



BACKGROUND PAPER 5: Food

What was said during Time to Talk Canberra 2030

The Time to Talk Canberra 2030 community engagement gave a high priority to the sustainable delivery of essential life support functions, such as food, water and power. The future scenario for Canberra included an aspiration for more community gardens, envisaged as one part of a network of outdoor places where residents can meet, socialise and exercise.

Definition of the issue

Food is defined as 'Any solid or liquid material consumed by a living organism to supply energy, and build and replace tissue.'¹ However, food has a wide range of physical, social, cultural and political meanings. The production, acquisition and distribution of food has played a central role throughout human history.² Current local, national and international concerns include food ethics, food security and the environmental consequences of how food is produced – for example organic growing practices, genetic modification, providing food for a growing population, and the husbandry and preparation of animals for meat.

Role of strategic land use planning

Strategic land use planning has a role in protecting high quality agricultural lands from competing land uses. It recognises that land is a non renewable, finite resource. Land use planning requires a regional perspective, with planners looking at the changes occurring in the peri-urban area surrounding the city, where typically much food production occurs.

Planning can also provide opportunities for localised food production ventures, such as city farms, farmers markets, community gardens or allotments, school kitchen gardens or other commercial intensive horticultural businesses.

What issues does the ACT Planning Strategy need to consider?

Community awareness of food issues has risen substantially since the Canberra Spatial Plan was completed in 2004. This awareness has engendered continued support for farmers markets, community gardening and food programs at schools, such as kitchen gardens.

Strategic land use planning in the ACT and surrounding region needs to recognise, as a priority, the value of high agricultural quality land and preserve it from other uses such as residential development.

Environmental considerations

Canberra's most recent ecological footprint showed that food comprises 6% of the total contribution to the eco-footprint of its citizens.³ This relates to the amount of water, land and energy required to produce and transport the food and the greenhouse gas emissions released.

Carbon emissions refers to the amount of fossil fuel energy that it takes to produce and transport food. Modern food production is highly mechanised and consumes fertilisers and other products derived from or with a high reliance on oil.

Food is also transported over considerable distances. 'Food miles' is the number of kilometres a food travels by the time it gets to a consumer's plate. Before criticising food miles, consumers need to look at the overall carbon footprint of alternatives. For example, a joint New Zealand/English study comparing the energy intensity of four common foods (lamb, dairy, apples and onions) found it was more carbon efficient to import into the United Kingdom three of the four foods studied.

'Embodied water' refers to the water used in creating all products including food. Water is used to grow, wash and process food. A study focussed on Melbourne showed 'for every litre of water consumed directly in the average Melbourne household, nine more litres are consumed indirectly through the water used to produce food.'⁴ While acknowledging the intricacies of water trading and the differences between urban and irrigation water, this study suggested that making different food choices could save far more water than any direct savings in the home such as shorter showers. For example, some foods are produced through intensive farming that uses significant amounts of water to either irrigate fields for animals to eat, or crops to be harvested.

Studies in the United States of America found 'per capita food waste has progressively increased by approximately 50% since 1974 reaching more than 1400 kcal per person per day or 150 trillion kcal per year. Food waste now accounts for more than one quarter of the total freshwater consumption and approximately 300 million barrels of oil per year'.⁵





Land degradation and contaminated runoff are major impacts of some food production. Data presented in [the National] *State of the Environment Report 2001 (SOE)* shows that annual soil loss is commonly greater than one tonne per hectare across most of Australia.⁵ CSIRO research to track the pathways of insecticides and fungicides into river systems suggests the only viable means of control is to use less. The increasing consumer interest in organically produced food is reflective of these issues being of wide general concern.⁷

Social considerations

A wide range of concerns centre on how food production systems impact on our society. These are multifaceted and interrelated and include, but are not limited to:

- the separation of consumers from producers and subsequent lack of understanding of the source of food and how it is produced
- the viability of local communities and retailers and
- the health effects of diets high in processed foods, such as obesity and type 2 diabetes.

Until the late 1960s, Canberra had a higher degree of local food production than at present. This was focussed on the fertile alluvial soils of the Molonglo River, such as at Pialligo. In its first decades, the Federal Government was concerned that the capital be self sufficient in food and specified that vegetable growing should be undertaken on some leases in Pialligo. Dairying was also a significant use, providing residents with fresh local milk.⁸

There is significant evidence from Australia and around the world that local food production in community gardens has social benefits. A small study from Melbourne showed that participants widened their capacity to access social support (having people to turn to in times of crisis) and grew their social connections (the development of social bonds and networks).⁹ Gardens can also increase exercise, improve nutrition and foster learning.¹⁰

Economic considerations

Many of the issues around food have economic dimensions. ACT agricultural production was valued at \$17m in 2006 with 45,000ha of identified agricultural land.¹¹ Local food production can increase local job opportunities and help diversify economies, for example the agribusiness and tourism of Canberra District wineries.

