Chapter 20
Urban Agriculture in Cuba: Alternative Legal Structures, Crisis and Change

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Abstract The dominant mode of feeding Australian cities is the industrial food system, including industrial agriculture. This food system has produced crises in public health in the form of rising incidence of non-communicable disease linked to diet; and crises in environmental health flowing from industrial agriculture and the food processing and distribution network. This chapter discusses the urban agriculture program implemented in Cuba in the mid-1990s ‘Special Period’ in response to a food security crisis, as an example of legal change in response to food system failure. The Cuban experience is analysed by drawing on Blomley’s work on legal geography methodological tools of performativity, and pragmatism (specifically Dewey’s writings on ‘habit’). It is concluded that changes to the law and policy underpinning Australia’s dysfunctional urban food system might be catalysed by framing and communicating the health and ecological problems in the language of crisis, and by responding to this food system crisis by experimenting with alternatives such as urban agriculture.

Keywords Urban agriculture • Legal structures • Industrial food systems • Environmental health • Policy

20.1 Introduction

This chapter is about a research project situated within a broader research agenda investigating law and alternative urban food systems, and specifically the alternative of supplementing Australia’s urban food system with urban agriculture in the form of a locally-adapted agrarian (or ‘agroecological’) food production network (Orr 2001). The complicated relationship of cities and urban society to food supply is not a new governance problem, being inherent in the formation of even the first cities (Standage 2010). The particular aspect of this old problem which is of interest

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here is the interdisciplinary question, as to what laws and policies could catalyse and sustain urban agriculture in Australian cities. It should be noted at the outset that this is not a Utopian aspiration to urban self-sufficiency, but a proposed supplement and (partial) alternative to existing food provisioning practice.

The impetus for a research agenda exploring alternative urban food systems, is the dysfunctional and precarious nature of the system we have. The dominant mode of feeding Australian cities is the industrial food system, including industrial agriculture. The material ill-effects of this food system impact on human bodies and on broader ecological systems. Compounding this situation is the intensity of Australia’s urbanisation as one of the most urbanised nations in the world (Australian Bureau of Statistics 2013); and the consequent invisibility of many food system processes which occur outside the cities (Robin 2007; Steel 2013). Problems specific to urban places are magnified in Australia.

In common with other wealthy countries (Raubenheimer et al. 2015), Australia has experienced a dramatic increase in the public health disease burden of non-communicable, ‘lifestyle’ diseases associated with the food system (World Health Organisation 2013). Obesity, for example, has been described as a (non-traditional) pandemic (Krebs 2013). The main contributors to the increase in non-communicable disease are diet and activity levels (Egger and Swinburn 2010); this research focuses on diet. Intake of fresh fruit and vegetables strongly correlates to health status (Australian Bureau of Statistics 2012). This dietary intake of fresh produce is the central determinant of health with which the public health aspect of this research project is concerned. Fresh produce intake is considered within a theoretical framework of ‘ecological public health’, a relatively recent iteration of public health theory which places health in the context of the ‘material, biological, social and cultural dimensions of existence’ (Rayner and Lang 2012).

Environmental damage flowing from industrial food and industrial agriculture is well-documented (Burdon 2010; Woodhouse 2010; Weis 2010; Muir 2014). Specific consequences include desertification and salinity in agricultural land (Muir 2010), global warming ‘associated with land use changes, mostly from the food system’ (Stern 2007) deforestation, water consumption and contamination, land degradation, and loss of biodiversity (Singer 2006). In the Australian landscape these consequences are exaggerated by place-specific physical geography such as fragile topsoil and droughts, to which European-style agricultural production is unsuited, or ‘maladapted’ (Graham 2011). Environmental fallout continues beyond sites of agricultural production, caused by food transport, storage, processing, packaging and retailing and by the management of the wastes of these processes (Spencer 2014).

