

Part 2- CENTRAL VICTORIA'S GOOD FOOD ECOSYSTEM IN 2050

Melbourne has cemented its place as the world's most liveable city for each of the past five years. Victoria has also had a top three finish for the world's most liveable rural regions, with New Zealand's South Island, Tasmania and British Columbia its main rivals.

This has been largely due to the transformational change to the Victoria's Economy and Food System and partly due to Climate Change's devastating impacts on other regions around the globe.

This report investigates how Central Victoria's Food System has changed over the past 30 years for the various stakeholders that comprise the Good Food Ecosystem.

FARMERS

In 2020, farmers throughout the region were suffering declining margins and reducing yields. Despite the much larger areas per farm, productivity was poor due to soil quality, water availability, high labour costs and inefficient crop and livestock practices. When droughts hit, the situation was dire with many farmers forced to de-stock and face very poor yields. Suicides were rife, exacerbated by the high costs of seed, fertilisers, pesticides and herbicides.

The poor margins per hectare meant that large scale farming was really the only way to make a dollar. In turn, this increased exposure and stress to the natural variations in seasons. With Climate Change on the horizon, many farmers were in great fear about what their futures held for them. Farmer mental health was a major concern, particularly when the cost of insurance became prohibitive for many and they relied on Mother Nature's benevolence to spare them of extreme weather.

Farm gate prices had tight downwards pressure from the major supermarkets and the diversity of produce was limited to maintain manageable cost structures. With prices often being only 10% of the retail price, farming was a tough gig. Many farms whether livestock, crops or horticulture were monoculture farming. This coupled with high till practices lead to poor soil quality and poor resilience to drought and floods.

In 2050 these problems have all disappeared. There were many contributing factors that enabled small acre regenerative farming to be more profitable.

Use of Agtech to optimise soil, water, nutrients, topography, land use schedules and crop/livestock balances played a role. But the key was the new short supply chains that drastically reduced waste and also cut costs. The fact that consumers could order direct from farm with reduced handling costs whether in Melbourne, Victoria or other markets was a key driver.

‘Victorian Gold’ was how produce from the biodynamic Victorian soils was referred to overseas. A key discovery was how the soil biome, not only affected yields by improving resilience to disease, drought and flood but medical research had shown the direct link to benefits with the health of the human gut biome which in turn was shown to control the immune system.

As a result of the findings, farmers were able to get a good premium for soil farmed produce compared to even the best vertical farms and glasshouse hydroponic facilities.

Apart from the benefits to the bottom line from Agriculture, the lifestyle of farmers was one of the biggest transformations of the Ecosystems Revolution. In the early 2020s, attracting farm hands and farm managers was difficult and farmers were effectively working as slaves to the banks and Big Ag.

In 2050, farming’s now a career of great pride, joy and purpose. Farmers have been credited with saving humanity from the Climate and Ecological Crisis by ensuring both Food security and helping Victoria become one of the first Net Zero Economies through soil carbon sequestration.

Community has always been strong in the bush, but the establishment of Ecovillages and Ecohubs and smaller scale farming has created deeply connected and satisfying cross cultural communities. With the high speed mass transit systems, farming is no longer an isolated profession. It’s now very viable to run a farm 3 days a week and commute to the new smart cities or even Melbourne other days. With telecommuting, freelancing and lifelong e-learning opportunities, it’s easy to see why rural Central Victoria became a migration destination of choice for so many Australians and overseas Climate Migrants.

The other source of social wellbeing for farmers is the Agrotourism industry. Most farmers choose to live in the Ecovillage of their local agricluster. Each ecovillage typically has 200 residents who run 50 farms of 4 hectare (10 acre). Each farm has an offgrid 'tiny home' that's booked by tourists and volunteer farm hands seeking connection with nature. This regular flow of outsiders to the community not only creates an income but it adds to rich human connections. People getting together and sharing stories over meals of good food, wine and a connection with Mother Earth is a soulful experience that's such a big part of life in 2050.

PROCESSORS

Crop and livestock produce from farms is collected daily and sent to the EcoHubs for sorting grading and journey planning.

Some produce will make it direct to consumer's fridges in cities around the state. But most of it will be sent to the Food Processors to be value added before that journey. This keeps the food waste in the local economy so it can be reprocessed and fed to the livestock and soils.

