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Issues On Food Sustainability In Australia

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Introduction And Background

Food and sustainability have received much public attention in the last couple of years. Much of this has been driven by the world oil crises (peak oil); changes in climate and natural disasters and related economic global dilemmas (see Lang and Heasman, 2004; Public Health Association of Australia 2009: SIGNAL 2000). Australia has of course been a net importer of food, producing more than enough for its needs and exporting some. It is important to realise that the food system is driven by oil, oil to produce fertilizers, oil to work on the farm, oil to transport food around the country. This has led to an increase in costs at all levels and parts of the food system. In 2008 when the price of wheat had increased threefold for Australian farmers they were still having to factor in the higher costs of oil at all these stages not to mention the next year's increases. So should Australians be worried? A country that still (even with the figures in decline) produces a surplus of food is obviously still in a strong position. But there is a crisis emerging and now is the time to tackle that crisis.

Some Questions

There is a very real question over the sustainability of the current global and Australian food systems. The current system is based on 'false' accounting, where the food supply system is not held to account for the impacts that the system has on the environment or human or social health. These are often called the hidden or external effects (externalities) (Lang & Heasman 2004). With respect to other externalities the World Health Organisation has challenged the global food industry over its role in promoting certain types of fats and processed foods and the impact on human health (Fleck 2003; WHO 2003). The Public Health Association of Australia, 2009 report 'A Future for Food' raises many of these issues and calls for a 'national integrated food policy' for Australia, which would involve all the food sectors including the food industry. The report highlights a number of dilemmas for Australia which include questions about:

- the appropriateness of setting limits and foods to avoid
- the balance between land to grow feed for animals and land to feed humans directly
- the role Australia should play in addressing concerns re world population growth and the impact on food security.

These are all challenges both to the current food system and the food choices we all make.

Australia does not sit alone in these global issues and decisions made in Australia can have far reaching implications for those in other countries.

Australian Agricultural Developments

Australia is unique in never having gone through a pastoral system of development. It has in its recent past adopted an agricultural system that is not indigenous and reflects a continent without a tradition of indigenous pastoralism (Flannery 2005; Symons 2007). In effect Australia by-passed the development of its own system of agriculture and imported a European model. Food behaviours and beliefs reflect a complex interaction of factors. At a national or regional level these often arise from the local ecology and behaviours have become systematised as food cultures which people use to both seek and express identity (Bell and Valentine 1997). For example, the use of raw fish (sushi) in Japan is now a part of Japanese culture (Bestor 2005) and this cuisine is closely associated with national identity. In Japan this preference for fish has itself arisen from ecological and supply issues and the dangers of eating raw fish have been balanced by being eaten with wasabi, an antimicrobial agent. The ecological and safety issues are now codified as national mores and values. For Australia many of the cultural equivalents of 'wasabi' can be found in Aboriginal eating patterns (Flannery 2005). The Australian grasslands were changed to enclosure to grow food on scales not previously seen but also not in tune with the local ecology. In essence it was an imposed model of agriculture. Similarly with the development of ranch farming, the scale of this and the subsequent damage to the environment have become apparent in recent years (Flannery 2005). The dominant cultural model is an Eurocentric one (Sokolov 1991) reflecting the early waves of immigration; in more recent years there are changes to Australian cuisine with a very definitive South East Asia influence with Thai and Vietnamese cuisines becoming more prevalent.

Migrants, 'First Fleeters' And Aboriginal Food Cultures

In Australia waves of migrants have of course tried to replicate their cultures of food growing in their front and back gardens (Gaynor, 2006). Symons (1998) says there has been three periods of tremendous change in the food industry – the industrialisation

of the garden, the pantry and then the kitchen. He develops this further when he says Australia went from a hunter gatherer to industrial food society skipping the agrarian model with families planting crops around a homestead (Symons, 2007). This planting was done by migrants yearning for a memory of the 'old home'. The plants were those they brought with them from the old land. This was further reinforced by the rationing system, so the emphasis was on the production of meat and dairy products. These became the cultural indicators of affluence, breaking away from the lack of meat as an occasional part of the meal to a situation where meat was affordable as an everyday item. This represents the move from feasting as an occasional state of affairs to one where we feast everyday.

