

THE ART, HISTORY AND SCIENCE OF SUSTAINABLE FOOD – WARRINGAH FROM 1911 UNTIL 2111

INTRODUCTION

The very fact that's you're here this evening is enough to assure me that you have an interest in your future. In that of your family, and presumably in that of billions of humans and others creatures you have never met, and never will.

So you want to live sustainably. But what does that mean? And how can you be part of this idea? First you need to understand it – and there's some unavoidable science and history involved there - because it is only from a basis of actual understanding that you can map out a strategy to help your planet, your community and its inhabitants.

Specifically, this evening I'm going to talk about sustainability in respect of food.

Sustainability in food has two distinct faces. There is the normative: what should I eat? And there is the practical: what will I eat? But the answers to these questions can only be found by exploring the historic ('What did I eat?') and the observational ('What do I eat?').

Sustainability has been practiced for millennia, but as a term it is an entirely modern. In that respect it's just another overused phrase. Yet couched amongst the jargon and acronyms of this era's climate champions and organic devotees, there lies several important if uncomfortable realities.

1. Whether or not to change the manner in which food is produced is no longer ours to decide, for change has already begun.
2. Misconception, misrepresentation and deliberate deception lie at the heart of our agri-business sector, including the cherished organic movement.
3. Food-related disease, especially chronic illnesses, will become more prevalent.

But most concerning of all is that our lack of national and global courage in facing up to the problems associated with our food system means that we are sliding towards a food catastrophe whose effects will be the defining political, social and demographic story of the 21st century.

This is not alarmist diatribe, but rather just a measured reflection upon the consequences of our collective decision to allow food to industrialise.

Bill Clinton was right in his speech to the United Nations in 1999 – food is not, and should not be allowed to become, a commodity.

But don't worry, there's still plenty that you can do.

In the course of the next 45 minutes I want to briefly consider the history of food, explore our current course, and to discuss the options that lie ahead of us in the coming century. We cannot understand what sustainability offers without unmasking the facts of the system it hopes to repair. At the end of this I hope we may have some clearer idea of what family dinner will look like in Warringah in 2111.

WHAT DID I EAT?

Let's go back just 100 years. In 1911 the world's population was 1.7 billion, a doubling since 1750. That doubling from 850 million took 161 years, but by contrast the previous doubling had taken 1200 years.

As for the year 1911? Well we know quite a bit about Australia in 1911, as it was the year of our first national census (held on the 2nd of April). Australia's population was 4.4 million, and the majority (as now) was concentrated on the south-eastern corridor. The northern beaches of Sydney was home to just 42,800 citizens, but that was equivalent to one-fifth of the population of Western Australia at the time to put it into context. But while WA has bounded forwards (now home to 2.8 million Australians), our area has expanded less than half as fast, to just over 250,000 people.

In 1911 Australia's food culture was regional, local, seasonal, artisan and uncomplicated. Steeped in our British heritage, meat and three veg was the mainstay of our diet. Most homes had a vegetable patch, chickens abounded and some families even kept goats or sheep for milk. If this sounds hard to imagine, think about driving up Powderworks Rd in Elanora or through the backblocks of Warriewood.

The meat on the table in Warringah was mostly brought from within the greater Sydney basin (other than beef which came from the Hunter and Riverina). The vegetables were a blend of home-grown and locally-sourced as Sydney was ringed with a circuit of market gardens.

The agricultural techniques Australian farmers utilised were based on the same basic principles that had underpinned farming since Mesopotamian times: tilling, sowing and hope being the three most important elements. But things were set to change. Mechanised tractors were just arriving and would double farm productivity in the following decade. This became all the more necessary as the onset of WWI forced the government to take charge of agricultural policies in order to feed more than 400,000 troops serving overseas as well as supplementing the needs of other Allied troops.

Agriculture had always been about taming nature, but the limits of land productivity had been reached by 1935. Australian farmers could only increase the quantum of food on offer if they spread further and cleared more land.

The Second World War did not see the same improvements in agricultural output as the First had. Instead, gains were made by streamlining farm processes and distribution chains with new train lines and trucking.

The world's population in 1945 was 2.2 billion. Yet just 65 years later that figure has tripled to 6.6 billion. Given the relatively steady rise of population through history, one must ask – what triggered this outbreak of human growth?

The answer lies in food.

