

FOOD SECURITY AND THE GROWING NETWORK

Feeding the Villages

From the capital to the coast.

The evidence on how well the region can feed itself, the Institute's food security plan for its own sites, and a network of gardens, farms and orchards planned around what a healthy plant-based family needs.

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Cover: still from the Feeding the Villages film, an illustration, not a design of any site.

01 · AT A GLANCE

The region cannot feed itself, yet

This report brings three pieces of work into one: the evidence on the food system from the Canberra basin to Narooma, the Sun Villages Institute's food security plan for its own sites, and a growing network that feeds a healthy plant-based family from three different climates.

144 ha	of vegetables, fruit and vines across the ACT, Queanbeyan-Palerang and Eurobodalla in 2020-21. 98 per cent of farmed land is grazing. VERIFIED
6 to 9 days	Narooma went without a normal food supply in January 2020, when fire cut both highways and the power. INFERRED
1 in 3	Australian households ran short of food in 2026. Regional households are worse off. VERIFIED
4 in 10	Narooma residents are over 65. Older people living alone lose food access first in a shock. VERIFIED
3 layers	on every site: daily food, seasonal stores and a shock reserve of 14 days now, 30 when the Commons opens, 90 as a tested target.
$15,000	or less starts it: stage 0 inside existing buildings, with no debt at any stage. ASSUMED

THREE PARTS, ONE REPORT

Part A. The evidence. Strengths, weaknesses, the shock record and the outlook to 2040.

Part B. The food security plan. Three layers of food on every site, run on the village exchange.

Part C. The growing network. What each of the three regions grows for a healthy plant-based family.

Every finding carries a label

The work was built on 3 and 4 November 2026 from public sources. Section numbers carry their part letter, so a reference to section B9 means Part B, section 9.

Label	What it means
VERIFIED	Seen in the named source.
INFERRED	Follows from verified facts.
ASSUMED	A working assumption to test.
GAP	No usable source found.

READ THIS FIRST

Nothing in this report replaces advice from a dietitian for any individual. Yields for some crops in Part C come from elsewhere in NSW until the network's own year-one trials (section C9) report local numbers. Every cost is an estimate until it is priced by a quantity surveyor or supplier.

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Illustration of a shared village meal, not a design of any site.

00 · OVERVIEW

The whole report on one page

What this report is

- One document, three parts, built on 3 and 4 November 2026 from public sources. Every finding carries a label: VERIFIED seen in the named source, INFERRED follows from verified facts, ASSUMED a working assumption to test, GAP no usable source found.
- Part A. The evidence. How resilient the food system is from the Canberra basin through Queanbeyan-Palerang to Narooma: strengths, weaknesses, single points of failure, the shock record since 2019 and the outlook to 2040.
- Part B. The food security plan. What the Sun Villages Institute does about it at its own sites: daily food, seasonal stores and a shock reserve, run on the village exchange, with costs, stages and risks.
- Part C. The growing network. How the villages become a network of food-growing projects that feeds a healthy plant-based family, region by region: nutrition targets, land per person, crops, permaculture layout, companion planting, bush foods and climate resilience for the Canberra basin, the Southern Tablelands and the far south coast.
- Section numbers carry their part letter (A3, B5, C4). A reference to "section B9" means Part B, section 9.

What the evidence shows

- The region cannot feed itself. The ACT, Queanbeyan-Palerang and Eurobodalla together had about 144 ha of vegetables, fruit and vines in 2020-21; 98 per cent of farmed land is grazing. VERIFIED (ABS 2020-21, section A3)
- Every supermarket from Canberra to Narooma is stocked by truck from western Sydney, and nobody publishes how many days of food the shelves hold. VERIFIED GAP (section A3)
- Narooma lost its normal food supply for roughly six to nine days in January 2020 when fire cut both highways and the power. INFERRED from dated reports (section A4)
- One in three Australian households ran short of food in 2026; regional households are worse off. No council in the region has a funded food plan, and the national strategy is not due until mid 2027. VERIFIED (Foodbank 2026; sections A6, A7)

- The region's people are old. About four in ten Narooma residents are over 65. Older people living alone, and those without a car, lose food access first in a shock. VERIFIED (section A6)
- Four nutrients never come from the land on a plant-based diet: vitamin B12, long-chain omega-3, winter vitamin D and reliable iodine. They are a fixed supplement line in the plan, not a garden problem. VERIFIED (section C2)
- Labour, not land, is the binding constraint on home-grown food. The only measured Australian figure is about 6 hours per square metre per year. VERIFIED (McDougall et al, section C3)
- Local yields are measured from the first season. The year-one trials in section C9 build the network's own numbers for each region.

What the Institute does

- Three layers on every site (Part B): daily food from gardens, orchards and the cafe; seasonal stores (root cellar, cool room, preserving kitchen) bought in season at farm price; a shock reserve of 14 days now, 30 when the Commons opens and 90 as a tested target, turned over weekly so nothing expires.
- Each region grows what it grows best (Part C):
  - Canberra basin and Young Street: the fresh food (greens, herbs, berries, mushrooms, sprouts), the stores, the kitchen, the seed bank and the exchange.
  - Southern Tablelands near Bungendore: the protein and the calories (faba bean, field pea, lupin, oats, potatoes, pumpkins, onions, garlic, hazelnut, chestnut, walnut, apple). The only region where a plant-based family's land budget closes.
  - Far south coast at Kianga: the second season (sweet potato, cowpea, citrus, avocado, macadamia, banana in shelter, finger lime, lilly pilly, Davidson plum, warrigal greens) and seaweed for iodine under the NSW rules.
- What moves and what stays. Seed, dry pulses, grain, nuts, oil, preserves and knowledge move between sites. Fresh food stays where it grows; the coast and the tablelands are about 200 km apart by road and both roads have closed in the last six years.
- The exchange. One credit for one hour, no interest, member to member, with businesses on the dollar side so it stays lawful under the ATO barter ruling and the NSW Food Act. Every hour and every harvest is logged.
- The Food Lab, built in stages. Stores, kitchen, mushrooms and seed bank first; LED greens last, and only if metered data shows they pay.
- A node, not the convenor. The Institute aims to work alongside the groups already feeding the region, such as Southern Harvest, SAGE, SHASA, the relief agencies and Meals on Wheels. It does not try to run the regional food system.

What it costs to start

- Stage 0 of the food security plan is under $15,000 inside existing buildings: a resident survey, the reserve, a weekly shared meal, a growers' table and a 30-account exchange pilot. ASSUMED (section B9)
- Year one of the growing network is soil tests, harvest logging and five crop trials, funded from the same stage 0 line and small grants. INFERRED (section C8)
- No debt at any stage. Capital items wait until the cash or grant is in hand.



PART A

The evidence

How resilient is the food system from Canberra to Narooma?