In 2020 Food Processors were predominately large factories to have enough economies of scale to be profitable. High overheads with inefficient processes and under-utilised assets, meant these large factory processors required high levels of finance. The smaller artisan processors of higher value products also faced asset utilisation issues and their scale made it very expensive to get produce to consumers with the existing logistics system. Some artisan processors turned to Farmers Markets and direct supply to restaurants but most found this costly and time consuming.

The high cost of urban effluent treatment and transport made it difficult for Food Processors that were located in Melbourne to compete locally and internationally.

In 2050, these problems have largely been overcome with a shift to smaller decentralised food processing across the state. The large factories of mass production foods still exist, but the shift to smaller decentralised processors producing more nutritious food has been dramatic.

A significant new addition to Victoria's Food Manufacturing Sector has been the Bioprocessing industry. Microalgae, Mycelial and other fermentation products like Solein have added many low cost, low footprint products to Victoria's Food economy.

Like so many beneficiaries SHAARE has totally disrupted (for the better) the Food Processing sector. Shared assets and easier finance has made equipment and maintenance costs significantly lower. The lowering cost of transport and logistics associated with supply and delivery automation has cost jobs but created many benefits. The cost of waste has also dropped through better planning, shorter cold supply chains and waste reprocessing.

The biggest benefit however, has been the increased sales opportunities. Increased demand by export markets for Victorian produce has resulted in higher food prices despite the reduction in cost base. Food processing has been able to position its products to attract good premiums through product innovation and quality.

The transparency of the food supply chain has eliminated food fraud and given Victorian Food and Beverage processors opportunities to have a very broad spread of pricing. This has been seen in the Australian wine industry where bottles of red wine sell from \$3 to \$3000 a bottle, largely due to demand from wealthy Asian markets.

Our Ecohubs (the rural industrial processing zones) are booming as many Food Entrepreneurs set up operations. In particular the Food Incubator Clusters with the co-working and co-manufacturing spaces have lowered the barrier to entry to become a food processor. Shared manufacturing facilities with shared assets have enabled Climate Migrants opportunities at various scales of production to make the most of their skills, creativity, heritage. Ready access to nutritious ingredients enables them to produce amazing value added produce. The 'ready meals' market and 'preprocessing' markets have been standouts. Victoria is now the world's largest exporter of ready meals thanks to various shelf life extension technologies including High Pressure Pasteurisation (HPP).

The preprocessing business model gained momentum in the mid 2020s. Rather than producing end products for consumers, the preprocessors prepare

ingredients for the Food Processors, restaurants and caterers to add further value. These preparation processes range from peeling and cutting fruit and vegetables to preparing stocks, flavours and parcooked ingredients. In moving to a circular economy this was a key step in enabling better food waste management. Dealing with waste near the source and recycling back to regenerate the soils and produce biogas and biofertilisers has now become a major industry. (Refer Waste later)

Victoria's rich migrant history and multicultural society has enabled a diverse Food processing sector to thrive. The access to highly nutritious biodiverse ingredients and the establishment of the Food Incubator Clusters for process and product development and innovation, has created a cornucopia of food experiences for Australians and the wider world. Much of that cornucopia is full of biodiverse plant based foods.

At one stage as the Climate Crisis unfolded, it looked like Victoria's dairy, sheep and cattle industries would falter due to high methane emissions. A collaborative program lead by CSIRO and the Victorian and New Zealand Governments lead to the development of the seaweed feed supplement industry that is now a significant export product. The seaweeds impact ruminant gut efficiency and thereby reduce methane and increase yields. Studies also showed the importance of livestock grazing in regenerative ag. Consequently the dairy, sheep and cattle sector are now all Net Negative Carbon. Of course not all Ag investors fared well as the transition happened. Feedlot farming was banned in the mid 2020s through global legislation to reduce emissions and protect deforestation.

DISTRIBUTORS / FOOD SERVICE

In 2020 Food logistics was a huge contributor to road and rail traffic. There were many warehouses still using quite archaic material handling processes. These processes added significant cost and also contributed to work injury statistics. Traffic congestion and logistics efficiencies were big issues in 2020. Originally when ridesharing started in the 2010s, it was meant to reduce traffic and help the environment. It had the opposite effect. By 2020 with the addition of UberEats to the roads Uber had become a Climate Crisis problem.

In 2050 these problems had disappeared. Overall the Food Service industry shrank due to highly automated logistics systems running on the SHAARE platform with autonomous pick and pack and transport. There were however, many new entrants with niche distribution/food service models and the total number of businesses has risen, but overall turnover is now lower and this sector has lost many jobs.

The owners of the existing Food Service companies were able to turn them into more profitable businesses as their costs declined with a transforming economy.