As any biologist will tell you, the number of organisms that can be supported in any given land area is defined by the number of food calories that can be produced to nourish them. Humans are no exception. The key element needed to produce edible vegetation (for crops or to feed animals) is nitrogen as it is the basis for all proteins. While there's plenty of nitrogen in the air, it's inert and can't be used. What's more, there is a limit to how much nitrogen is available in the soil, as traditionally it is only

the bacteria that grow on the roots of legumes and lightning strikes that can take nitrogen from the atmosphere and fix it into the soil.

But a German scientist called Fritz Haber had developed a technique for converting gaseous nitrogen into a bio-available form towards the end of WWI. In fact he won the Nobel Prize for Chemistry in 1920 for his discovery. Haber's effort was not agricultural in its leaning, however. Nitrates are also the key component of munitions due to their explosive qualities. Haber had made mass armaments possible.

As a sad addendum to Haber's history, it was he (a German Jewish scientist) who developed Zyklon-B, the lethal gas that enabled Hitler's genocide. He had emigrated to the United States in 1934 to avoid persecution, but was unable to accept the terrible outcome of his work and ended his own life in 1946.

At the conclusion of WWII, Allied government were left unsure of what to do with the tens of millions of tons of leftover munitions. Simultaneously in the USA, Canada and Australia, the decision was made to hand these over to Farm Boards to be given free to farmers for soil improvement.

The effects were extraordinary. In three years, the world's agricultural output doubled. By adding nitrates to the soil, farmers were able to tame the land as never before. Fallowing was no longer required, tilling could be done indefinitely to control weeds, and the land gave forth more, and more and more.

It was the beginning of Australia's Golden Age. Remember our biological rule: more resources meant more human organisms. Population expanded quickly through the Baby Boomers, and urban consolidation began. Vegetable patches were replaced with lawns, and the chickens disappeared. With so much food on offer, why would anyone bother growing their own. Our ability to export food, mirrored in north America and parts of Europe, was the key reason that the world's population exploded in the latter half of the 20th century. We had quadrupled the number of calories produced, and this translated into a near exact match in the number of humans alive.

Producing and managing this amount of food was no longer the task of small artisan farmers. The scale of economics could not sustain such boutique operations. And so the corporations took over farming, and agri-culture became agri-business.

Food had become a commodity.

WHAT DO I EAT?

Close your eyes for a moment and imagine your kitchen.

Cast your mind's eye through the cupboards and the fridge, and try to count the number of products. Forty? Fifty? Sixty? More?

Now ask yourself how many of those products you would consider to be 'natural' or 'un-adulterated'. You're looking at the fruit and veg, I'd reckon. A glossy apple, perhaps.

But what are the facts? That apple was forced into flower then fruit through the careful application of nitrogen, potassium and phosphorus, then protected with herbicides and pesticides. Picked just a little under-ripe to permit unbruised shipping, it is carefully washed, then sprayed with a corn-oil based wax to seal against bacteria and to give an appealing shine. It is then carted off to a cold store where it could easily sit for up to 9 months. In fact, if you eat an apple in February, I'll guarantee that it is at least 6 months old, because apples are (you may remember) an Autumn-Winter crop.

Is that natural?

What about the meat? Your steaks have come from cows that have received regular injections of antibiotics to prevent infections that occur regularly amongst cattle that are kept in overly tight herds or feedlots. Most cattle are also given low-level hormone treatments to encourage muscle growth and maintain balanced temperament. On the plus side, the majority of Australian cattle are grass fed, which is a more natural and synergistic form of husbandry (and makes better-tasting beef). But many are grain-finished in feed-lots for 30-90 days. This is not as luxurious as it sounds, as in fact it describes a concrete box in which the cattle are fed copious amounts of flaked corn to encourage the development of intramuscular fat and to ramp up water retention. This happens as a result of this calorie-rich grain, a completely unnatural food for cows. The grain-feeding increases the bulk and weight (leading to higher carcass value) but also increase saturated fats, cholesterol content and results in drier meat when cooked.

Is that natural?

Do you even want to know about the chicken? Cornish Cross chickens are a specially-developed breed that will reach full adult weight in just seven weeks (as opposed to 24 weeks for traditional breeds), but does so by bulking up its breasts at an abnormal rate in response to a calorie-intensive grain-based diet. Have you noticed how chicken breasts used to weigh 160g, but now regularly weigh over 300g? That extra weight renders the chickens lame, and means that even free-range chickens that have nominal access to outside areas cannot walk to enjoy it. Treated with a range of preventative medicines (but not hormones it must be noted, as this would breach ANZAS rules) the birds are infection free, but have never developed flavour and have reduced nutritional value.