### 20.2 Governance at Different Scales

Under the present legislative arrangements, primary responsibility for law and policy relating to urban agriculture rests with local government. On the one hand this is appropriate, as local government is best placed to implement regionally appropriate and adapted practice suited to the physical and cultural geography of particular...
regions. On the other hand, local councils in New South Wales are constrained by very limited resources, and a plethora of other legislative priorities and responsibilities: what Valverde refers to as ‘the political effects of scale’, expressed via jurisdiction, which impacts how we are governed (Valverde 2009).

The statutory responsibilities of local government in New South Wales (NSW) include onerous and extensive planning and reporting under the Integrated Planning and Reporting Framework (IPR) mandated by Chapter 13 of the Local Government Act 1993 (NSW); councils further have regulatory and statutory planning responsibilities under the Environmental Planning and Assessment Act 1979 (NSW). These statutory responsibilities encompass both public health and environmental health. Urban agriculture, (including peri-urban agriculture) is here proposed as one means by which local government can address itself to statutory obligations regarding public health and environmental health. Extrapolating from the emerging theory of ‘cobenefits’ (Capon and Russell 2010) suggests that local councils can better reconcile priorities within resource constraints, by exercising functions in ways that acknowledge the interdependency of human health and ecological health.

As will be evident from the case study of Cuba below, however, it may be argued that urban agriculture practice is better served by not confining governance responsibility for urban food systems and urban agricultural production to the scale of the local. By way of example, the template Local Environmental Plan (LEP) for local councils in NSW is imposed by State government, and does not incorporate considerations of urban agriculture. Government at the State scale is dominant over government at the local scale; and therefore local councils are somewhat bound if urban agriculture initiatives would clash with the State LEP template. Although councils can add objectives to particular zones under the LEP, these objectives cannot conflict with those in the template. A comprehensive plan for urban agriculture across all three tiers of government is arguably therefore a better arrangement.

20.3 Comparative Legal Geography

Devising an appropriate methodology for interdisciplinary legal research requires more than the traditional legal research doctrinal methodology. As this research project is a comparative study, comparative law methodology is a relevant inclusion (Zweigert and Kotz 1998). It is, however, a necessary but not sufficient condition in this instance. ‘Legal transplants’, or borrowing from the experience of foreign jurisdictions, are a long-established method of law reform (Watson 1991, 1993). Legal transplants, (and comparative law methodology more generally) have been criticised as not paying sufficient heed to the place-specific context of the transplantor and transplantee jurisdictions (Kedar 2014; Legrand 1997; Kahn-Freund 1974).

To address this shortfall in comparative law methodology, a novel hybrid methodology has been used for this research: comparative legal geography. Legal geography, the study of the mutually constitutive relationships between law, land and people, takes a place-specific approach to the analysis of law and legal policy (Valverde 2011; Hinchcliffe and Whatmore 2006). Incorporating legal geography...
into a hybrid comparative legal geography methodology (Kedar 2014) facilitates analysis of the interactions between law, land and people specific to the practice of urban agriculture in the jurisdictions being compared.

The comparative study in this chapter utilises two specific tools within legal geography methodology, drawing on the work of Blomley on performativity (2013) and pragmatism (2014). Performativity theory is a tool in this instance to analyse why ‘certain conceptions of property are dominant’ and endure despite being ‘flawed’, because of their ‘citational’ and ‘reiterative’ qualities; and how ‘counter-performance[s] of property’ might be made ‘less marginal’ by responding to a situation of crisis: ‘where truth fails, there are possibilities for political learning and experimentation’ (Blomley 2013).