The distributors now work in closely with the Waste processors, Retailers and the Food Charities to manage 'best-before' foods. Victoria was the first major industrialised region in the world to transition to a Zero Food Waste economy.

Many of the distributors that deliver to Food retailers and the Food preparers such as (restaurants, functions and caterers), now also collect 'best before' for redistribution to the Food Charities.

Similarly the waste food collection sector is an industry that didn't exist in 2020 other than cooking oils. Thanks to SHAARE it's now a very integrated and important part of Central Victoria's circular food economy.

WASTE /SECONDS PROCESSORS

In 2020, the Food Waste Processing sector was practically non existent other than the Food Charities.

In moving to a Zero Waste Circular economy, RegenVic's strategy included setting up effective handling facilities near to source for waste and seconds product.

In 2050 as food comes in from the farms it's sorted and graded locally at the Ecohubs rather than first transported to the Market hub at Epping in Melbourne. The grades that are not fit for premium food processing are streamed into seconds and waste for recycling. Seconds are mainly sent to Food Charity operations but some is purchased by Food Processors to create food ingredients such as soups, flavours and pasta fillings.

Improved tech and Food Safety testing and Quality Assurance ensure that all product destined for human consumption complies with legislative requirements.

The Waste streams are sorted into produce for animal feed and for reprocessing to biomulch and fermentation for bionutrients and biogas. The various bionutrients are analysed and supplied back to soil farms and the hydroponic, glasshouse and vertical farm operations in the Ecohub precincts.

FOOD CHARITIES

In the 2020s the socioeconomic divide had created an underclass and Victoria had one of the highest levels of homelessness in the OECD. Primary causes were affordable housing and societal dysfunction that manifested in domestic violence, mental health and substance abuse.

In 2020 there were four main Food Charities working to alleviate the stresses and malnourishment of Victorians. Foodbank Vic, Second Bite and Oz Harvest distributed food directly. FareShare's kitchens processed seconds ingredients into ready meals by volunteers so they could be supplied at no cost to the Charities working with Victorians doing it tough.

In 2020 despite massive quantities of waste going to landfill, these organizations were starved of produce to meet the demand.

In 2050 this is no longer an issue and Australia is an exporter of ready meals and other foods to the disadvantaged in other countries. This shift was partly due to reduced demand with less societal dysfunction due to improved levels of purpose and happiness as people reconnected with simple lives and nature. Another big factor was the supply of affordable housing in rural ecovillages including safe zones for women and children fleeing domestic violence. People who had previously relied on handouts were able to set themselves up as food workers and food entrepreneurs.

Improved food management and the SHAARE supply chain enabled seconds for Food Charities to be much more effectively distributed to the Food Charities for on supply.

SUPERMARKETS

In 2020 the Supermarket sector consisted of the first tier players of Coles, Woolworths, Aldi, IGA (Metcash) and second tier players like Leos Fine Foods and The Leaf Store. Aldi's entry to the Australian market had created downward price and profit pressures. Since this change the trend was to enhance customer experiences and reduce labour costs through systems and technology.

Slow uptake on home delivery and inefficient logistics systems made retail a very tough and competitive space.

In 2050 the Supermarket space was one of the sectors of Victoria's food system that was disrupted the most due to democratization of the economy and the launch of SHAARE. With the disruption of logistics and transport it no longer makes sense for consumers to carry groceries home.

The Convenience outlets that Coles and Woolworths created as Joint Ventures with Shell and Caltex are no longer petrol stations. They have become our last mile pick hubs and convenience stores. The larger supermarket stores are now destinations for food grazing and product tastings with convenience sections for immediate supply. These venues now host ethnocultural events (eg Ethiopian, Nepalese and Chilean) featuring different nationality foods and health lifestyle events (eg.FODMAP, Gluten Free, Vegan).

These first and second tier supermarkets have now all become catalogue aggregators and pick-and-pack sorting hubs for online grocery shopping.

The range of products stocked is much larger, but products are only displayed as single packs with QR codes that people who like to see what they are buying can shop physically to their e-trolley and have goods delivered direct to home.

A new third tier of 'niche long tail' supermarkets have cropped up that are permanently hosting ethnocultural and lifestyle good food stores. These stores also stock extensive niche ranges of QR coded stock.