Some people have concerns about the increasing concentration of food production into large corporations. For example, it has been estimated that forty cents of every dollar spent in Australia currently ends up in the accounts of the two major supermarket chains and their subsidiaries.¹²

A different perspective is that environmental concerns are driving change, with organically produced food commanding a bigger market share due to concerns over the health impacts of pesticides.

Local farmers markets, such as the Capital Region Farmers Market, provide opportunities for direct sale of locally produced food.

Opportunities for local food production

Local food production is a complex matter. Issues concerning the local food economy are linked to:

- consideration of the Territory's ecological footprint
- the real environmental and economic costs of where Canberra's food is sourced
- the extent of a regional definition of local food production catchment
- food security
- other means available for local food systems (such as city farms, farmers markets, community supported agricultural enterprises, direct farm sales).

Consideration of Canberra's local food production needs to have a regional perspective.

The evaluation of the Spatial Plan's goals showed areas where incorporation of food production could make a contribution to wider social goals. Food production requires exercise, social interaction and being outside, so it fits well with the goal of having a healthy community. There may also be some benefits in reducing food miles for at least some food items, having an indirect effect on transport emissions. Local food production is an active research area at both the Fenner School at ANU and the University of Canberra; this provides future opportunities for collaboration.

Opportunities for food production

Urban agriculture is increasingly being debated as a partial solution to food security issues. The term urban agriculture covers many different ways of producing food in cities, including:

- back yard production
- regional or local cooperatives
- food species as public planting
- community gardens
- verge gardens
- roof-top gardens
- city farms.

Community gardens are frequently advocated as one solution to the perceived triple bottom line (i.e. achievement of beneficial social, environmental and economic goals simultaneously) issues



with food production.¹³ There are almost 20 community gardens in the ACT, with several more proposed, and many kitchen gardens are associated with schools. The gardens have a relatively good profile due to the activity of the Canberra Organic Growers Society, which operates 13 gardens in Canberra/Queanbeyan. The ACT Government is currently implementing a range of initiatives to support community gardens in the ACT.

Other factors in making urban agriculture a viable proposition include the biophysical parameters such as the location of good quality soil and availability of seasonal water, and social parameters such as horticultural knowledge. Relatively few people know how to grow plants the way previous generations might have, when home grown food was the basis of the family diet.

Things to think about

Planning in the ACT has historically separated land uses. Primary production was separated as the land use function that guaranteed the landscape setting of the city. Today there seems to be widespread community support for greater food production at the local level, but this does not solve the question of location and implementation. Should it be distributed through the city and adjacent to homes, or should it remain separated in a specific land use?

The ACT and region has diverse agricultural production of food and fibre such as wine, wool and wheat, timber from pine trees, beef, lamb, and fish. Increasingly, agricultural land is taken for human settlement, displacing production. To ensure food security, a regional perspective in conserving the best agricultural lands for food production needs to be taken.

An alternative approach is to seek multiple ways of producing food locally, using the precious fertile soil, a non renewable resource, and in greenhouses on industrial land. Intensive horticulture has high capability to be distributed through the city at different scales and different forms.

Integrating food production into our gardens and public places could become a higher priority to be supported than it has been in recent years.

Given the complex range of factors to be considered regarding food in the ACT, there is great benefit for further research to identify the current situation and articulate possible future planning opportunities taking an integrated systems approach in all considerations.



Further reading

For nutrition information provided by the Federal government:

<http://www.health.gov.au/internet/main/publishing.nsf/Content/health-publth-strateg-food-resources.htm>

For Australian government research into food production

<http://www.csiro.au/science/Farming-Food.html>

For nutrition information provided by the ACT government:

<http://health.act.gov.au/health-services/community-health/community-health-services/nutrition/>

For information about Canberra's community gardens:

<http://www.cogs.asn.au/>

For information on Canberra's farmers market:

<http://www.capitalregionfarmersmarket.com.au/>

For general information about local food try:

<http://slowfoodaustralia.com.au/>

Endnotes

- 1 "food" *A Dictionary of Food and Nutrition*. Ed. David A. Bender. Oxford University Press 2009. *Oxford Reference Online*. Oxford University Press. Australian National University. 23 May 2011 <<http://www.oxfordreference.com.virtual.anu.edu.au/views/ENTRY.html?subview=Main&entry=t39.e2204>>
- 2 Alan Dangour "food" *The Oxford Companion to the Body*. Ed. Colin Blakemore and Sheila Jennett. Oxford University Press, 2001. *Oxford Reference Online*. Oxford University Press. Australian National University. 23 May 2011 <<http://www.oxfordreference.com.virtual.anu.edu.au/views/ENTRY.html?subview=Main&entry=t128.e386>>
- 3 Ryan, S. (2011), Buying Choices for a More Sustainable Canberra: Report for the ACT Commissioner for Sustainability and the Environment, ACT Government, Canberra http://www.environmentcommissioner.act.gov.au/_data/assets/pdf_file/0011/230312/BUYING_CHOICES.pdf
- 4 Ian Rutherford, Amelia Tsang and Siao Khee Tan, City people eat rivers: estimating the virtual water consumed by people in a large Australian city, Wilson, A.L., Dehaan, R.L., Watts, R.J., Page, K.J., Bowmer, K.H., & Curtis, A. (2007). *Proceedings of the 5th Australian Stream Management Conference. Australian rivers: making a difference*. Charles Sturt University, Thurgoona, New South Wales, p348 -353.
- 5 Hall KD, Guo J, Dore M, Chow CC (2009) The Progressive Increase of Food Waste in America and Its Environmental Impact. *PLoS ONE* 4(11): e7940. doi:10.1371/journal.pone.0007940 Hall KD, Guo J, Dore M, Chow CC (2009) The Progressive Increase of Food Waste in America and Its Environmental Impact. *PLoS ONE* 4(11): e7940. doi:10.1371/journal.pone.0007940
- 6 <http://www.environment.gov.au/soe/2006/publications/commentaries/land/pubs/land.pdf> p8-9
- 7 <http://www.csiro.au/files/mediaRelease/mr1999/TrackingPesticideForCleanerRivers.htm> Reganold JP, Andrews PK, Reeve JR, Carpenter-Boggs L, Schadt CW, et al. (2010) Fruit and Soil Quality of Organic and Conventional Strawberry Agroecosystems. *PLoS ONE* 5(9): e12346. doi:10.1371/journal.pone.0012346 Other examples include Lu C, Toepel K, Irish R, Fenske RA, Barr DB, Bravo R (2006) Organic diets significantly lower children's dietary exposure to organophosphorus pesticides. *Environ Health Persp* 114: 260–263; Curl CL, Fenske RA, Elgethun K (2003) Organophosphorus pesticide exposure of urban and suburban preschool children with organic and conventional diets. *Environ Health Persp* 111: 377–382. Baker BP, Benbrook CM, Groth E III, Benbrook KL (2002) Pesticide residues in conventional, integrated pest management (IPM)-grown and organic foods: insights from three US data sets. *Food Addit Contam* 19: 427–446.
- 8 Pialligo Heritage Study, 2010.
- 9 Jonathan 'Yotti' Kingsley & Mardie Townsend (2006): 'Dig In' to Social Capital: Community Gardens as Mechanisms for Growing Urban Social Connectedness, *Urban Policy and Research*, 24:4, 525-537
- 10 Harris, Elise. The role of community gardens in creating healthy communities: [Paper in special feature: Healthy Spaces and Places.] [online]. *Australian Planner*, v.46, no.2, June 2009: 24-27; Corkery, Linda. Community gardens as a platform for education for sustainability [online]. *Australian Journal of Environmental Education*, v.20, no.1, 2004: 69-75.
- 11 Australian Bureau of Statistics (2010) National Regional Profile: Australian Capital Territory <http://www.abs.gov.au/AUSSTATS/abs@nrrp.nsf/Latestproducts/8Industry12005-2009?opendocument&tabname=Summary&prodno=8&issue=2005-2009>
- 12 <http://slowfoodaustralia.com.au/2011/04/grocery-duopoly-takes-40-of-every-100-spent-in-australia/> accessed 18 May 2011. The research was commissioned by the Sunday Telegraph and was undertaken by the Commonwealth Bank.
- 13 Jane M. Dixon, Kelly J. Donati, Lucy L. Pike, and Libby Hattersley, Functional foods and urban agriculture: two responses to climate change-related food insecurity, Vol. 20(1–2) 2009 NSW Public Health Bulletin. Compares the two responses of functional foods and urban agriculture as ways of responding to climate change induced modifications to our current food supply systems. Concludes that for cities in the developed world, urban agriculture is a better response because it addresses social, eco and environmental aspects of food production simultaneously.