Strengths, weaknesses and single points of failure across the ACT, Queanbeyan-Palerang and Eurobodalla, the shock record since 2019 and the outlook to 2040. Every finding carries a label and a source.

A1 Findings · A2 Scope, definitions and method · A3 The region's food system today · A4 Shock record 2019 to 2026 · A5 Strengths and weaknesses by function · A6 Area profiles · A7 Outlook to 2040 · A8 Evidence register

Findings

IN SHORT

The food system serving the Canberra basin, Queanbeyan-Palerang and Eurobodalla copes with price shocks and short demand spikes. It does not cope with anything that closes the Hume, Kings or Princes Highways or cuts grid power for more than a day. It was tested once at scale, in December 2019 and January 2020, and the coastal end failed within days. Nothing found in this research shows the structural causes have been removed since. INFERRED from the verified shock record in Section A4

The system in ten bullets

1. Almost all food eaten in the three areas is grown and processed elsewhere. ACT farm output was $9.37 million in 2020/21 for a population then near 454,000, and the ACT Government states the Territory "is highly reliant on food produced elsewhere and will continue to be for the foreseeable future" (ABS Value of Agricultural Commodities Produced 2020-21; ACT QTB 21, 2024). VERIFIED The often quoted "over 95 per cent from outside the region" is an advocacy estimate by the Canberra Region Food Collaborative, not a measurement (ACT Food Hub Feasibility Study, SGS 2026). VERIFIED
2. Every supermarket banner is supplied by road from Sydney distribution centres 250 to 330 km away: Woolworths Moorebank (opened 13 November 2025) and Wetherill Park, Coles Kemps Creek (opened 6 August 2024, serving 229 NSW and ACT stores), Aldi Prestons and Metcash Huntingwood, with Woolworths ambient groceries for Canberra also coming from Wodonga (Woolworths Group 2025; Food and Drink Business 2024; Canberra Times 2020). VERIFIED Coles closed its Goulburn DC on 5 October 2021, removing the only grocery DC inside the corridor (Goulburn Post 2021). VERIFIED Road distances are approximate. INFERRED
3. No published figure exists for days of stock held in any store or distribution centre serving the region. The only household figures are 3 to 5 days held by 95 per cent of households against 14 days recommended (AFGC, 2009), and later guidance of about two to three weeks (Australian Food News 2009; The Conversation 2022). VERIFIED GAP (days of stock)
4. The coastal end of the system has already failed once. Narooma's Woolworths closed from New Year's Eve 2019; escorted food and fuel trucks were first reported entering Eurobodalla on 6 January 2020; Meals on Wheels resumed deliveries on 9 January "after supplies arrived" (ABC via inkl 2020; The Beagle EOC updates 2020; The Beagle May 2020). VERIFIED That is roughly 6 to 9 days without supermarket supply, worked out from dated reports because no source gives the reopening date. INFERRED
5. The failure chain is power, then payments and cold chain, then roads, all at once. Eurobodalla's electricity "depends on two 132kV lines from the north"; about 85 per cent of its 2019/20 telecommunications losses were caused by power outages; EFTPOS and fuel pumps failed; the same fires closed the Princes, Kings and Snowy Mountains Highways together (ESC Royal Commission submission 2020; ESC Report to Council 2022; Royal Commission 2020). VERIFIED
6. Production across the three areas is grazing. ABS counted 205,635 ha of holdings, 98 per cent under grazing, with 144 ha of vegetables, fruit, nuts and vines combined, and gross value of $75.4 million, 45 per cent of it cattle (ABS Agricultural Commodities 2020-21; ABS Value of Agricultural Commodities Produced 2020-21). VERIFIED summed from LGA rows Oysters add about $13.8 million at the farm gate across the Clyde, Wagonga and Tuross estuaries in 2024/25 (NSW DPIRD Aquaculture Production Report 2024-25). VERIFIED summed from estuary rows
7. Processing has been stripped out. No abattoir operates in the ACT, QPRC or Eurobodalla on any list found; the last ACT milk plant (Canberra Milk, Griffith) closed after a February 2023 announcement; Buttercup Bakeries moved production from Fyshwick to Moorebank; no cold storage or aggregation hub exists; and the ACT's own

hub study found that 10 of 22 Australian food hubs it identified have closed (australianabattoirs.com list 2017; Canberra Times 2023; ACT Food Hub Feasibility Study 2026). VERIFIED

8. Food relief is overwhelmed and itself depends on Sydney. 37 per cent of ACT clients were first-time users in 2025, the highest rate in Australia; Queanbeyan is "a major hot spot"; OzHarvest has 22 agencies waitlisted; Foodbank items reach Canberra pantries from Glendenning in western Sydney with an ACT Government freight subsidy (Region Canberra 2025; ACT Food Relief Action Plan 2026). VERIFIED
9. Governance has stalled at every level. The ACT stated in August 2025 that no further Local Food Strategy actions were being delivered "due to competing priorities and resource constraints"; QPRC and Eurobodalla have no food security strategy; the Canberra Region Food Collaborative shows no activity since RDA ACT merged into RDA Southern NSW and ACT on 1 April 2024; the national Feeding Australia strategy is not due until mid 2027 (ACT QON 267, 2025; QPRC Operational Plan 2025-2029; Eurobodalla Delivery Program 2025-29; RDASNA 2026; DAFF timeline 2026). VERIFIED
10. The people most exposed are old, car-dependent and coastal. Eurobodalla was about 33.8 per cent aged 65 and over (13,896 people) in 2024; Narooma about 39 per cent, with 40.4 per cent lone-person households and 7.9 per cent of dwellings without a vehicle; Eurobodalla Meals on Wheels had 180 clients in 2021 (City Population 2024; gdp.com.au Narooma 2021; The Beagle 2021). VERIFIED

