

Rural and remote food security: multiple determinants

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In this paper we provide an overview of the concept of food security and the problems that are presented by the current food system in relation to the uneven nutrition transition. We then move to explore the question about what lies behind a food secure nation in terms of the major drivers of food security, drawing attention to the implications for rural and remote Australia

Defining food security

The classic definition that was agreed to at the World Food Summit in 1996 is that Food security takes place when “all people at all times have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”

This rather straightforward definition contains numerous ambiguous phrases. For example,

- ‘sufficient’ depends on cultural norms, and varies according to life-stage, energy expenditure and state of health
- ‘safe’ probably refers to toxicological properties as determined by regulators, but again has cultural meanings for different sub-populations
- ‘nutritious’ probably refers to quantifiable nutrients and calories as determined by nutrition scientists, but is applied by so many groups to sell products that it too can mean anything that people want it to mean
- ‘dietary needs’ probably refers to needs as determined by the nutrition profession, and it is unclear how it is different to sufficient nutrition
- ‘preferences’: like the other terms is culturally and socio-economically determined.

Such ambiguity is both unsettling for consumers and allows food industries to justify consumer purchases of high fat, salt and sugar foods in terms of “preferences”. Under this definition, nations can point to their sovereign right to supply large amounts of red meat, because this is what ‘modern middle-class citizens’ prefer as a protein source. Despite the fact that large per capita head consumption of red meat is associated with population level cancers and coronary heart disease.⁽¹⁾

Another difficulty with this definition is whether it is right to define food security as here-and-now food sufficiency when arguably the greater concern is medium and long term food system sustainability.

The uneven nutrition transfer

In the last two centuries rich countries have gone through a process that has been described as the *nutrition transition*. This involves a transition through a health promoting phase as a result of increased dietary diversity and increased available energy to a health depleting phase linked to more affordable supplies of energy but with increased inequality of access to dietary diversity.⁽²⁾

The nutrition transition is a process that occurs as populations get wealthier and their diets change from traditional staples to processed foods which are fattier, saltier and sweeter and increased intakes of meat and dairy. This shift towards fast and convenient foods is also a shift away from fresh fruits and vegetables.⁽³⁾ The same processes are also under way in developing countries. Societies are increasingly cut adrift from social and biophysical ecosystems through 24/7 access to processed foods, challenging the human metabolic state.⁽⁴⁾

The most popular foods in modern nations are the most energy-intensive food commodities and the most health damaging: animal-based foods, fats and oils, and sweets, snacks and drinks.^(5,6,7) Epidemiological studies agree that the primary determinant of diet-related disease is the result of an energy-enriched food supply that can be easily accessed around the clock, and which is heavily marketed as convenient, cheap and safe.^(8,9)

What is important to understand is that the global and Australian food systems are gradually evolving from a health promoting to a health depleting state. Diets that we now know to be inappropriate for health become normalised leading to high levels of chronic and degenerative disease and reduced disability free time. Food is then a major contributor to the disease burden, (for example in Victoria 17% of the disease burden has been attributed to food⁽¹⁰⁾).

Nutrition inequities

The diets of whole populations are converging towards a similar but limited mix of food groups with dietary diversity, or divergence, confined to wealthier and better educated groups.⁽⁷⁾ Greater dietary variety and higher consumption of vegetables and fruits has been found to be associated with higher education and income levels in both the US and in Australia.⁽¹¹⁾ For example the 2007 Australian National survey of children's nutrition and physical activity, confirmed this rich poor divide, finding that children from families in lower income groups tended to eat more junk food and were more likely to be overweight.⁽¹²⁾

To achieve a healthy diet it is necessary to spend more money as energy dense foods are both cheaper and more readily available than nutrient rich foods.

Energy dense foods are more affordable than nutrient rich foods, thanks to huge efficiencies by food processors in converting oils, fats and sugars into snacks, soft drinks, etc.

Energy dense foods are more accessible than nutrient rich foods—fruits and vegetables—because they are often durable/less perishable and more reliable in terms of supply because they are less prone to weather events and other supply chain interruptions.⁽¹³⁾ The higher and more reliable profitability of energy dense foods means that vast networks of fast food and convenience store chains, supermarkets, petrol stations, and community stores are more likely to sell them.