Is that natural?

Should we look in the cupboard? 90% of all foods sold in Australian supermarkets by dollar value contain at least one synthetic addition, usually preservatives, sweeteners or antioxidants. Most contain more than three. In dried, canned and packaged foods 99.8% (by SKU) contain at least three.

Let's go organic, I hear you say.

What about the organic products some of you buy? Well, there's a big issue. Organic labelling laws are as lax in Australia as they are overseas. Pesticides and herbicides are banned, but only the synthetic ones. Plant-based sprays can be used at will. Items can be labelled as organic despite containing more than 38 different synthetic additives. Organic meats must have 'access to free pasture', but not for all their life. Hence organic chicken are cooped in barns for their first five weeks, and then refuse to venture out thereafter when the doors are eventually opened. They're indoor chickens....but by the chickens' choice.

The term 'organic' is mostly used in a far-reaching and holistic sense, yet the actual application of the process is usually far from this. It implies a sense of connection to land and place, it suggests an element of betterment. In essence, 'organic' is used in a deliberately misleading way, to imply something large, while delivering something little. The industry achieves success on the back of an indivisible blend of consumers' emotional connection to their food and their lack of quantifiable knowledge. Organics too have become an industry and a commodity.

When we actually look at what we really eat, there is a stark conclusion to be made: Australians, including those in Warringah, are consuming too many calories. Usually by more than 400 calories each and every day.

Our plates have become larger, and our meals have grown accordingly. Worse still, we eat out regularly in a restaurant culture whose success depends on providing consumers with a sense of fullness that is not necessary, but which provides additional perceived value. We want more bang for our buck.

We buy cheese from France, and sauces from China. We buy ham from Denmark and vegetables from Peru. Yet we are never asked to pay for the impacted costs of this process. There may be only 50 food calories in a bunch of Thai asparagus, but there are 2200 fossil fuel calories in shipping, handling, distribution and refrigeration. We call these 'food miles', but don't pay for them, because pollution is free. We outsource the cost of dinner to our kids.

Australians throw away 30% of all the food they buy, and we are not exception. We trim badly, store too long, change our minds, and possess an unnatural fear of leftovers. The fact is, the cost of food is not high enough for us to use it wisely, and we like it that way. Think about it, you would never trash electronic goods like you do food.

Food has become a hobby, not a necessity.

WHAT SHOULD I EAT?

So here's the prickly bit of the equation, the moral bit.

Idea #1. What should you eat? Well, the first answer is simple. Less.

That's right, you should be eating less. Let's face it, you're not actually hungry, in fact you hardly ever are. We Australians are the embodiment of gluttony through excessive choice. The terrifying bit is this: overconsumption of calories is the contribution you make towards your children's diseases. By enabling the agri-business to push more and more calories down the pipeline, we ensure that our kids will be inescapably exposed to food-related disease in the future.

Because the fact is that the 'economy' of food is not economical at all, and it comes down to simple business maths.

The Australian population is growing at only 2% per annum, and that includes immigration. If you believe that almost every Australian is already eating enough food (and probably too much) then you'd have to conclude that our food economy is running at close to saturation.

So the fact is that the food economy can only grow at the rate at which we produce new consumers. 2%.

But show me a major company anywhere in the world that will happily accept 2% growth year-on-year. You can't, because they don't exist. So as a result, agribusiness needs to find innovative ways of channelling additional calories of food to us. Enter resistant starches and artificial sugars – food we can eat without ever metabolising them; foods that leave us ready (and in some cases looking) for the next mouthful. Witness the growth of supersizing – in packaged foods, in meat cuts, in sandwich bread. Witness the massive increase in the percentage caloric value of packaged foods in the last decade.

We are paying for the privilege of being poisoned by corporations. In fact, we have become the unwitting participants in our own poisoning through excess. EAT LESS!!!

Idea #2. You should be eating seasonally. But what does that mean? Seasonal means it's available from here, for here. When oranges are in the stores in February, how are you to know that they're not seasonal? This is the social knowledge corporate food has trained us to forget.