The ten biggest weaknesses, ranked

1. Single-corridor road dependency. The Kings Highway over Clyde Mountain closed for about five weeks to 14 January 2020, then for tree removal in 2021 and 2023, and is under one-lane landslip repair from 9 February 2026 for six months; the Princes Highway's Moruya bypass has no construction funding and the Narooma bridge is at feasibility stage only (Canberra Times 2020; Transport for NSW Kings Highway recovery 2026; Transport for NSW Moruya bypass 2024; Transport for NSW Princes Highway program 2025). VERIFIED
2. Power-dependent food retail and fuel with no mandated backup. Eurobodalla Council told the Royal Commission that governments should assist with "alternate power supply - for fuel service stations, major food retailers and aged care facilities"; in 2022 it reported that "Only a small proportion" of those businesses had acted (ESC Royal Commission submission 2020; ESC Report to Council 2022). VERIFIED No NSW regulation requiring backup power was found. GAP
3. No stock data and no food supply contingency plan at any level. Neither the Eurobodalla LEMP, the ACT, QPRC nor the Commonwealth publishes a days-of-supply standard; the Royal Commission and NSW Bushfire Inquiry set none (Eurobodalla LEMP 2023; Royal Commission 2020; NSW Bushfire Inquiry progress report 2023). VERIFIED
4. Food relief at breaking point. Two thirds of ACT providers reported a 25 per cent rise in users in 2025 over 2024; pantries spend $8,672 a month on groceries; only 30 per cent receive any government funding; the ACT's 2026 plan was called a "food relief inaction plan" in the Assembly (CityNews 2026; ACTCOSS 2026; Region Canberra February 2026). VERIFIED
5. Near-absence of local processing. No abattoir, no cold store, no milk plant in the ACT; Cootamundra went export-only in 2014; 80 per cent of NSW smallholders "have lost or are at risk of losing abattoir access" (Canberra Times 2015; AFSA 2026). VERIFIED
6. Tiny horticulture and insecure land. 144 ha of vegetables, fruit and vines across 205,635 ha; Majura Valley farmers without secure leases since 2005; the Western Edge investigation covers 9,800 ha of rural lease land; ACT Land Management Agreements "are outdated and do not support daily farming decisions" (ABS 2020-21; Canberra Times 2023; ACT SoE 2023; ACT CED1H~3, 2024). VERIFIED
7. Governance vacuum. The ACT strategy has produced studies but no built infrastructure, no released baseline and no land allocated; the one land outcome (Dairy Road to Southern Harvest) displaced Canberra City Farm; councils are silent on food; the CRJO frames food as waste (ACT QON 267, 2025; Canberra Times July 2026; CRJO Resilience Programs). VERIFIED with the pattern inferred

8. Water fragility in the food towns. Bungendore's bore allocation was cut from an estimated 630 ML a year to 216 ML a year in 2021, one bore has been offline for PFAS since October 2024, and the $78 million pipeline was refused National Water Grid funding in May 2026; Braidwood's Shoalhaven River stopped flowing in December 2019 and the town trucked water for months (QPRC pipeline factsheet 2025; QPRC pipeline page 2026; Region Canberra January 2020). VERIFIED
9. An ageing, car-dependent population with thin home-delivered meal coverage. About 5,500 Eurobodalla residents were 75 or older in 2021 against 180 Meals on Wheels clients; 70 per cent drive to work; summer visitors treble the population on the same single highway (ABS QuickStats Eurobodalla 2021; The Beagle 2021; Eurobodalla LEMP 2023). VERIFIED the ratio is inferred
10. Biosecurity and input shocks arriving together. Varroa affects about half of Canberra's 6,000 hives and is expected to reach every hive by the end of 2027; avian influenza cut egg supply in 2024/25; national diesel cover stood at 34 days on 27 October 2026 after a fuel shock that saw regional stations run dry in March 2026 (Region Canberra October 2026; Mulloon Institute Annual Report 2025; fuelplan.gov.au October 2026; Region Canberra March 2026). VERIFIED

The strongest assets, ranked

1. Tablelands-to-coast complementarity. The coast has 35 to 50 per cent more rain (Moruya Heads 955 mm, Narooma 923 mm against Canberra Airport 637 mm) and a July minimum 4 to 6 degrees warmer, carrying the region's dairy (Eurobodalla 2,674 cows) and oysters, while the tablelands carry beef, lamb, wool and eggs (BoM climate averages 2026; ABS 2020-21). VERIFIED the complementarity itself is inferred, no source models it
2. Social capital that has already fed people in a crisis. Southlands Fruit and Vegetables "was reportedly the only shop open in the area" in the fires; Rotary and Lions cooked for thousands at Narooma; Tilba Dairy supplied about 10,000 litres of milk locally when roads closed; St Benedict's delivered to Nerriga (Narooma News 2024; Narooma Rotary 2020; Region Canberra 2023; St Benedict's). VERIFIED
3. Farmers' markets with real scale. The Capital Region Farmers Market runs about 100 stalls and roughly 7,000 customers each Saturday; SAGE at Moruya, Braidwood, Bungendore and Tilba markets all operate; 80.1 per cent of ACT consumers surveyed buy local food "to support the community" (Region Canberra 2025; CRJO; ACT CED1H~2, 2025). VERIFIED
4. A farmer-led cooperative with a cost structure in print. Southern Harvest runs a 13-week CSA box scheme, markets and a store, pays farmers 100 per cent of produce cost plus "approx 35-40% on top" for administration, packing and distribution, and won the Dairy Road, Fyshwick EOI in 2026 (Southern Harvest produce boxes 2026; Canberra Times July 2026). VERIFIED
5. Oysters and estuary stewardship. Wagonga Inlet produced 331,323 dozen worth $4.25 million in 2024/25; QX was not detected in Wagonga or Tuross across three summers of surveys; the Narooma Oyster Festival drew 10,500 people in May 2026 (NSW DPIRD 2024-25; FRDC 2026; Narooma Oyster Festival 2026). VERIFIED
6. Canberra's urban water security and the new coastal storage. 278 GL across four dams on three catchments, 93.2 per cent full on 23 December 2025; Eurobodalla's 3,000 ML Southern Storage dam wall completed December 2025 (Icon Water 2025; Braidwood Times 2025; ESC December 2025). VERIFIED
7. A surplus of red meat and eggs within reach. 50,629 meat cattle and 163,855 sheep across the three areas; Mulloon Creek Natural Farms ran 28,700 hens in 2024/25 with demand that "outstrips supply"; Hilltops produces 10.47 million dozen eggs within about 200 km (ABS 2020-21; Mulloon Institute Annual Report 2025). VERIFIED
8. Policy footholds that exist on paper. The ACT found a micro-abattoir "appears feasible in the ACT under current planning frameworks"; its Food Relief Action Plan commits to "Explore and support the establishment of a shared warehouse model to increase cold and dry storage capacity"; the SGS hub study recommends a two-phase hub (act.gov.au strategy page; ACT Food Relief Action Plan 2026; SGS 2026). VERIFIED

9. Hard-won emergency infrastructure since 2020. Independent power at Eurobodalla evacuation venues; SHASA solar and battery havens at Narooma CWA, Tilba Halls and Moruya CWA; telecommunications tower backup raised from 4 to 12 hours; a NSW Mobile Generator Deployment Strategy endorsed December 2021 (Eurobodalla Climate Action Plan 2022-32; The Beagle 2022; ESC Report to Council 2022; NSW Bushfire Inquiry progress report 2023). VERIFIED
10. Pockets of independent retail. IGAs at Bungendore, Braidwood, Moruya and Malua Bay; Southlands at Moruya and Narooma; Captains Flat's first grocery store in 15 years opened in 2026; independents buying from Sydney and Melbourne markets reported "we don't have supply issues" in January 2022 (council and local listings; Region Canberra October 2026; Canberra Times January 2022). VERIFIED