Property is performed by the industrial food system as a hegemonic mode of land use and market control, of food production and supply to urban populations. This successful claim on the urban food system is flawed or not truthful in the sense of the dysfunctions discussed above. This success is in part attributable to a performance of property which uses language to enact reality (for example the narrative of supermarkets as self-described ‘fresh food people’ and of food labels with fictitious depictions of farm animals grazing in idealised paddocks). Success is also here a function of citational and reiterative performances of property – urban food consumption behaviour is influenced by the ‘citational ability to reference innumerable other such manifestations’ (Blomley 2013) such that past food practice becomes the prevailing norm and predicts future practice. This is manifested for example in the supermarket duopoly in Australia, which rests on an illusion of ‘resolution, simplicity, order, certainty and security’ (Blomley 2013). Blomley describes this entrenchment of dominant performances of property as a form of frozen politics, but notes that such entrenched practices are only ‘human projects, rather than a static distillation of timeless, pre-political realities’ (2013). The food system we have is not as inevitable and intractable as it may appear. What is needed to make alternatives less marginal, or to create space for viable food system alternatives such as urban agriculture? Crisis or failure in the dominant model is an instance of ‘where truth fails’ and accordingly makes space for ‘possibilities for political learning and experimentation’ (Blomley 2013). The Cuban experience involved radical and relatively swift changes to the food system of an entire country, precipitated by an acute food security crisis. This chapter considers what might be learned from that experience and applied to the Australian context.

Blomley’s work on the usefulness of insights from pragmatism (2014) is the other specific tool of legal geography methodology employed in this research. Expanding on Dewey’s writings on pragmatism (1922–1930), Blomley considers the power of habit, drawing from ‘pragmatism’s primary emphasis on experience’ with habit predisposing us to certain forms of action; and ‘certain habits become[ing] more collectively engrained or congealed in what Dewey terms custom’ (2014). The power of habit might be seen as linked to the normative effect of citational and reiterative performances of property. Habits, despite having the force of stability, can change, being ‘adaptable and diverse [to the] experimental and contingent’; customs ‘persist because individuals form their habits under conditions set by prior...
custom’ (Blomley 2014). Habit and custom are potentially a lever to implement change in the food system, utilising ‘the value of forms of experimental inquiry or intelligence, essential for the learning through experience that, ideally, opens up future possibilities for learning’ (Blomley 2014).

In summary, then, the methodological tools of legal geography, performativity and pragmatism, are useful in explaining how Cuba’s food system underwent a swift and radical change in the mid-1990s; and further this might point to a ‘new place to begin’ (Blomley 2014) in experimenting with alternatives to Australia’s urban food system. Such an approach does not fall into the comparative law trap of cut-and-pasting foreign legal structures into a new context, but rather points to that which is true in a particular context (Cuba) and invites experimentation with place-specific alternatives: ‘there are no predetermined outcomes that can be derived from law’s geographies … such geographies should be thought of as experimental and contingent … [citing Allen] “What works best in any given situation cannot be known in advance, only in practice”’ (Blomley 2014).

### 20.4 Urban Agriculture in Cuba and Food Crisis

Urban agriculture in Cuba is practised along agrarian/agroecological rather than industrial/mechanised lines, with minimal artificial pesticides, fertilisers, or petrol-dependent technology (Diaz and Harris 2005; Manzano 2007), and with produce retailed directly to local food consumers (Premat 2012). The Cuban program was implemented in response to an acute food security crisis during the Special Period following the withdrawal of Soviet oil supplies in the early 1990s (Clouse 2014; Wright 2009). A significant proportion of Cuban food production was shifted to urban land to bring sites of production closer to sites of consumption, as fossil fuel transport was limited by oil shortages (Wright 2009). Further, the shift to agroecological farming methods was driven by shortages of oil-based pesticides and fertilisers, and shortages of oil to drive farm machinery (Deere et al. 1994). Urban agriculture was not a deliberate governmental strategy to improve public and environmental health. There were, however, side-effects of the Cuban agricultural reforms which are anomalous in the developed world and which therefore merit the attention of Australian law and policy makers. Cuba is the only nation in the world to meet the World Wildlife Foundation’s definition of sustainable development, having both an acceptable ecological footprint per capita and an acceptable Human Development Index rating (World Wildlife Foundation 2006). Cuba’s low ecological footprint per person, low infant mortality and high life expectancy in the wake of the Special Period are an anomalous combination in the developed world. Immediately following the changes to Cuba’s food system in the early 1990s, there was a ‘rapid decline in death rates from diabetes and heart disease’ (Franco et al. 2013). Cuba is not here held up as a paragon or perfect model, and the Cuban system has past and ongoing problems (Hagelberg 2010; Alvarez 2001). The significance of the Cuban data for Australian law and policy on urban food systems is that,
whilst imperfect, the Cuban program met with notable (if unintended) successes in public and environmental health.