These factors—affordability and accessibility; are highly relevant to rural and remote Australia. This was illustrated by a study looking at the costs of remoteness by the Bureau of Infrastructure Transport and Regional Economics⁽¹⁴⁾, which found that for smaller towns in regional Australia grocery choices are limited (Figure 1). Although this study looked at availability of “groceries”, it would be expected that the availability of nutrient rich foods would also be limited.

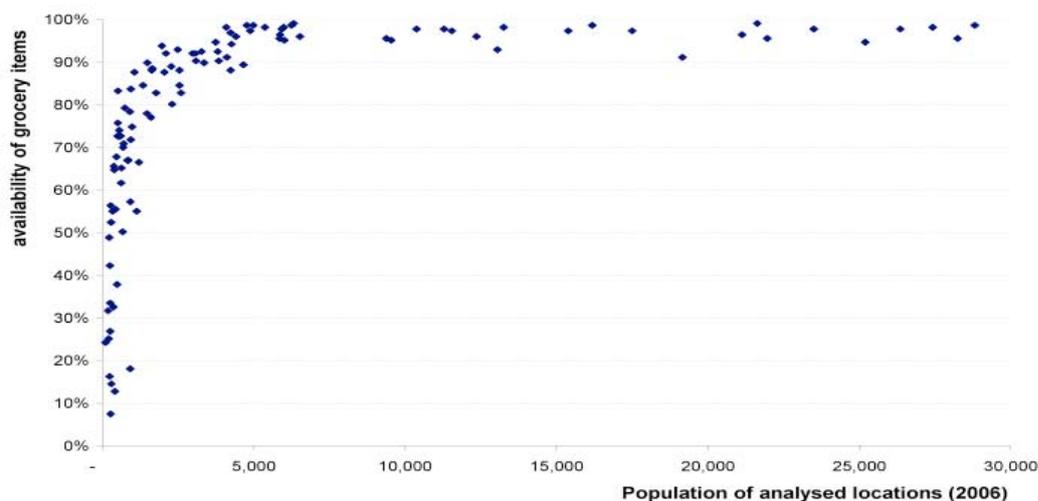


Figure 1 Poor grocery accessibility in small towns⁽¹⁴⁾

The Australian Institute of Health and Welfare (AIHW) also report that on average, people living in more inaccessible regions of Australia are disadvantaged with regard to fresh food.⁽¹⁵⁾ Currently it is also well documented that food security in many remote Indigenous communities is poor—the supply of healthy food is often sporadic and of limited choice, of low quality and expensive. The cost of fresh and nutritious food in stores in remote Indigenous communities is consistently found to be significantly higher than that experienced in urban and regional Australia (National Strategy for Food Security in Remote Indigenous Communities 2009). Not only are present food systems creating sick populations, food systems themselves are sick; jeopardising future food security and that situation is underpinned by drivers of both supply and demand.

Supply drivers for a sick food system

If we look at the supply issues first there is the diminishing state of the environments in which agriculture takes place. In recent decades agricultural land that was formerly productive has been converted to urban use or lost through desertification, salinity, soil erosion and other consequences of unsustainable land management. Further losses due to climate change are anticipated.⁽¹⁶⁾

Second global free trade and governance by corporate supply chains—promotes productivist agriculture which not only externalises the cost of environmental impacts but puts pressure on producers to sacrifice nutritional value, diversity and safety in food production for reasons such as cost-cutting and efficiency. By this we are referring to the increasingly narrow range of varieties of fruits and vegetables produced for their capacity to travel long distances, manufactured to look blemish free, the overuse of antibiotic in intensive animal farming, and the move to feedlots rather than grass fed animals.

Industrialisation of food production has resulted in very high firm concentration ratios in various segments of our global supply chains, which has lowered costs and marginalised small producers. As a result we now have a stressed domestic agricultural system which is at the mercy of international free trade and corporate supply chains. Small farmers are having to over work their properties to maintain competitiveness, leaving the remaining physical asset significantly depleted.