Single points of failure

- Kings Highway at Clyde Mountain: three landslips on one 580 metre stretch since the 1950s, two Murrengenburg slip sites from March 2021 flooding still under repair in 2026, and a detour via Cooma that doubled the trip in 2013 (Canberra Times 2013; Transport for NSW 2026). VERIFIED
- Princes Highway through Milton-Ulladulla, Moruya and the Narooma bridge: bypass construction "tentatively late 2028" at Milton-Ulladulla, Moruya unfunded at "more than $1.7 billion", Narooma bridge at feasibility only (Transport for NSW 2026; 2024; 2025). VERIFIED
- The Hume Highway at both ends for Canberra: all three major banners draw from Sydney or Wodonga with no intermediate DC since 2021; a closure at both ends would isolate major-chain supply within days (inferred from the DC evidence; no source quantifies it). INFERRED
- Two 132 kV transmission lines into Eurobodalla (ESC Royal Commission submission 2020). VERIFIED
- The Cotter catchment, which supplied 84 per cent of Canberra's water in 2024/25 and whose Corin sub-catchment was 99 per cent burnt in 2020 (Icon Water 2025; ACT SoE 2023). VERIFIED
- Deep Creek Dam and the Northern Water Treatment Plant, on which the whole shire "relied solely" in 2020; partly mitigated by the Southern Storage from 2026 (ESC Royal Commission submission 2020; ESC 2025). VERIFIED
- Bungendore's fractured-rock bores at 216 ML a year with no funded alternative (QPRC pipeline page 2026). VERIFIED
- The Moruya abattoir run for Bungendore's butcher, which crosses Clyde Mountain every Monday (Canberra Times 2015). VERIFIED dated
- Fuel trucked by tanker from Port Kembla and Sydney, with EFTPOS and bowsers dead when power fails (ESC Royal Commission submission 2020; Royal Commission 2020). VERIFIED
- Araluen Road for the valley's two surviving orchards, closed to trucks from October 2020 with repeated failures to May 2023 (Region Canberra 2021; ESC Araluen Road page 2024). VERIFIED

What this means for a village network of older residents

- Plan Kianga for 7 to 14 days of isolation and Queanbeyan and Bungendore for a shorter but real cut if the Hume closes at both ends. The documented Narooma outage was about 6 to 9 days; the Kings Highway was shut for about five weeks; the Deputy Premier forecast at least a month (ABC via inkl 2020; Canberra Times 2020). VERIFIED the planning range is inferred
- Treat cold-chain backup power as the first engineering requirement. Meals on Wheels Eurobodalla lost three freezers and about $20,000 of food in January 2020; a closed refrigerator holds safe temperature for about four hours without power (The Beagle 2020; Ready.gov). VERIFIED
- Do not rely on formal relief at Kianga. Narooma's relief is Monty's Place (over 60 free meals a week) and OzHarvest hampers from a motel kitchen; the shire's Anglicare hub and main pantry are 51 km away in Moruya (NRMA 2024; Narooma News 2021; Anglicare). VERIFIED For the 7.9 per cent of Narooma households without a car, that distance is a barrier. INFERRED

- Expect thin and changing aged-care meal funding. Support at Home started 1 November 2025; the Commonwealth Home Support Programme that funds most Meals on Wheels meals "will transition no earlier than 1 July 2027"; Meals on Wheels Australia sought urgent fuel-cost funding in April 2026 (Department of Health 2026; Meals on Wheels Australia 2026). VERIFIED
- The sites are not close. Young Street Queanbeyan to Kianga is about 124 km in a straight line and roughly 210 km by road over Clyde Mountain. INFERRED from mapped distances
- A 90-day village store exceeds every official household target found (3 days in Queensland guidance, "one week and beyond" in Tokyo guidance) and should be justified as a community resilience asset for corridor cuts, run on a rolling-stock method (Queensland Get Ready; Tokyo Stockpile Navi). VERIFIED the design rule is inferred
- Older residents are the group with the lowest measured food insecurity nationally (19 per cent of households headed by someone 55 or older, 11 per cent severe) but the highest exposure to a logistics failure, because they are the most car-dependent and the least mobile (Foodbank Hunger Report 2026; Healthy Ageing in the ACT 2026). VERIFIED the exposure judgement is inferred

Scope, definitions and method

The three areas and the corridor

- Area 1, the ACT and Canberra basin: the Australian Capital Territory (489,700 people at 31 March 2026) plus its immediate NSW hinterland at Hall, Murrumbateman and the Yass district (ABS National, state and territory population 2026). VERIFIED
- Area 2, Queanbeyan-Palerang Regional Council (QPRC): about 5,300 square kilometres including Queanbeyan, Jerrabomberra, Googong, Bungendore, Braidwood, Captains Flat, Araluen, Majors Creek, Nerriga and the Lake George district; 67,633 people at 30 June 2025 (economy.id QPRC; City Population QPRC). VERIFIED
- Area 3, Eurobodalla Shire with a focus on Narooma and surrounds (Kianga, Dalmeny, Central Tilba, Bodalla, Tuross Head), Moruya as the agricultural and market centre, Batemans Bay as the retail and highway hub, and Bermagui as the neighbouring supply town; 41,309 people at 30 June 2025 (City Population Eurobodalla). VERIFIED Council's own 2025 snapshot gives 42,392 (Eurobodalla Delivery Program 2025-29). VERIFIED the two figures differ by source
- The corridor: the Hume, Federal and Barton Highways into Canberra; the Kings Highway (about 137 km, Canberra to Batemans Bay via Bungendore, Braidwood and Clyde Mountain); the Princes Highway from Sydney through Nowra, Milton-Ulladulla, Batemans Bay, Moruya and Narooma; and the Snowy Mountains Highway over Brown Mountain as the third route to the coast (Transport for NSW Kings Highway; SEATS 2017). VERIFIED
- The Sun Villages Institute sites referenced in this report are Young Street Queanbeyan, a site near Bungendore and Kianga near Narooma. Straight-line distances from Young Street: Bungendore 22 km, Braidwood 52 km, Batemans Bay 94 km, Moruya 99 km, Kianga 124 km. INFERRED from mapped distances

The definition of resilience used

- This report uses the Tendall et al (2015) definition as quoted by Bullock et al (2017): the capacity over time of a food system and its units at multiple levels to provide sufficient, appropriate and accessible food to all, in the face of various and even unforeseen disturbances (Bullock et al 2017 via CORE). VERIFIED as quoted
- It is operationalised with the FAO 2021 agrifood resilience capacities (prevent, anticipate, absorb, adapt, transform) and indicator logic (sourcing flexibility, route redundancy, detour cost) and the UK Food Security Report 2024 Theme 3 structure (input dependencies, movement of goods, business resilience) (FAO SOFA 2021; UK Food Security Report 2024). VERIFIED
- No Australian government document defines food system resilience. Feeding Australia adopts the FAO definition of food security; CSIRO's 2023 roadmap names resilience without defining it; the Royal Commission used a three-question supply chain test (DAFF rationale page 2026; CSIRO Futures 2026; Royal Commission 2020). VERIFIED
- Béné et al (2023) find capacity-based frameworks "ill-designed for national-level system analysis" and that district-level analysis "seems more feasible", which supports measuring at LGA and corridor scale (Béné et al 2023). VERIFIED

What the evidence labels mean

- VERIFIED: the figure or wording was seen in the named source on 3 or 4 November 2026, or on the date the source states.
- INFERRED: follows from verified facts; the bullet says from what. Sums of ABS rows, distance calculations and the Narooma outage duration are the main examples.
- ASSUMED: a working assumption the plan must test. Used sparingly, mainly for days of stock.
- GAP: no published source was found for the figure.