Ted Egan (2003), a former Administrator of the Northern Territory, notes the table d'hôte of the 'first fleeters' was mouldy bread, rancid salt pork and beef with turnip tops and dried peas, preserved pears, a tot of rum with convicts receiving less of the above and no rum! The Iora/Eora Aborigines (the name given to the coastal Aborigines around Sydney) choice of food was Sydney rock oysters, crayfish and prawns, with a choice of kangaroo served with roasted nuts and seeds or freshly caught grilled snapper, followed by seasonal berries and fruits, washed down with water. What this reminds us is that food is as much a cultural artifact as a matter of nutrition or ecology. While not advocating a return to aboriginal dietary practices we are making the point that the current system was one that was imposed on the land and did not grow out of and learn from local infrastructures. The health enhancing Mediterranean diet(s) evolved from local landscapes and local cultural practices. The Greek diet relied heavily on the knowledge, skills and work of women foraging, all of which was back-breaking work and very labour intensive. These practices are now in decline as women are free from the drudgery of food preparation and cooking becomes more dependent on what is available in the shops as opposed to the fields.

STUDENT ACTIVITIES

1. In the first paragraph the author states that 'It is important to realize that the food system is driven by oil'. Explain what 'the food system is driven by oil' means.
2. In the second paragraph the author states that 'the current Australian food system is based on 'false' accounting'. List the factors that have not been taken into account in calculating the costs in our food supply system.
3. List and explain the challenges to the current food system and the food choices we make, as identified in the Public Health Association of Australia, 2009 report 'A Future for Food'.
4. The author states that 'Australia went from a hunter gatherer to industrial society, skipping the agrarian model with families planting crops around a homestead'. Explain the implications this has for our food system?
5. The author states that the current Australian food system is one that was imposed on the land (by waves of immigrants) and did not grow out of and learn from local infrastructures (local landscapes and local cultural practices).
 - a. Compare the food consumed by the 'first fleeters' with that consumed by the Iora/Eora Aborigines who lived in the coastal areas around Sydney.
 - b. Analyse the nutritional value of each of the diets you have described in part a. Which is more nutritious? Explain your answer.

Food Miles

One of the results of the global food chain is the movement of food between and within countries. This represents the breaking away from the 'closed systems' of agriculture mentioned above, with food flowing through areas and between areas. The distance food travels in the United Kingdom between producer and consumer rose by 30 per cent in 15 years at the end of the twentieth century (Paxton, 1994, Steel 2008). This has been called the 'food miles' effect. The increase in food miles results in pollution, use of pesticides, increased packaging all representing a rise in hidden costs which are passed on to other areas. It does not mean that the consumer does not pay for them but merely absorbs the costs in other areas. This represents the continued industrial development of the agricultural system.

It is now recognised that food miles is too simple a metaphor and more recent developments have moved to carbon costs and lifecycle analysis but for the moment let us work with the idea of food miles accepting its limitations and using it as a heuristic (ie a way of operating). This 'externalisation' of costs in travel results in damage to the environment and human health. The costs are paid through other budgets such as indirect health costs by a contribution to cardiovascular disease and food poisoning treatment or environment costs such as pesticide and nitrate pollution. In the European Union it is said that consumers pay three times for their food: firstly, across the counter as they buy it; secondly, as part of their contribution to subsidies of agriculture through the Common Agricultural Policy; and thirdly, in the form of cleaning up environmental pollution caused by intensive agriculture (Pretty *et al.* 2000).

One of the solutions to food miles has been the localisation agenda. There is current interest in local and regional food growing and supply, with some cities and areas looking to supplying regional and seasonal food (for example, transition cities see <www.transitiontowns.org>). In Australia this has become a concern within the States as food is transported many miles, often crisscrossing the country in its moves from raw product to processed goods. The scale of Australia makes the transport of food almost inevitable but there are inconsistencies in the production and transport of foods. Perth, sometimes referred to as the most isolated city in the southern hemisphere has one of the largest food storage and distribution centres in the world, yet this comes with a cost. These logistics have become a concern to the major retailers who when oil prices were low, absorbed this as a 'hidden cost', but now the increased cost of oil has made this difficult to ignore (Gaballa and Abraham 2007; Rama and Lawrence 2008). The growth of local farmers markets, community supported agriculture and city gardens are all responses to this higher cost of food and a demand from consumers for fresher and more flavoursome food that has been harvested at its peak (<www.farmersmarkets.org.au>).