These economies of scale continue to accelerate concentration and favour imported supplies, with the result that we have almost lost local pork production, dairy farming is under threat in some parts of the country, and apple growers continue to walk away from their orchards.

The decline of small farming in Australia

There is no dispute that small farming in Australia is in decline—and we are facing the continuing demise of rural towns dependent on small scale farming. In 2008 there were 308,000 people are currently employed by agricultural industries in Australia at just 3% of the total employment. This is down 20% since the beginning of

the decade.^(17,18) Declining rural populations mean a loss of services and built infrastructure and the withdrawal of government from service provision.

There is a range of factors working against small scale farming which include an aging population, environmental degradation and lower returns and higher costs for farmers. Neil Barr's (Department of Primary Industries, Victoria) work has shown us that for the last 40 years farmers have had to make productivity improvements of 3% per annum. Yet we have rising costs of production and falling farm gate prices, which is not helped by the oversupply of food in western economies,

A key pressure for many Australian farmers has been drought, drying and climate change⁽¹³⁾, and now flooding events. These are processes over which people living in rural communities have little control⁽¹⁹⁾, the end result is stress.

Not surprisingly the AIHW has consistently documented that rural people are experiencing poorer mental health, higher rates of suicide, and higher rates of illness and disease risk factors than those in major cities. What the research on farmer health is also showing is that farmers experience inferior physical and mental health than their rural counterparts.⁽²⁰⁾ However, this figure is contested (Berry et al. 2011; Hogan et al. 2008; Cummins et al 2005). Such studies report that farmers and rural people either report better health and wellbeing than their city counterparts except for the fact that they lack confidence in the security of their economic futures. In Australia farmer suicide is manifestly a serious problem: it is at least 50% higher than urban male suicide. We can actually track an 8% increase in suicide for each 300mm of rain loss.⁽²¹⁾

The ability of small scale farming in Australia to succeed is hampered by farmers who are sick, and socially disconnected. Looking after the health and wellbeing of Australian producers has to become a priority: those with poor health and low incomes are more likely to leave the land, be less productive and be less innovative in the face of climate change and other challenges.⁽²²⁾

Impacts on land tenure

Another potential impact on supply is the issues of land being converted from agriculture for other uses, like bio-fuel production and the cut flower trade, or being degraded by mining activity. In recent years farmers in South East Queensland, Northern New South Wales and now the Hunter Valley have had to accept gas drilling on their properties because they do not own what is under the soil and many more gas drilling initiatives under plan for these areas.

The farmers affected by this mining activity are arguing that the potential for low input high output food production, is being sacrificed by mining operations which cause the destruction of aquifers, loss of water flows and loss of soil structure. These actions threaten not only the livelihoods of the farmers and the communities connected with the individual properties but all the food production capacity that is dependent on the ground water from the great artesian basin. There are also concern about unknown future health impacts of damage to the water table due to these mining activities.

This potential threat to supply is in addition to the ongoing conversion of land in the urban fringe of big cities like Sydney from horticultural activities to other non agricultural uses. It adds also to the supply issues that follow foreign government 'land grabs' in order to feed their own populations

Demand drivers, with a focus on rural and remote Australia

The critical question we have to address is whether Australia needs cheap food or affordable food? What options do we have for ensuring that foods with high nutritional value are available to all? Most Australians need income to access food: is this a matter for the food system (that is dominated by cash markets, rather than being a mixed market self sufficiency system) or for the social policy and labour market systems. There are other determinants of demand such as quality provenance and brand, but at the end of the day price has been identified as the most important factor in decisions about what food items to buy.⁽²³⁾

Households need sufficient income to pay for adequate and nutritionally balanced food. The problem is that many Australian's do not have enough income to pay for adequate and nutritionally balanced food once they have paid for one of the most expensive housing markets in the world, and once they meet rapidly growing transport and household energy costs.

Australia has populations who are too poor to support local farmers, instead relying on cheap imports. If the choices of consumers are edited over the longer term to support only the cheapest foods, we may get food of inferior quality and nutritional value; and at the same time destroy the resilience of the domestic food system.