Notes on the evidence

- Days of stock: no Australian government, CSIRO or industry source read gives a days-of-supply figure for supermarket stores or distribution centres. Every days-of-stock statement in this report is labelled ASSUMED or GAP. GAP
- Some foundation figures are old. The Eurobodalla land capability and farm structure analysis dates from 2015; the Palerang agriculture papers from 2015 and 2016; the ACT's "90 per cent of leafy greens from Sydney" figure traces to a 2012 University of Canberra study and 1992 ABS data (Eurobodalla Discussion Papers 2015; Commercial Agriculture in Palerang 2015; ACT Discussion Paper 2021; UC Research Portal). VERIFIED

The region's food system today

3.1 Demand and demographics by area

- ACT: 489,700 people at 31 March 2026, growing 1.3 per cent a year; projected to reach nearly 700,000 by 2050 (ABS 2026; act.gov.au September 2025). VERIFIED Aged 65 and over: 14.0 per cent in June 2025, projected 16.6 per cent by 2065; 63,847 people aged 65 and over and 29,162 aged 75 and over in 2023; 7,180 aged 85 and over at the 2021 Census (Preventive health in the ACT 2026; Healthy Ageing in the ACT 2026). VERIFIED Only 5.5 per cent of dwellings have no motor vehicle; 65.6 per cent of workers travel by car; 96.2 per cent of people 65 and over did not travel actively to education or work in 2021 (ABS QuickStats ACT 2021; Healthy Ageing in the ACT 2026). VERIFIED In 2021, 49.3 per cent of people 65 and over did not meet fruit guidelines and 95.1 per cent did not meet vegetable guidelines (Healthy Ageing in the ACT 2026). VERIFIED Canberra food prices rose 20.6 per cent in the five years to December 2024, bread and cereals 26.2 per cent and dairy 24.9 per cent (ACTCOSS Cost of Living Report 2025). VERIFIED
- QPRC: 63,404 people at 30 June 2021, 67,633 at 30 June 2025, projected 79,699 by 2036 and 85,084 by 2041 (QPRC Operational Plan 2025-2029; City Population). VERIFIED The Community Strategic Plan gives 65,368 for 2021, a discrepancy with the Delivery Program's 63,404 (QPRC CSP 2042). VERIFIED conflict noted About 13.7 per cent aged 65 and over in 2024 (9,157 people), below the NSW average because of young Googong and Jerrabomberra (City Population). VERIFIED Braidwood is old: median age 48, about 30.3 per cent aged 65 and over, median household income $1,367 a week against $2,310 LGA-wide (ABS QuickStats Braidwood 2021; QPRC Operational Plan). VERIFIED Car dependency is high: 74.1 per cent drove to work, 65.8 per cent work outside the area, 62.1 per cent of households have two or more vehicles, public transport access rated 2.4 out of 7 (QPRC Operational Plan; QPRC CSP 2042). VERIFIED SEIFA 1061, relatively advantaged, but 24.4 per cent of renters pay more than 30 per cent of income (QPRC CSP 2042). VERIFIED
- Eurobodalla: median age 54 against 39 for NSW; 32.9 per cent aged 65 and over (13,326) in 2021, 33.8 per cent (13,896) in 2024; 42 in every 100 residents aged 60 or over; 33 in 100 live alone; 8 per cent need assistance with core activities; 31 per cent of households earn under $800 a week; SEIFA 972 (ABS QuickStats Eurobodalla 2021; City Population; Eurobodalla Delivery Program 2025-29; Eurobodalla CSP 2042). VERIFIED 4.3 per cent of occupied dwellings (713) have no motor vehicle; 70 per cent drive to work; 27.3 per cent of dwellings were unoccupied at the Census (ABS QuickStats Eurobodalla 2021; Eurobodalla CSP 2042). VERIFIED The summer population "can reach about 130,000" against about 41,000 residents (Eurobodalla draft LSPS 2020). VERIFIED
- Narooma: urban centre population 3,395 (2021), about 39 per cent aged 65 and over; suburb profile median age 58, median household income $926 a week, 40.4 per cent single-person households, 7.9 per cent of dwellings with no vehicle; 51 km from Moruya's hospital, 225 km from Canberra (City Population Narooma; gdp.com.au Narooma; Wikipedia Narooma). VERIFIED third-party census profiles, ABS pages failed
- Aboriginal and Torres Strait Islander residents of Eurobodalla: 2,466 people (6.1 per cent), median age 25, 55.1 per cent renting, unemployment 11.4 per cent of the labour force (ABS Indigenous QuickStats Eurobodalla 2021). VERIFIED

3.2 Production by area

The ABS Agricultural Census 2020-21 and the Value of Agricultural Commodities Produced 2020-21 (both released 26 July 2022) are the only consistent LGA-level figures. They count businesses above a $40,000 estimated value of operations, so small market gardens and egg flocks are largely invisible (ABS data cubes 2020-21; ABARES Snapshot 2025). VERIFIED the exclusion effect is inferred

Area	Holdings (ha)	Businesses	Grazing (ha)	Veg, fruit, nuts, vines (ha)	Gross value 2020/21	Main lines
ACT	20,869	43	18,627	24	$9.37m	Cattle $2.61m, nurseries $2.41m, sheep $1.62m, poultry $1.12m, wool $1.08m, eggs $0.34m
QPRC	166,184	225	133,675	105	$43.06m	Cattle $24.20m, sheep $6.93m, wool $4.37m, hay $2.23m, vegetables $2.10m
Eurobodalla	18,582	69.5	13,528	14	$22.98m	Milk $11.28m, cattle $7.30m, turf $2.53m, nurseries $0.72m, fruit $0.40m
Three areas	205,635	338	165,830	144	$75.41m	Cattle 45%, milk 15%, nurseries and turf 9%, vegetables 2.9%, fruit 0.7%

