years back to heritage list all the older small corner shops across the inner and middle city, which preserved their potential for reopening as convenience shopping should the planned densification of the city actually take place.

Finally, there is I think renewed interest in locally sourced food. Recent media attention to the concept of 'food miles' – calculating the distance that a product travels to get to one's plate – indicates community concern for the sustainability of importing (and chemically treating) mangoes from Mexico or kiwifruit from France to provide southern-hemisphere consumers with out-of-season fruit. But I think too this argument is more about the greenhouse gas emissions of bringing British beer to Australia, when we brew similar products at the nation's biggest brewery here on the Gold Coast. Questions of nutrition are not always first and foremost.

Ways forward
I hope that historical view has helped 'unpack' the dimensions of the problem, and to highlight some of the ways in which planners are implicated in changing our food environments. Let me now summarise my thoughts and provide what I believe are key learnings to take forward for the Supportive Environments movement here in Australia.

Firstly, planning matters. It works at multiple scales in various ways that help to promote or control outcomes for how our cities work, how our regional landscapes function, how our food systems operate, and planning strongly influences how we live.

At the regional scale, planning could be used help to reinstate shorter supply chains to revitalize rural economies, provide seasonal produce and provide for food diversity (D. Goodman 2004; Marsden et al. 2000; Morgan et al. 2006). The use of regional and local planning instruments to preserve opportunities for agricultural production proximate to cities has not been strong in Australia, in comparison to Europe where the division between urban

and rural is often more markedly pronounced. Given the rise of metropolitan planning instruments (statutory plans) in Australia, there may be more scope for the inclusion and coordination of policies to promote this aspect of nutrition.

At the city scale, planning could be used to fundamentally change citizens access to healthy food. The continued problems of outer-suburban residents without access to a motor vehicle is but one dimension of this problem. There is also the proliferation of unhealthy fast food outlets. Planning can prevent their location next to schools. It can limit their offer, preventing drive thru service on interstate freeways for instance (we mostly do this in Queensland) Significant thought is presently being given by planners in two different projects I'm aware of, exploring ways not to prevent, but to limit the total numbers of fast food outlets in a township, which may offer a significant way forward acceptable to both the food industry and local authorities. In the same way we control adult shops, liquor outlets and betting agencies, I think we can be more proactive in controlling outlets that primarily sell food of low nutritional value.

And at the local scale, planning can be used to reinsert gardening into daily life. Whether via community gardens or by retaining opportunities for domestic gardens, planning can either help or hinder urban agriculture. For more on this I recommend you attend my colleague Prof Tony Hall's presentation on Australia's disappearing backyards this afternoon. It is also at this scale that planning determines whether space is made available for food preparation and breastfeeding in both private and public spheres. Housing design determines whether the storage space, kitchen facilities and equipment needed to prepare food are adequate. Commercial design determines whether office workers and others have space for the preparation and consumption of meals. And the design of commercial and public facilities determines whether there is appropriate space for women to breastfeed their babies (Webb and King 2007:12). Planning assists in ensuring reasonable outcomes on all these fronts.

Planning can also support those other sparks of hope – discretionary support for healthy 'niche' retail offers like food cooperatives and farmer's markets, for the return of poultry and even some livestock to our cities,

Policy to promote nutrition can be readily enacted at a state (or for you internationals, at a central) level. For instance, in Queensland, there may be a need to coordinate the activities of the State government for nutrition across the State, via a number of measures, such as via a State Planning Policy (SPP) to cover most land use planning issues for nutrition under Queensland's Integrated Planning and Development Assessment Framework (IDAS) (see Pretorius 2008:iv). But can I suggest that first and foremost there is a need to actively promote nutrition as a planning issue to local governments. A signal and a helping hand are needed to get them thinking and acting on the issue. I am personally concerned there appears some reticence within key state agencies to actively engage and put meaningful resources into such activities, even when the necessary groundwork has been done.

Conclusion

In conclusion let me try to summarise everything I've said into just a couple of statements.

1) There is a scarcity of empirical evidence to support direct associations between poor nutrition and disease with the built environment, especially in the Australian context.

2) In the recent past nutrition was almost invisible within the supportive environments movement. This needs to change. Nutritionists need to get active in this arena. Grasp these opportunities. Start interventions. Do evaluative research. Build your evidence base. Change the world.

3) The attention being given to specific interventions, such as community gardens, at the expense or exclusion of others, suggests a holistic agenda is yet to emerge. I hope that the list of interventions and ideas I have provided across food production, distribution, retailing and promotion may help those seeking to develop such an agenda.

There is much more that could be said, but my time is so short. Thank you all.

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