Facing declining profits from the increased competition from these third tier market entrants, the supermarkets repositioned their business models as Food Aggregators for export. Coles and Woolworths now operate Australian

produce Supermarkets throughout the world as both physical 'niche long tail' stores and online stores. Of course, they still face competition overseas with many startups competing as niche Australian food exporters, such as the Victorian Honey Gold company. However, the early mover advantage and their strong financial backing have enabled them to successfully pivot their business to thrive as the transition unfolded.

RESTAURANTS /CAFES /PREPARERS

In 2020, the hospitality sector was a very big employer and was the sector with the highest number of business failures. Many businesses were prosecuted for paying staff below award wages due the high level of competition and high overhead and operating costs. The entry of UberEats to the market put further stress on many businesses. While some found the added volume improved their turnover, many found that the high additional costs were building Uber's profitability rather than their own.

The dark kitchen experiment was pioneered by Deliveroo but dominated by Uber. This is where restaurants set up in shipping containers within warehouses to cook meals that could only be ordered through Uber worked for some restaurants but many failed due to the cost structures.

In 2050 with SHAARE, Asset sharing and EV autonomous delivery is in full swing, the delivery side of restaurants businesses is working well and supporting many microbusinesses that otherwise would not be around.

With more free time and richer consumer food experiences, the hospitality industry is thriving. Gathering with friends and family in Restaurants and Cafes is Victorian's favourite recreational activity. This demand sustains a healthy industry and is one of Victoria's major employers as we moved to a service economy.

While some consumers enjoy preparing meals at home, for most it's now an outsourced activity and Restaurants, Cafes and the Food Processors have been the winners as consumers continue to be happy to pay for convenience and food experiences.

Function events and inhome catering are also thriving thanks to more efficient systems and the high quality and diversity of food available.

CONSUMERS

In 2020, many consumers in Melbourne and wider Victoria were 'foodies' who enjoyed good food and beverage experiences as one of their main entertainment activities.

Affordability was however a significant issue for many and the cost of food particularly for the socioeconomically disadvantaged was a big problem.

Consequently people were making very poor health choices and obesity, diabetes, heart disease and lack of micronutrients was putting strain on Victoria's Health services.

In 2050 we as consumers now are clearly enjoying a much better outcome than the futurists were forecasting.

As the Omnicrisis hit and drought, floods and fires and decreasing farm yields pushed food prices 'through the roof', there was talk that more and more Victorians would be end up facing food insecurity and reduced nutrition. This increased anxiety further worsened health and wellbeing outcomes with mental health problems soaring in the mid 2020s.

Thankfully the outcome has been very different as things started to turn by the late 2020s as RegenVic's outcomes started to create tangible societal outcomes.

We now enjoy food as a central part of our lives, not just as something to ingest. Food has become once again a rich, nutritious and wholesome part of our more connected lives. The increase in community with Good Food and Drink as the centrepiece has been one of the most dramatic changes of the Transition.

The other big wellbeing benefit has been how technology coupled with good food has dramatically reduced disease and increased our wellbeing resilience. The mapping of personal genomes and the discovery of links between soil biomes and our gut biomes and immunity systems have enabled us to use food

as a key preventative medicine, just as Hippocrates advised in 400BC “Let Food Be Thy Medicine”. We now enjoy the benefits of custom diets rich in micronutrients and microbes that are tailored to our own personal genome.

RESEARCH / SCIENCE

In 2020, Victoria had a reasonably strong food research, science and innovation base. CSIRO and the network of Co-operative Research Centres (CRCs) created a good foundation for some of the innovation needed. This was however in 2020 underfunded and the track record on commercialisation was poor.

In 2020 emerging Agtech ecosystem was looking promising but had not yet delivered many outcomes. Compared to countries like the Netherlands that had well established Food collaboration ecosystems, Victoria was lagging.

In 2050 those Dutch lessons coupled with the influx of investment funds brought by RegenVic saw a surge in Agtech initiatives. Many of these created wealth for their founders through acquisition and incorporation in SHAARE.

POLICY MAKERS

Local and State Governments were earlier movers in enacting the policies and legislation needed. Urban and Regional Planning was a key example. The news was not so bright at a Federal level.

Once the tide turned and Federal Politicians could see that they had no choice but to back smart policy ahead of vested lobbying policy.

CSIRO and the CRCs were recipients of the funding needed to steer Australia on the path to a thriving economy. At one stage the 2019 CSIRO National Outlook report with its two pathways for the Country’s future, very much looked like we were taking the path of slow decline. Thankfully deep democracy won out and...the rest is history.

Isn’t it great to be living in the Victoria we created rather than apocalyptic future many feared in the mid 2020s?