Source: ABS Agricultural Commodities and Value of Agricultural Commodities Produced 2020-21 by LGA, read directly from the data cubes; totals are summed from the LGA rows. VERIFIED totals inferred

- ACT: 31,643 sheep and lambs, 3,957 meat cattle, no dairy cattle, 8,763 free-range layers producing 137,368 dozen eggs, 13 ha of apples, 11 ha of wine grapes (ABS 2020-21). VERIFIED The ACT Regional Drought Resilience Plan gives $9 million for 2020/21 with 4,639 cattle and 39,331 sheep, 159 farming families on 180 rural leases covering about 40,000 ha (15 per cent of the ACT), and three free-range egg producers with about 1.94 million eggs a year (ACT RDR Plan 2024). VERIFIED The 2021 discussion paper gives a conflicting $34 million for 2019; the two documents use different sources and years and neither reconciles them (ACT Discussion Paper 2021). VERIFIED conflict noted Soils are "naturally acidic, shallow (often under 10 cm), organic-matter deficient and erosion prone" (ACT RDR Plan 2024). VERIFIED Beekeeping: 1,394 registered beekeepers and more than 2,500 hives in July 2024, none commercial; an estimated 6,000 hives by October 2026 (Canberra Times 2024; Region Canberra October 2026). VERIFIED
- QPRC: 128,210 sheep and lambs, 38,877 meat cattle, 4,092 layers (108,977 dozen eggs), 2,437 ha of cereals and oilseeds, 59 ha of fruit (mostly olives, peaches and nectarines), 36.9 ha of vegetables of which 32.2 ha is unspecified "all other vegetables" (ABS 2020-21). VERIFIED The REDS gives agriculture gross value added of $77 million in 2020 and 553 jobs in 2021, with livestock "90% of local agricultural production"; these are not comparable with the ABS $43.06 million gross value because they measure different things (REDS 2023). VERIFIED non-comparability inferred Mulloon Creek Natural Farms ran 28,700 hens and 294 cows in 2024/25, selling through "a strategic alliance with Harris Farm Markets" (Mulloon Institute Annual Report 2025). VERIFIED The Araluen valley had about a dozen orchards from the 1970s to the 1990s and now has two; Wisbey's bulldozed about 25,000 peach trees in 2015 (Region Canberra December 2025; Canberra Times 2015). VERIFIED Braidwood saleyards handled 10,570 cattle in 2024/25, 27th of 28 NSW cattle saleyards; buyers are mostly interstate and northern restockers, so most beef leaves as live cattle (MLA Saleyard Survey 2024-25; The Land 2025). VERIFIED the export pattern is inferred
- Eurobodalla: 11,770 cattle, of which 2,674 dairy cows on about 10 businesses, 4,003 sheep, 7.65 ha of vegetables, 6.6 ha of fruit, 508 ha of hay (ABS 2020-21). VERIFIED Land capability in the agricultural zones (2015): Class 1 1,631 ha and Class 2 840 ha (about 3 per cent), Class 5 45,600 ha (68 per cent); "The area of high versatility agricultural land is limited" (Eurobodalla Discussion Paper 2, 2015). VERIFIED dated Dairy farms fell from 55 (2004) to 26 (2014) to

about 10 ABS businesses (2020/21); two value-adding dairies remain, Tilba Real Dairy (15,000 litres a day pasteuriser capacity, $1.1 million NSW grant in 2026, now buying milk from local farmers because the family farm stopped) and Bodalla Dairy (about 1,000 litres an hour, cheeses in about 200 Woolworths stores) (Eurobodalla Discussion Paper 2, 2015; ABS 2020-21; Region Canberra July 2026; FarmOnline 2021). VERIFIED

- Oysters, the coast's most valuable food product:

Estuary	2021/22 dozen	2023/24 dozen	2024/25 dozen	2024/25 value
Wagonga Inlet (Narooma), Sydney rock	384,103	350,217	331,323	$4,246,008
Tuross Lake, Sydney rock	86,524	347,341	163,075	$2,303,870
Clyde River, Sydney rock	337,015	299,206	228,442	$2,852,035
Clyde River, Pacific (triploid)	140,978	261,161	291,178	$4,368,006
Eurobodalla three estuaries			about 1,014,000	about $13.77m

Source: NSW DPIRD Aquaculture Production Reports 2021-22, 2023-24 and 2024-25; the three-estuary total is a sum. VERIFIED total inferred Wagonga peaked at 469,362 dozen in 2022/23, so volume is down about 29 per cent from peak while value has held because prices rose; Tuross halved in one year with no reason given in the report (NSW DPIRD 2023-24; 2024-25). VERIFIED the trend reading is inferred GAP on the Tuross fall

- The wider foodshed within about 150 to 200 km: Bega Valley 14,525 and Shoalhaven 17,192 dairy cows; Snowy Monaro 134 ha of vegetables (cabbages 3,840 t, potatoes 3,443 t); Yass Valley mushrooms $3.1 million and apples 260 t; Hilltops wheat 303,895 t, canola 107,060 t, cherries 1,740 t and 10.47 million dozen eggs (ABS 2020-21). VERIFIED The Capital Region Farmers Market states "the majority of produce coming from less than 300 kilometres" and lists 16 eligible NSW LGAs including Yass Valley, Goulburn-Mulwaree, Hilltops, Bega Valley and Eurobodalla (CRFM market rules). VERIFIED
- No foodshed or self-sufficiency study exists for Canberra. The ACT Government's 2024 Natural Capital Economics study, briefed to the Minister on 24 February 2025, found the ability to significantly increase food production "is thought to be limited" by climate, soil and land availability; the findings report has not been released (ACT CED1H~2, 2025; ACT QON 267, 2025). VERIFIED By analogue, Melbourne's foodbowl supplies 41 per cent of that city's food and could meet 82 per cent of its vegetables; Sydney's basin share was projected to fall from 20 per cent to 6 per cent (Foodprint Melbourne via The Conversation 2016; The Conversation Sydney 2016). VERIFIED dated analogues

3.3 Processing

- Meat: no abattoir in the ACT, QPRC or Eurobodalla on any list found. The nearest plants are Southern Meats at Goulburn (sheep and lambs, export-oriented), Monbeef at Cooma (cows and bulls for manufacturing beef, 150 to 180 head a day, bought by Bindaree in April 2023) and Hilltop Meats at Young; Cootamundra went export-only in 2014 (australianabattoirs.com 2017; Southern Meats; Beef Central 2023; Canberra Times 2015). VERIFIED 2026 operating status not confirmed Bungendore's butcher takes a weekly truck from the Moruya abattoir (about 25 cattle, 75 lambs and 10 to 12 pigs a week in 2015) and does service kills; the 2015 Eurobodalla paper says Moruya processes only cattle, sheep and goats (Canberra Times 2015; Eurobodalla Discussion Paper 7, 2015). VERIFIED dated NSW law allows a mobile abattoir (Provenir licensed June 2019, ten cattle a day) but has no micro-abattoir licence class or planning exemption; AFSA asked for one in May 2026 (Farm Online 2019; AFSA 2026). VERIFIED The ACT's preliminary assessment found a micro-abattoir "appears feasible in the ACT under current planning frameworks" and recommended a multi-species facility with farmer-led governance (act.gov.au strategy page). VERIFIED