Crises In Agriculture And Food Production

The existing Australian agriculture and food system has been hit by a number of crises. These range from water shortages, cyclones, through new food imports to a demand for more processed food and food having to travel many miles to concerns with the impact of the existing food supply on chronic

diseases (Public Health Association of Australia 2009). Weis (2007) calls these developments in agriculture with the focus on a smaller number of crops and intensive farming ‘ecological violence’. He also points out that modern technological development; factory farming and increasing use of petrochemicals have resulted in a break in the age-old practice of agricultural growing systems, which were ‘closed’ with loop cycles of nutrients and energy.

Australia is no stranger to the externalised costs of food policy. CSIRO (2010) says that climate change including droughts, food price volatility and the opening of world markets are among the key challenges facing Australia in the new millennium. For example, in 2006 Cyclone Larry wiped out the entire Queensland banana crops leaving 4000 people without work. The price of bananas went from about \$2 to \$15 or more a kilo. Australians paid the price because it seems we can’t live without bananas. Adding to this higher cost was the restrictions on imports due to bio-security (pests and diseases) concerns (see <http://www.freshplaza.com/news_detail.asp?id=39345> for a discussion on banana imports).

We will all have to get ‘more from less’ in the new world order. The issue of food miles is a useful but incomplete heuristic for other measures. For example, growing rice in Australia makes little sense due to the heavy water demands, therefore it is better to grow it in areas in South Eastern Asia and transport it along with the associated costs than to use water which is already in short supply in areas of Australia.

STUDENT ACTIVITIES

6. a. What is meant by the term ‘food miles’ effect?
b. By what percentage did the distance that food travels in the UK between producer and consumer increase in 15 years at the end of the twentieth century?
c. Outline four consequences of this increase in food miles.
7. Describe the hidden costs of food, that is, those costs other than the money we pay over the counter.
8. The author describes two locally or regionally based initiatives which are seen as solutions to food miles – transition cities and farmers markets.
a. Briefly describe each of these two initiatives.
b. Explain the ways in which each initiative helps to solve the problem of food miles.
c. Describe benefits, other than environmental benefits, of these two programs.
9. Outline six of the crises that the Australian agriculture and food system has faced in recent years.
10. In 2010, CSIRO identified three key challenges facing Australia in the new millennium. List these challenges.

Background To The Global Food System

It is necessary to understand the principles on which the current food system is based (Lang, Barling and Caraher 2009). Previously Australia, due to its relative isolation from trade routes and imposition of strict import barriers was protected from imports of food. New trade deals with China in June 2010 opened the market for Australian coal and uranium exports but at the expense of opening up the trade in some foodstuffs. In recent years one example has been the death of the local garlic

industry as Chinese garlic exports flooded the Australian market. On a global level recent climatic events have resulted in less food crops being grown and the oil crisis has led to land being used for the growing of bio-fuels and existing food crops being diverted to bio-fuel production. All this leads to a situation where there is less food available and thus higher prices; the law of supply and demand.

Tensions Between Growth And Ecological And Public Health

One of the key problems is the application of classic economic models of continuous growth to food growing and production, based on the assumption that unparalleled growth with economies of scale is the only way to feed the world. Such an approach does not address issues of public health or national food security. At the time of writing this there is sufficient food to feed the world’s population. The problems are those of affordability, access rights and getting the food to where it is needed (Sen 1981; Caraher and Carr-Hill, 2007). Issues which as we will see later on are not that much different in Australia. Globalisation of food systems is premised on the principle of free trade and liberalisation of trade barriers, the underlying belief of benefits to all (See Sachs, 2005). The neo-liberal economic approach also assumes that approaches such as subsidies and taxation on food imports are barriers to trade and thus not encouraged. The ‘real’ costs of food have not traditionally been factored in with the hidden costs absorbed elsewhere as in transport costs, the loss of valuable bio-diversity and damage to the environment. This is equally true of Australia as anywhere else and what was once viewed as miracles of logistics are now seen as costly follies. For example:

- The stories concerning food traveling great distances for processing and then transported back to near its source (Gaballa and Abraham 2007).
- Tasmanian apples end up in China (The Sydney Morning Herald June 22nd 2010, see <<http://news.smh.com.au/breaking-news-national/tasmanian-apples-bob-up-in-china-20100622-yuec.html>>).
- Farmers underpaid for their produce.