Prior to the Special Period of crisis and disruption in the Cuban food system, Cuban dietary habits were poor with high consumption of sugar, animal fats, and rice, and low consumption of a very limited range of fruits and vegetables (Wright 2009). Environmental and public health impacts from the industrial agricultural system included chemical pesticide and fertiliser residue and increased mortality rates (Wright 2009). The food system was flawed, and the Cuban government acknowledged the flaws. It took the Special Period oil crisis, however, to move from knowledge to change. If pragmatism advocates for learning via experimentation and experience of what works, it is apparent from what occurred in Cuba that this knowledge alone is unlikely to be enough to instigate change. Blomley’s discussion of performativity theory (2013) points to failure and crisis in the (flawed) dominant model as an entry point for alternatives.

The post-Special Period food system reforms in Cuba involved extensive revisions of property rights. (This should be read, of course, from the perspective that Cuba is a socialist state with a fundamentally different political system than that of Australia.) At a rural level, the most significant reform was the breakup of large state farms into unidades basicas de produccion cooperativas (UBPCs), small farming cooperatives located on the peri-urban fringe and run autonomously by groups of farmers (Gropas 2006). Under this scheme worker collectives were granted leases, rent-free, over state farm lands in permanent usufruct together with ownership of the goods produced (Deere et al. 1994).

Within the cities, two key features of the Cuban program are the organoponicos and the mercados agropecuarios. The organoponicos are raised-bed intensive-production gardens located on public land (Viljoen and Howe 2005). The produce from the organoponicos and other sources is retailed directly to consumers via the mercados agropecuarios, local farmers’ markets in the city (Premat 2009).

The Cuban program has separately promoted urban and peri-urban agriculture. The Agricultura Urbana program initiated in the 1990s concentrated on ‘patios (domestic gardens), plots (empty lots planted to vegetables) and… organoponicos – low-walled beds filled with soil and organic matter, with or without drip irrigation’ (Hagelberg 2010). Plots, or parcelas, were located on a variety of available land types, including ‘parks, open baseball fields, and, more commonly, demolition sites’ (Premat 2009) with this land being granted in rent-free usufruct (Premat 2012). Cubans were encouraged to use every possible urban space for food production. Private gardens and rooftops (patios) were transformed into spaces for chicken coops, pig sties, goat sheds, and vegetable gardens (Premat 2009).

A separate and distinct program, Agricultura Suburbana, was implemented in peri-urban regions, on fincas (small farms) in ‘an eight-kilometre-deep ring between two and ten kilometres from urban centers’ (Hagelberg 2010). These programs were implemented in great haste in response to the acute food security crisis. Urban planners responsible for the capital Havana were consequently frustrated by the lack of overall design and planning in implementing the Finca Program, as in the rush to rapidly increase food production other city planning work such as transport and

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water supply were disregarded (Premat 2012). Legal geography’s understandings of the mutually constitutive nature of law and place are a means of interpreting this upending of law in response to the material demand for food security. This exposes the myth of law’s instrumentality – zoning as a top-down legal instrument interacts in reality with place, exposing: ‘… the myth that zoning is an instrument of rational, disinterested planning … [there are] myriad instances of … particularistic and reactive land use control.’ (Valverde 2011).