- Dairy: the ACT has no dairy farms and lost its last processing plant when Bega Group announced in February 2023 that Capitol Chilled Foods (Canberra Milk) at Griffith would close after 63 years, moving production to Penrith (Canberra Times 2023). VERIFIED On the coast, about half of Eurobodalla's bulk milk went "many hundreds of kilometres" to Murray Goulburn in 2015; Tilba and Bodalla are the only local processors (Eurobodalla Discussion Paper 2, 2015). VERIFIED dated
- Bread: Goodman Fielder closed the Buttercup Bakeries factory at Fyshwick (47 permanent staff plus about 40 casuals), moving production to Moorebank and keeping Canberra as a distribution point; year not stated in the article (Canberra Times via inkl). VERIFIED date gap
- Cold chain, packing and milling: no cold storage, packing shed, flour mill or grain storage figure for the region was found; the ACT's Local Food Chain Infrastructure Study was only entering procurement in February 2025 (ACT CED1H~2, 2025). GAP Southern Harvest's Bungendore site has a planned commercial kitchen and storage; its proposed Fyshwick hub "would include storage, packing, and distribution facilities" (About Regional 2023; HerCanberra 2026). VERIFIED
- Oysters: sold live through farm gates, a handful of shops, the Sydney Fish Market and wholesale channels; Australia's Oyster Coast was formed in 2013 to find premium markets; during COVID the festival "was one of the few markets they were able to reach" (FRDC 2013; Bega District News 2021). VERIFIED No local processing is required or recorded. INFERRED

3.4 Distribution and retail

- Woolworths: Primary Connect's Wodonga regional DC (57,740 square metres) "services all of Canberra, regional Victoria and regional New South Wales" for ambient grocery, with up to 250 Ron Finemore prime movers on the Hume daily; fresh comes from Wetherill Park (76,000 square metres, serving more than 280 NSW stores from 2023); the Moorebank regional DC opened 13 November 2025 replacing Minchinbury (Property Observer 2015; Canberra Times 2020; Fully Loaded; Woolworths Group 2025). VERIFIED No Woolworths release names the ACT or South Coast; the inference is that there is no other Woolworths RDC between Sydney and Melbourne after Minchinbury's replacement (Woolworths Group 2020, 2021, 2025). INFERRED
- Coles: Kemps Creek automated DC (66,000 square metres) "serves 229 stores in New South Wales and the Australian Capital Territory" with capacity for four million cartons a week; South Goulburn DC closed 5 October 2021 with 147 staff; in March 2020 Goulburn's Coles store received up to five deliveries a day from four DCs (Food and Drink Business 2024; Goulburn Post 2021; Goulburn Post 2020). VERIFIED Batemans Bay, Moruya and Narooma Coles stores are most likely Kemps Creek supplied, but no source names them. INFERRED
- Aldi: Prestons DC in Sydney's west via Ron Finemore's Goulburn base for "Aldi stores in the ACT region" (Canberra Times 2020; Fully Loaded). VERIFIED
- Metcash (IGA): Huntingwood at Blacktown is "its main NSW distribution centre" (82,015 square metres); a 2015 hailstorm there limited dry grocery servicing and triggered contingency plans (Real Estate Source 2010; Metcash 2015). VERIFIED IGA stores on the corridor are inferred to be Huntingwood supplied. INFERRED
- Independents and wholesale markets: Canberra independents buy mainly from the Sydney and Melbourne central markets (Sydney Markets has more than 700 stall businesses); Fyshwick Fresh Food Markets (since 1965) and Capital Food Market at Belconnen (since 1976) are the two fresh food market halls; Fyshwick's greengrocers source from "local producers and market peers in Melbourne and Sydney" (Canberra Times January 2022; Region Canberra 2021; act.gov.au markets guide 2025). VERIFIED
- Highways: the Kings Highway is "the main east-west road between Batemans Bay on the NSW South Coast and the ACT"; both the Princes and Kings Highways "are vulnerable to traffic hazards and can be blocked for hours at a time" and remote localities face "a risk of temporary isolation" (Transport for NSW Kings Highway; Eurobodalla LEMP 2023). VERIFIED The Princes Highway "is slowly being upgraded but is B-Double limited" (Eurobodalla Discussion Paper 2, 2015). VERIFIED dated Nationally, over 75,000 truck trips a week deliver food to about 80,000 outlets (DAFF via Food and Beverage Industry News). VERIFIED undated

- Retail in the towns: Queanbeyan has Coles and Woolworths at Riverside Plaza; Bungendore and Braidwood each have an IGA; Captains Flat's not-for-profit Mama Tierra opened in 2026 as "the town's first grocery store in 15 years", open weekday afternoons only (Canberra Times 2013; openinghoursau listings; Region Canberra October 2026). VERIFIED Eurobodalla sources name Woolworths at Narooma, Moruya and Batemans Bay, Coles and Aldi at Batemans Bay, IGAs at Moruya and Malua Bay, and Woolworths Bermagui next door; supermarkets are the shire's second largest employer at 3.6 per cent (The Beagle 2021; Bay Post 2022; ABS QuickStats Eurobodalla 2021). VERIFIED
- Days of stock: no store or DC figure exists (Section A2). The nearest documented benchmarks are Ulladulla Woolworths on 1 January 2020, running on a generator with "enough food for about one more day", and a 2016 claim that a supply disruption would leave Sydney "only two days' stock of fresh produce" (ABC via inkl 2020; The Conversation Sydney 2016). VERIFIED A working assumption for planning is 1 to 3 days of fresh stock in a coastal supermarket under normal replenishment, and less in a holiday peak. ASSUMED
- Fuel: South Coast retail fuel was trucked from Port Kembla during the 2020 emergency; national diesel cover was 34 days (3,122 ML) on 27 October 2026, petrol 41 days; retail stock-outs across 8,167 monitored sites rose to 59 for both fuels, with NSW recording the largest rise (ESC Royal Commission submission 2020; fuelplan.gov.au October 2026). VERIFIED No regional days-of-fuel figure exists. GAP