For starters, only ever buy fresh food that you know comes from Australia, or at a stretch New Zealand. If it's imported, then that's because it's out of season here. At the same time, you'll be avoiding the massive food-miles pollution adjunct that necessarily comes with importation.

Beyond that, it's time to do some homework. Go on-line and find the Sydney Markets seasonality guide. It's free and incredibly easy to use. You'll have an instant ready-reckoner for what to put on your shopping list. For seafood, you'll find a guide on the Sydney Fish markets site, and for meat visit Meat and Livestock Australia's web portal.

Idea #3. Eat as locally as possible. So your food is Australian, but are they potatoes from the Southern Highlands, or potatoes from W.A.? If you're not sure, you should be asking. Visit localfoods.com.au for home-delivered local ingredients.

Idea #4. Buy organic. I know I lambasted parts of the organic industry less than 10 minutes ago, but it's a choice between very bad, or just a little bit bad, I'm afraid. There may be misrepresentation in organics, but the core rules are so much better than the conventional farming that I'll happily swallow the organic 'fertilizer'. Fewer chemicals, less pollution, healthier land, more nutritious food. It's simple and cost effective.

That's right, cost-effective, even when it's more expensive. If conventional farmers were actually asked to pay for the carbon and pollution impact of their product, then it would be comparable, or even cheaper, to buy organic. And you wonder why I blanch at the government's cowardice in deciding not to apply their carbon tax to agriculture.

Consider bagged lettuce – there is nothing more inefficient in your supermarket. 400g contains 80 calories of food. But there's 1100 calories in the plastic bag, 1980 calories in refrigeration, 800 calories in shipping and 1750 calories in on-farm inputs. 4740 calories are required to allow us to pretty little leaves, rather than a whole head. Yet because there's no cost to the manufacturer (in fact we as taxpayers subsidise the electricity costs for farmers' refrigeration) it means that this product will always be cheaper than a simple, perfect organic lettuce.

As a footnote, it's interesting to note that bagged lettuce is the single biggest growth item in Australian supermarkets in the last 5 years. We are buying into the lie at a faster rate than ever before.

So, petition your local member to advocate enforcing a carbon price of farmed goods - stand up for change. The farmers say their product doesn't cost the earth, but it damn well seems to be doing just that.

Food is not supposed to be as cheap as it is – we are making food dangerous by demanding it excessively inexpensive.

Idea #5. Deal with your waste. So you throw out 30% of your fresh food. OK, your money, your choice. But what do you do with it?

Start a worm farm, or start a compost bin. These require little management and are simple to use. Set up costs are minimal, and the output is remarkable for your garden. You can literally convert tonight's dinner, into next month's dinner! You'll find loads of specifically helpful advice from the council or from most hardware stores.

Idea #6. As an alternative, go back a century and get some chooks. They chomp through your green waste more efficiently than any other creature. Lettuce, carrots, pasta, you name it. And they'll fertilize your garden in the process. 2-4 chooks is enough for the average house, and you'll get eggs to boot. Just remember to house the chickens in a dry place, and always put their food out in the morning to avoid rats.

Idea #7. Grow your own. You might think that planting a tomato bush is a purely romantic notion with no measureable impact. Well you couldn't be more wrong. Three things happen when you start growing vegetables.

Firstly, your family thinks about food in a different way. They will appreciate what it takes to produce their food, and will be more cautious about waste. Secondly, even reducing the supermarkets' food share by a couple of percent will cause corporate shockwaves and compel them to understand your perspective. Never forget that the power of the consumer is substantial, and the choices are yours to make. Thirdly,

you will learn those long-forgotten rules about seasonality, making sustainable shopping for other products instinctive.

Idea #8. Eat less meat. It takes 57 calories of on-farm input to produce 1 calorie of output in meat. This contrasts with 8:1 in vegetables. Many parts of Australia are simply not suited to meat farming, and the land is suffering as a consequence. Ask any farmer, of the record, and they'll tell you, 'We can't go on like this forever'. That is the definition of un-sustainable. We need vitamin B12, hence meat should be part of our diet. Yet an adult needs just 500g per week. Many adults consume this in 36 hours.