The Impact On Farmers And Rural Communities

There are clearly benefits from a globalised world. Questions remain as to the balance we are willing to accept between the benefits and the costs. Key impacts of globalisation of the food system include:

- Development of huge multi-national companies who control what is grown, where it is grown and prices.
- Loss of biodiversity.
- Homogenisation of culture.
- Less emphasis on public health.
- Rural communities in decline.

Table 1 highlights the concentration of power for the majority of foods grown in Europe, with Australia for comparison. Australian retailing is dominated by two retailers, Coles and

Woolworths. The retailers control the food supply system not by owning the farms or the factories but by setting standards in contracts for those who grow and produce for them. This means they do not carry the risks or responsibilities when prices fluctuate. Rural farming families and communities are thus dependant on the retailers for their livelihoods. This is why many smaller growers and producers have been drawn towards organic production and localisation of supplies. It makes ecological sense to have closed loop systems of both production and supply and it is good for local business with more of the cost going back to the grower producer.

Table 1: Examples of grocery retail concentration figures

Country	Concentration
UK	5 major retailers account for 80% of all food grocery shopping
France	5 main retailers account for 80% of all food shoppers
Germany	4 major retailers account for 80% of all food shopping
Australia	2 major retailers account for 76% of all food shopping

Adapted from Atkins and Bowler (2001), and NARGA (2001).

Market Reforms

Recognising a need to be more competitive on the international market, over the last two decades Australia has been an advocate of such neo-liberal free-market reforms discussed above. The Australian government has weaned farmers off subsidies that protect local industries, and tariffs have been gradually lifted. In this new world order Australian farmers had to produce and export more to stay viable. These market forces act in tandem with the social changes that are occurring to give large corporations power to dictate the agenda to growers. The demands of the global food economy and the pressure to grow crops for cash have implications for local communities. This effectively has made the market less amiable for farmers (through oversupply) and encourages the environmental degradation of the land through unsustainable farming practices (Vanclay and Lawrence 1995). The effects have been devastating for the health and welfare of the rural sector with fewer family farms and a growth of corporate forms of agricultural production (Lawrence, Share, and Campbell 1992). This has led to the death of many small rural towns.

The establishment of intensive agriculture in areas of the world where it is harder to measure or control the effects of such intensification can have an impact on local economies and cultures such as future degradation to the environment, as well as costs to the health care system as diet-related non-communicable diseases take a toll. We live in a global world; this shifting of the environmental and disease burdens is neither fair nor sustainable. So while we, as consumers may not directly pay for this our fellow human beings do. These again are examples of the externalities of the current system, so food illnesses and chronic disease such as heart disease are burdens picked up elsewhere in the system e.g. health care and insurance costs.

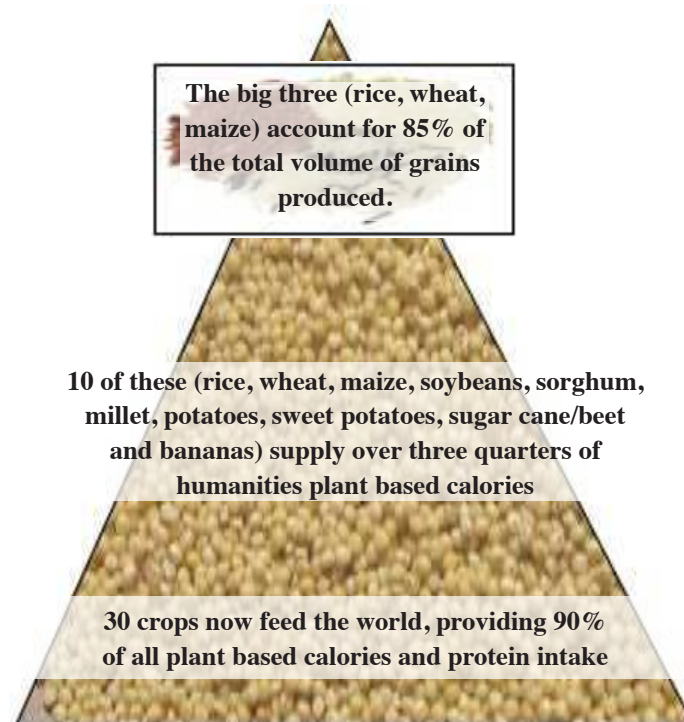
Crop Growth And Use

For Australia the problems are not the amount of food per se but those of:

- The uses to which crops are put, for example, for animal feed instead of feeding humans.
- Lack of entitlement to food, even in times of crises such as famine, there is food but not everyone can access that food (Sen, 1981; Caraher and Carr-Hill, 2007). We will deal with this in more detail below.
- The growing economies of China and India are diverting food for human consumption into food for animal feed.
- Traditional food crops being used and diverted for use as bio fuels.
- A food system which is based on price and profit as opposed to fairness and equity.

Also the underpinning model of operation of many policy developments and actions is a focus on the individual as a 'consumer' making sustainable choices. The policy developments more often avoid regulation in favour of agreements with the food industry to do the 'right thing'. Alternative approaches are based on a model where the individual is a citizen and has rights (and duties) and regulation of the food industry.

Figure 2: Plant varieties and contribution to global diet



Developed from data from Weis 2007

The irony with globalisation is that as our choices have increased our dependence on a small number of crops has also increased. At an individual level increased choice provides us with the opportunity to consume that which we like more often; it does not always increase our range of food. On a global level Figure 2 shows this dichotomy. This reflects an inconsistency in food policy which if left to our own devices we will eat virtually all of what we like 'a lot', about half of what we like 'a little', and almost none of what we least like.

So despite the 12,000 products on supermarket shelves, we seem to be still dependant on a small core group of crops. Thirty crops now feed the world, providing 90 per cent of all plant based calories and protein intake. Figure 2 sets out this scenario. On a global level many products are now produced on a scale unimaginable twenty years ago. While the population has doubled since 1950 consumption of meat has grown fivefold. In 2005 China consumed more meat than the entire world in 1961 (Weis, 2007). Do these trends matter? They matter in that they may not be – globally- sustainable and the solutions lie not in saying that the populations of China and India should not consume more meat but of global shift in food production and consumption patterns with citizens and consumers recognizing the need for us all to make changes and adapt for the good of all and the planet.

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STUDENT ACTIVITIES

- There is sufficient food produced to feed the world's population. Identify three problems that prevent this from happening.
- Describe the five key impacts of globalisation of the food system as outlined by the author.
- From Table 1 it can be seen that Australian grocery retailing is dominated by two retailers, Coles and Woolworths. Discuss the ways in which these retailers control the food supply system.
 - Outline some of the reasons why smaller growers and producers have turned to organic production and localisation of supplies.
- Describe the ways in which market reforms and the power of large retail corporations have lead to the death of many small rural towns in Australia.
- What does the author mean by ‘this shifting of the environmental and disease burdens’ (to other parts of the world) and why does he say that it is ‘neither fair nor sustainable’?
- ‘As our choices have increased our dependence on a small number of crops has also increased’. Explain the reasons behind this statement.
- List the ten crops that supply over 75 per cent of humanities’ plant based foods. How many of these do you eat on a daily or weekly basis? List the foods that you commonly consume that contain some of these crops (for example, bread made from wheat, soft drinks containing sugar).
- Global trends such as increases in meat consumption may not be globally sustainable. According to the author, what is the solution to this problem?

Going Further

- The author identifies ‘carbon costs’ and ‘lifecycle analysis’ as two recent tools used to analyse the impact of food production and distribution. Use the internet to find out more about these tools and the ways in which they are used.
- Choose one of the initiatives: Transition Towns or Farmers Markets. Visit the website of the chosen initiative. Write a 200 word report on the key features of the initiative and the ways in which it helps to solve the problem of food miles, as well as the other benefits of the program.
- Visit Ceres website at <www.ceres.org.au>. Read about this 30 year old sustainability based not-for-profit centre in Brunswick in Melbourne. Click on ‘Food Connect’. Outline the features of the ‘Fair Food Movement’ and the benefits to the consumer.