It is important to note that this race to the bottom for the cheapest foods negatively affects not the Australian agricultural sector but farmers in other parts of the world. They too are being squeezed by the same global commodity chains as are our farmers. Similarly such farmers do not enjoy the same occupational health and safety conditions of Australian farmers and farm workers. This is not a future food system to deliver global citizens with the dietary diversity that is necessary for good health

Australian governments are very good at supporting farmers who produce wine, grain and beef through trade assistance (not tariffs), but are they willing to support local farmers who produce for the domestic market through, for example, paying a fee for service for the types of eco-system services (weed clearance, waterway management, pest control) that farmers provide on a routine basis?

Arguably the goal is no longer to maximise productivity, but to optimise across a far more complex landscape of production, environmental, and social justice outcomes⁽¹⁶⁾ and health outcomes.

There is an obvious need for top down and bottom up responses—be it social policy and labour market reform, and moving towards a mixed market self sufficiency system. The question is whether policy-making structures are fit for purpose or appropriate for confronting the fundamentals of food policy.

The fundamentals of food policy

Food planners need to be able to distinguish between:

- producing sufficient calories
- producing calories + micronutrients sufficiency.

This distinction is necessary to ensure not only access to staple foods but to the dietary diversity that ensures people meet their dietary requirements. In particular access to the plant foods that have functional properties associated with reduced risks of chronic diseases and improved health overall.

The second challenge is food policy that connects food production and individual enterprises with environmental sustainability to underpin healthy communities.

Multi-sectoral food policy requires engagement with health promotion and solutions for addressing the affordability of food once the environmental costs are internalised. It also requires acknowledgement of the important civil society developments that we briefly describe below.

Food as a movement for social change

Scholars and food activists are now arguing that food can be a vehicle for radical transformation in the cultural, economic and social worlds of local communities.

Momentum is gathering towards addressing food security and sustainable food production at local levels. We have community gardening movements emphasising community cohesion and self-sufficiency, slow food movements emphasising the value of what is local and specific to a region and its cuisine, fair trade, animal welfare and organic movements.

Agency is a critical issue here—who should act, the state, individual, corporates, or social movements, and in the name of which moral and political principles.⁽²⁴⁾

A lot of these food movements have their roots in other histories and geographies. Given the size of Australia the histories of individual places, the variability in natural landscapes and the cultural differences between difference spaces, it is unlikely that one size fits all solutions will work to solve the problems in food, be these subsistence remedies or super technical approaches—solutions will need to be forged to fit regional identities.

In Victoria there has been substantial work on evaluating food security issues which has highlighted the importance of diversity for building resilient food systems.^(10,25) Investing in multiple types of food production, both in terms of scale, products, systems and distribution offers the best potential for innovation (particularly innovation tailored to the Australian landscape).

For rural communities scale is a critical issue as the quality of life and existence of rural communities depends on a mix of different size farms (Duffy 1997 in⁽¹⁰⁾). Mixed system farming in Australia would provide greater food security because there are a greater range of producers to rely on if for some reason some of them fail to produce or if prices from overseas suppliers increased.

Equally the contribution from home production of food needs to be given serious consideration. In 1992 the Australian Bureau of Statistics report on the “Home production of selected food stuffs” found that Home production was just over 4% of total fruit production, 5% of vegetables and eggs were almost 20%. In World War II it was estimated that home production contributed to 50% of the food eaten. It is unknown what its potential is today (we need another ABS survey) but home gardening, food gardens in schools and community system are being revalorising by community gardening movement across Australia. Community gardens and school gardens in urban areas have probably had more publicity but there is also an uptake of these systems throughout rural and remote Australia.

Re-regionalising food systems using the Regional Development Australia fund

The region is being championed by food activists, and scholars as well as the federal government as the appropriate scale for the implementation of rural development. There is now 1.4 billion dollars in money available for regional development in rural Australia, for building resilient communities along with some \$10 billion for water initiatives, particularly those associated with irrigated food and fibre production. The question is will this money be spent with regards building resilient food systems for rural and remote Australia, and how can we advocate for food security as part of this investment agenda?

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