Idea #9. Eat secondary cuts of meat. The prime cuts account for just 20% of any animal carcass. What happens to the rest? Sausages, mince, pet food and export. If we start to eat more secondary cuts we have three effects: reduce our costs (they're cheaper), reduce herd sizes through better resource utilisation, and as a result we reduce the stress on our farm system. As a by-product, we start eating tastier meals, because it is through usage that animal muscles become flavoured, but also tougher. It's a balancing act.

Idea #10. Eat more pulses. You can get most of your protein requirements through pulses like soy, chickpeas and lentils. By at the same time, these crops help restore nitrogen to the soil, necessitating less fertilizer. Make sure you're buying Australian legumes, though, or you're simply exporting the benefits.

Idea #11. Eat more fish. You may not know, but Australia is the world leader in sustainable fishing. Through the expansion of aquaculture in Tasmania and South Australia we are now producing more fish than ever, but with increasingly lowered inputs. The fish meal is made from entirely sustainable sardines, and the mobile netting systems designed in Australia allow us to follow areas of ocean to ensure a maintenance of biodiversity. Look for Hiramasa kingfish, Petuna ocean trout and Tassal salmon to support the market leaders. Supporting them allows them to invest more in sustainable technologies that can then be exported to assist other countries to improve the sustainability of their fisheries. Remember 48% of all seafood is now farmed, get used to it.

Idea #12. Abandon soft drinks. The soft drink industry is not only killing us through excess caloric intake, but it is also the main mechanism by which our agri-business sector dumps excess calories, although ethanol fuels are catching up. If we close out this sector, we will abate the growth of corn farming and prevent the same slide into a calorie-driven food system that has been experienced in North America and parts of Europe.

Idea #13. Teach your kids to cook. If we know that the majority of packaged foods are produced unsustainably, then we must teach our kids to cook, or leave them with no options. And don't teach them how to open a bottle of Raguletto, teach them to cook!!!!

Idea #14. Share a meal. By restoring the act of communal eating we bring back the element of pride and anticipation that rightly should underpin cookery. But the real sustainable benefit of sharing is that our desire to please through food is repeatedly shown to channel individuals towards cooking real food with real ingredients. That fact alone is usually enough to ensure that they will engage more with where their food comes from, and what its inherent qualities are. Thought becomes action, becomes habit, becomes character.

Idea #15. Visit a farm. When was the last time that you actually saw where your food comes from? I don't mean a fancy farmers' market, I mean an actual farm. An appreciation of what goes into creating the ingredients from which one's meal might emerge is a central key to taking its provenance and usage more seriously. If it's just something in a shop, then why should we feel any responsibility about how it is used?

Idea #16. Ask questions. When you shop for food, ask about the ingredient's history. Is it Australian? Great. Whereabouts in Australia did it come from? The answer to that will usually be on the box, although it's sometimes a matter of convincing the shop staff to go look. The more of us who ask these questions, the more likely it is that shops will provision themselves with ingredients that provide the right answers. It's the power of the consumer. If your shop keeper isn't helpful, shop elsewhere. They're soon change their tune.

Idea #17. Petition for change in our waste management sector. The simple act of separating your green waste (everything that's not meat) means that landfill is reduced and precious nitrogen and carbon are returned to the earth. Yet even here in progressive Warringah, green waste is not collected as often as regular waste. Yet by changing the collection regime to favour green sorting, residents will be forced into a new approach. If your inorganic bin is half the size, and your large green waste bin is collected every week, you'll have no choice but to separate efficiently.

These systems are already being used in a variety of councils around Australia. I know that Warringah Council are aware of this option and are looking at it. I commend them for that. May it happen quickly.

Idea #18. Ask yourself three questions. Whenever you buy a product, you need to consider distinct points. What is the source of the product? How will I use it? What are its legacy effects (impacts of use, waste &c)? It's a key part in ensuring that we are selecting what we consume carefully, not carelessly.

Idea #19. Be the inspiration for change. Use your social network to help change people around you. Don't send them pictures of the celebrity you sat next to on a flight, share a photo of your compost bin and challenge them to do better. Inclusion, commitment and enjoyment are three things that socialising these changes can bring.

Idea #20. Be aware of the wider implications of what you choose to eat, especially in more disadvantaged communities. 40% of the world's population lives on less than AUD\$2 per day. Yet the mix of subsidies provided to Australian beef farmers amounts of AUD\$2.20 per day per head of cattle. Ironically, over the cow's life this adds up to more than the animal sells for. It's bizarre, but true. When we value cattle over humans, the mix is wrong. It's another reason to reduce meat consumption – donate the difference to a charity making meaningful change in the developing world.