20.5 Lessons from the Cuban Experience

As a social experiment, the Cuban food security crisis and the law and policy response are the sort of thing that would never gain approval from a university ethics committee. Viewed from the perspective of pragmatism, however, the Cuban experience does yield knowledge about place-specific alternatives to the industrial food system. The state-sanctioned national urban agriculture program in Cuba provides an evidence base from which planning lawyers and policy makers of Australian cities could extrapolate possibilities for implementing an alternative, urban-agrarian food system. (In the Australian context, and given our demographic distribution and city forms, ‘suburban agrarianism’ might be more accurate.) The evidence from Cuba points to the potential of urban agrarianism, or ‘urban agroecology’ as a mode of supplementary food production for cities which optimally promotes public health and environmental health.

Usufruct legal arrangements are a key feature of Cuba’s agricultural reforms implemented in response to the 1990s crisis. Usufruct leases, (rent-free long term tenancy over land with ownership of crops produced) did overcome one barrier to urban agriculture: access to land. The granting of land in permanent, rent-free usufruct for agriculture is acknowledged by the Cuban government as one of the more successful initiatives of the post-Special Period agricultural reforms. The data from Cuba on agricultural productivity in this period is not as statistically reliable as might be hoped (Campbell 2008; Mesa-Lago 1998), however there is consensus that private farmers outperformed state owned farms and large cooperatives and collectives (Deininger 1995), and that production of vegetables exceeded FAO guidelines for minimum consumption (Koont 2008). Small scale, privately run urban operations have been notably productive (Campbell 2008) especially in vegetables. Excessive governmental interference with cooperatives, such as monopolies on procurement and distribution, have been blamed for relatively lower productivity (Deere and Meurs 1992) when compared with private farming operations.

The relative success in productivity terms of smaller private farming operations led to further law reform under Raul Castro in 2008. Decree-Law No 259 of 2008 legislated for the ‘mass grant in usufruct of idle state land, mainly to small farmers and landless persons’ (Hagelberg 2010). This program was so popular that demand far exceeded supply (Carrobello and Terrero 2009).
Access to land is a prerequisite of agriculture. One could split hairs and argue that proponents of vertical farming and rooftop gardens have circumvented this requirement; these modes of urban agriculture are, however, the exception rather than the rule. Land in the sense of space in which to grow food is still a requirement, even where the earth or hydroponic system is suspended in containers over the land on rooftops or in vertical gardens. Urban land is fragmented, small scale and not suited to industrial/mechanised farming (vacant city blocks do not comfortably accommodate combine harvesters). Urban land is also more valuable a commodity than rural land, and its possession and use are more hotly contested.

In proposing a widespread program of urban agriculture in Australian cities, a critical consideration is finding available land which can be put to use growing food. Cuba’s urban agriculture is largely located on abandoned, disused land in cities. This is a possibility in Australian cities, but to a lesser extent than is possible in Cuban cities. Following the Special Period, much of Cuba’s urban space fell into disuse and abandonment, leaving a comparatively large quantity of land available to be put to use in growing food. The economic recovery of, for example, the capital Havana has led to urban agriculture sites being subject to challenge for competing uses by developers (Premat 2012).

Finding available land, then, is the complicated first step in developing a city-wide program of urban food production. Public land within control of local councils is a potential resource for urban agriculture. Usufruct legal arrangements over public land are one possible law and policy structure to make land available for urban agriculture. In the Australian context, suburban and peri-urban land represents the most significant source of available land, particularly given Australia’s urban sprawl and the creep of suburban development into the peri-urban fringe (Webb and King 2007).