Idea #21. Start a community garden or a school garden. Beyond the social benefits that gardening brings, community gardens are focal teaching point to empower schools and neighbourhoods to share knowledge about sustainable food production and usage. They are also the best way to empower people in apartments to be a part of this movement for change.

Idea #22. Don't get bogged down in the value distinctions. Are you better off buying organic lamb from western Victoria, or conventionally-farmed lamb from the Hunter

Valley? Which has a more sustainable positioning. Better land management, or fewer food miles?

In the end, these are subtle and unimportant distinctions. The most important thing is to do something, and in part it's really your attitude that matters. If you taking a caring and interested position, then even if this decision might have had a better alternative, you'll be making good decisions on a more regular basis than you otherwise would have.

Idea #23. Even little bits count. Every step you take towards sustainable living makes a difference, no matter how small. It might seem that your decision to buy organic cucumbers is too insignificant to change anything. It's true, individually we are puny. But collectively, we are formidable. No one else will play their part unless you do too. Think of your decisions are part of a larger whole, and suddenly the meaning is clear.

Idea #24. Start a conversation. Involve your friends, family and neighbours in your efforts. Inspire them, and learn from them. You may be surprised by how much your network can teach you, and how effective you can be as an agent of change with simple face-to-face discussions. Perhaps you don't have enough waste for an effective compost, but together with your neighbour you do. Many elements of sustainable living are more effective in concert with others.

Idea #25. Don't give up. That's right, keep at it. You're not going to re-engineer your community, state or nation in a manner of months. But continuous action does pay rewards. Think of it like trying to lose the Christmas bulge. You won't look any different by the end of the first week in January, but by February 1st? It's up to you.

WHAT WILL I EAT?

Well, this is not an easy question to answer, because it requires us to make some assumptions. Assumptions about what decisions we are likely to make as individuals and households. Assumptions about what decisions the Federal government will make. Assumptions about the change in role local councils will play.

I consider myself to be an optimist, but also regard it as necessary to temper that with a degree of realism. As such, while I think we'll collectively solve many of the challenges ahead, some will outwit us.

I believe that a carbon price or tax on the ecological and environmental impact of agriculture is unavoidable. The simple fact is that Australia's agricultural sector creates 26% of our total greenhouse emissions, a figure comparable in other nations. Without addressing this quantum of pollution, we can't slow or stop climate change. As change is likely to be compelled through international agreements and our pragmatic desire to avoid humanity's demise, the on-flow into pricing must occur.

This one simple fact will transform Australian farming forever. As synergistic and organic farming methods become as cheap to practice as conventional methods (or cheaper), then environmental benefits will become the key delineation for farmers. If it costs no more to practice agriculture that maintains or improves the land, then the choice becomes simple. Australian farming will become more integrated, less mono-cultural.

Keep in mind that there is a limit to the amount of potash (the key source of potassium for fertilizer) on the planet. So much so that BHP last year identified Canadian Potash Corporation as a strategic takeover target, and even offered a 40% premium on their share price. The Canadian government, however, rejected the deal on national interest grounds. Everyone can see that we are running out of track on which to run the train of conventional farming. In time, only progressive and synergistic farming will be affordable.

Simultaneous, the earth has begun to reject fertilizer. Rarely discussed is the way in which the importation of nitrates, potassium and phosphorus into an ecology destroys the humus, that layer of earth in which the soils microscopic biology takes place. Growing plants is more than the simplistic NPK approach that Haber discovered. It's an ecology that needs bacteria, bugs, fungi and microbes, yet the fertilizers are poisoning these vital cohorts. We are seeing the effect of this in India and Russia where, after decades of intensive fertilisation in marginal farmlands agricultural outputs have now receded back lower than 1980 levels, and are still falling. The land has had enough.

Food will not be as cheap in 2111 as it is now. Get used to it.

I think it's more a case of the cost of food becoming realistically-priced rather than expensive. We must pay the true cost, including the environmental and social impacts. As a result we will become less accepting of waste and imperfections. I foresee a marketplace with higher quality foods, more refrigeration (despite the caloric cost of that energy), and a cooking culture about total resource usage. Think less Nigella Lawson, and more Bear Grylls with a frying pan.