It is not economically viable for urban farmers to buy or rent valuable urban land and use it for food production. One means of making urban food production economically viable is to provide rent-free usufruct tenure over public land, on condition that it be used for growing food, and that this food be made available for local consumers. In the Cuban model public land is leased rent-free to individual farmers or farming collectives, and the produce is retailed directly to the public via local farmers’ markets (mercados agropecuarios). The benefits of usufruct legal arrangements for urban agriculture extend beyond affordability considerations. Long-term, stable usufruct over land (the Cuban model gave renewable rent-free leases of 10–25 years) gives stable tenure over land. The flow-on effects of long-term stable tenure are connected to a sense of ownership. Short-term and/or unreliable land tenure can lead to exploitation of land to obtain a yield and profits without regard to the future health and productivity of the land. Long-term stable tenure fosters a land care ethic.

Long-term land tenure allows for a diversity of produce, including longer-term investment crops such as fruit trees. Long-term tenure also provides urban farmers with relatively steady and reliable income, and a long-term right livelihood. The Cuban experience also indicates sustainable urban economic activity as a by-product of implementing a widespread program of urban agriculture – 350,000 ‘well-paid urban jobs’ having been created by 2006 (Koont 2008).
The capacity already exists in New South Wales legislation for local councils to grant parcels of public land in rent-free usufruct to urban farmers, on the condition that the land be used for food production. The *Local Government Act 1993* (NSW) authorises local councils to deal with public land for various purposes. Public land categorised as ‘community land’ under section 26, and subcategorised as ‘general community use’ under section 36(4)(3) can be leased, licenced or sublet (section 36(3A)(b)(ii)), and it is within the discretion afforded to councils under the legislation to do so on a usufruct basis and for the purposes of food production (Spencer 2012).

Aside from the specific issue of overcoming the obstacle of access to land for food production, other obstacles should be taken into consideration by any local council considering a program of urban agriculture. The Cuban experience indicates that barriers to the success of urban, suburban and peri-urban agriculture include the inexperience of novice farmers, and lack of finance, tools and equipment. Urban farmers also need access to consumers to sell farm produce. A critique of the Cuban agricultural reforms post-Special Period concerns the level of skill and knowledge amongst novice farmers who took up the government offer of usufruct land (Duenas et al. 2009). Much of the available land was infested with weeds, and the new farmers often lacked hand tools, fencing wire, machinery, fuel, and access to finance, in addition to struggling with uncertainty about what activity was permitted, and bureaucratic oversight and compliance burdens (Hagelberg 2010). The micro-management interventions of the Cuban state have been coupled with often unreliable state support, such as procurement trucks that do not arrive to collect perishable goods (Deere et al. 1994).

A detailed consideration of these issues is beyond the scope of this chapter and is part of the broader research agenda of which it forms part. In brief, however, possible solutions might include tool lending libraries, linking local seed-savers groups to new farmers to provide locally-adapted plant strains, Federal Assistance Grants for start-up lending, and mentoring and apprenticeship programs to impart food growing skills and knowledge. Councils also have the capacity to provide a forum for direct sales of farm produce to local consumers, by establishing and maintaining local farmers’ and produce markets.

### 20.6 Conclusions

The way Australian cities are currently provisioned with food is via a dysfunctional food system which has damaging consequences for public health and environmental health. However, the power of habit and custom, or ‘business as usual’, is strong. Knowledge that the food system is flawed is not enough to propel change. Perhaps our understanding of what constitutes a crisis is a leverage point to enable alternatives to emerge and gain a foothold. Public health literature variously describes the rising instance of non-communicable diseases linked to diet as pandemics, or epidemics. The ecological damage from industrial agriculture and the wider industrial
food system is also well-documented. Our food system is indeed in a state of crisis, albeit not a crisis as recognisable as the acute food security crisis in Cuba during the Special Period. This crisis must be properly communicated as a counter to the dominant narrative of the food industry, in order to provoke changes in habit and custom and allow space for experimentation with alternatives. An alternative/supplementary urban food supply based on urban, suburban and peri-urban agriculture is part of the solution to these problems. The Cuban model of urban agriculture has proven to be relatively successful and productive. The legal and policy structures underpinning the Cuban program are worth considering, in adapted format, for implementation in Australia.

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