There will be more preserved food, less imported, more seasonal foods as a direct result of our agriculture becoming more integrated. You won't find oranges in the shops in February, because no one will pay for them.

This increased cost of living will have on-flow effects for the pricing of other consumer goods. Electricals will become relatively cheaper, or risk losing market share. Housing prices will plateau as homes have less disposable income to spend on mortgages.

What about population? The economic boom of the 1940's and 1950's saw an explosion in the number of Australians. We are not likely to have a similar growth pattern on the back of improved national finances as our commodity-led economy is now a provider rather than a driver, but population will grow regardless. The huge number of older Australians will require an expanded population to provide the economic activity that will underpin their care and maintenance. Hence we will import workers – and our demographics will change as a result.

Expect more non-British Australians, and watch our food culture change in response. If fifty years ago you had been told that Vietnamese beef noodle soup would be available in most suburbs of Sydney, you would have laughed. Yet witness the rise of pho. If in 1970 I had told you that Australia's favourite midnight snack would be a doner kebab, you'd have fallen off your bar stool. Yet the facts are unmistakable. If in 1990 I had told you that Australians would prefer wine to beer, you'd have told me to lay off the sauce. Yet this change has already taken place. The decision of whether or not to change has been taken out of our hands.

This is the key character of an ecosystem – its change is self-governing and unstoppable. Knowledge is a virus: once learned it cannot be un-learned and continues to multiply, often in new and unforeseen ways.

Our community is just such an ecosystem.

The northern beaches will not experience population increase at the same rate as other parts of Australia. The particular geography of our zone makes that a certainty. Until the infrastructure needs of providing transport in and out of the peninsula are addressed, it is simply impossible to bring more residents in, despite the desire of successive State and Federal governments to do just that. They want us to grow, but without funding the facilities to enable that.

As such Warringah will not be exposed to the food pluralism that will define other parts of the country. But Warringah is a relatively affluent area, and will always pick and choose the parts of food culture in which it wants to indulge. But this is, as I observed earlier, treating food as a hobby, not a need.

You will have Laotian chicken curry for dinner, share a plate of Peruvian ceviche without a second thought, and nibble on Sri Lankan breads as though they were sliced white loaf.

But mostly you'll eat more synthetically adulterated, calories-rich and deconstructed processed foods. It's us versus the corporations, and at the moment the corporations have the upper hand. We can fight them in parts, but I think they'll still rule the food system in 100 years. Think I'm wrong, then help make a change.

What about the size of your food? Well, there's a tricky one. Despite the expense, we will continue to consume too many calories. As explained earlier, the food industry requires it. We will see a rise in heart disease, diabetes, strokes and renal diseases.

The rise of better farmers will not of itself make us better eaters.

So your dinner table in Warringah in February 2111 might look a little like this.

Yourself, your partner and your two children are in a slightly cramped room – housing density has made dining rooms a luxury, but one that affluent communities are loathe to give up.

A simple bowl of pasta will be topped with a can of vegetable-rich sauce that warms as the can opens (love that new technology). The vegetables were picked seasonally, but preserved through canning and with the addition of stabilizers, enzymes, bonders and emulsifiers. The sauce is mostly synergistically-farmed (the new organic), but the food has also been enriched with essential vitamins and minerals. The pasta has been treated with dense soluble fibre to help absorb unwanted calories from the diet, allowing us to eat the now-larger portion without putting on an undue amount of excess weight.

After the savoury course your family will go their separate ways to individual pods within the house – the ceremony of food sharing being over you retreat into the individuated trances that are now commonplace. 3-D hologrammic interactive gaming occupies the kids – they're playing against their holosphere friends from France tonight, in a battle scene so real that it even transfers the sensation of pain when a player is injured.

Between battles they snack on calorie-dense bars and drinks. Really, what has changed from 2011? Not much. Not the matter, only the manner. Entertainment through games and food has become the central and defining character of modern humans. The bars' labels say 'healthy' and 'energy-rich', but in reality they are simply compact transfer mechanisms for calorie distribution.

It's sad reality that sits in front of us.

But as I said, I'm an optimist. I hope, in the back of my mind, that either Mum or Dad has not turned on a screen, but has instead gone to the balcony to tend the small (but climbing) cucumber vine and to pick the now-ripe cherry tomatoes. Plump little rewards for the effort of growing, and the final reminder that we are human, and this is our human food.