3.5 Markets, hubs and co-operatives

- Capital Region Farmers Market (Rotary Club of Hall, EPIC, since 2004): about 100 weekly stallholders and roughly 7,000 customers each Saturday, about $4 million returned to community over 20 years (Region Canberra 2025; CRJO; CityNews 2024). VERIFIED
- Southern Harvest (farmer-led co-operative, established 2011): Saturday market and community store at The Village Square, Bungendore (since 23 September 2023); a Queanbeyan market; a CSA produce box scheme since 2017 with 13-week seasons, Half box $23.76 to Double Extended $118.80, a coolroom levy and $5.50 to $9.50 delivery; about 60 farmers supplying within roughly 150 km (Boorowa to Bombala, Temora to Bega Valley); 120 households subscribed in December 2024 (150 in December 2022); pick-up hubs at Fyshwick, Higgins, Gowrie, O'Connor, Downer, Kambah, Queanbeyan East, Bungendore, Michelago and Braidwood; news items dated to 2 November 2026 (About Regional 2023; Southern Harvest produce boxes 2026; HerCanberra 2026; About Regional 2024; Southern Harvest news 2026). VERIFIED The SGS study used Southern Harvest survey data as its production proxy: producers grow about 166,000 kg a year, "only 42% of produce grown in the region is sold locally", and "over 60%" have latent capacity to grow (SGS 2026). VERIFIED
- Braidwood Farmers Market (since November 2013, first and third Saturdays, National Theatre, local vendors only, includes Batemans Bay fish) (Braidwood Times 2019; Visit NSW). VERIFIED dated
- SAGE NSW Inc (Moruya): Tuesday farmers market since January 2013 (11 stallholders at opening, up to 36 in summer, "Most Outstanding Farmers' Market" 2014 and 2015), Stepping Stone Farm training garden, Food Share, Veggies for All, an e-market reinstated December 2022 with volunteer delivery from Malua Bay to Tuross Head, about 100 volunteers, charitable status; "Food security is really important to all of us" (SAGE Project; Eurobodalla Discussion Paper 7, 2015; About Regional 2022; The Beagle 2022). VERIFIED Tilba Growers Market has run Saturdays since December 2008 (Eurobodalla Discussion Paper 7, 2015). VERIFIED dated
- Southlands Fruit and Vegetables (Moruya and Narooma, since 1983) supplies venues from Durras to Bermagui; a community co-operative formed in September 2024 to buy it, with about 130 people at the information session (Narooma News 2024). VERIFIED Outcome not found. GAP
- Other: the ANU Food Co-op (since 1976) was struggling in April 2023 and appears to have reached 50 years in 2026; Murrumbateman village market twice monthly with around 50 stalls; Hartley Hall Markets monthly; Railway Park Organic Community Garden in Queanbeyan with 26 plots and a waiting list (2017); COGS runs 12 ACT community gardens with a waitlist (Region Canberra 2023; Wikipedia Murrumbateman; act.gov.au markets guide 2025; Canberra Times 2017; COGS). VERIFIED ANU survival inferred from a headline

- Hub economics: of 22 Australian food hubs SGS identified, 10 (45 per cent) have closed; the recommended ACT hub has a 15-year NPV of about minus $3.8 million (minus $3.79 million in the results table, minus $3.85 million in the executive summary), about plus $0.04 million excluding capital, and minus $8.18 million if volumes fall 25 per cent (SGS 2026). VERIFIED internal conflict noted Elsewhere, Food Connect Shed in Brisbane survived through a $2 million plus equity crowdfund with over 500 "Careholders", while Alfalfa House's Sydney shop closed in 2023 "due to lack of security of tenure" (Food Connect Shed; Alfalfa House). VERIFIED Tenure appears to be a survival factor for hubs and co-ops. INFERRED

3.6 Food relief and food insecurity

- Prevalence: no measured rate exists for the ACT, QPRC or Eurobodalla. Foodbank's Hunger Reports sample only 69 to 71 ACT respondents and publish no ACT rate; the ACT Food Relief Action Plan concedes "limited community-wide data"; the last ACT measurement is 3.6 per cent of residents in a household that ran out of food in 2011/12 (Foodbank Hunger Report 2024, 2025, 2026; ACT Food Relief Action Plan 2026; ACTCOSS 2019). VERIFIED GAP
- National benchmarks: 33.0 per cent of households (3.6 million) food insecure in the year to mid 2026, 61 per cent of them severely; regional households 36 per cent (23 per cent severe) against metropolitan 32 per cent (18 per cent severe); households headed by someone 55 or older 19 per cent (11 per cent severe); renters 51 per cent; the 2026 report names "higher fuel prices" as a driver (Foodbank Hunger Report 2026). VERIFIED Regional NSW 37 per cent and metropolitan NSW 31 per cent in 2025 (Foodbank Hunger Report 2025). VERIFIED Foodbank NSW and ACT: one in three households (about 1.1 million) struggle to afford enough food, 682,000 severely, 74 per cent facing food shortage for the first time (Foodbank May 2026; February 2026). VERIFIED Applying the regional NSW rate to Eurobodalla's roughly 17,900 occupied dwellings implies about 5,900 food-insecure households; this is an estimate, not a measurement. INFERRED
- ACT demand: nearly 100 Canberra families go without food each day; two thirds of organisations reported a 25 per cent rise in users in 2025 over 2024; pantries spend $8,672 a month on groceries, almost 50 per cent more than 2024; 70 per cent say government funding is insufficient and only 30 per cent receive any (VolunteeringACT snapshot via CityNews 2026; ACTCOSS 2026). VERIFIED OzHarvest ACT: 37 per cent of clients first-time users in 2025, highest in Australia; over 28,000 meals a week to 64 to 65 agencies, three vans, 22 agencies waitlisted, "well over half" of agencies cannot keep up; 719,354 kg rescued and 1,451,133 meals in 2025; hotspots include Gungahlin, Tuggeranong, Woden, Narrabundah, West Belconnen and Queanbeyan (Region Canberra April and August 2025; OzHarvest 2025 impact report). VERIFIED HelpingACT supplies 800 families a week with no paid staff; the Canberra Food Relief Network represents 43 pantries and asked for $427,912 a year in 2024, describing a sector "collapsing from unprecedented demand" (HelpingACT Impact Report 2024-25; Canberra Food Relief Network submission 2024). VERIFIED
- ACT Government response: about $22 million on food and related relief from 2020/21 to 2024/25; over $1.6 million a year on the Food Assistance Program and EMFA, including a "freight subsidy to support small to medium community food pantries accessing essential Foodbank item from Sydney"; a $1.5 million Food Bank Fund over three years; nearly $4 million for Meals in Schools at five schools; a Food Relief Action Plan 2026-2028 with six undated actions including provider mapping and a shared cold and dry storage warehouse; most 2025/26 Food Bank Fund money went to surge funding for higher transport costs (ACT Food Relief Action Plan 2026; ACT Treasury costing LAB035; Region Canberra February 2026). VERIFIED The 2026-27 Budget carries $182.6 million over four years for "community support, safety and inclusion" including food relief; no separate local food or agriculture item was reported (The Australia Today 2026). VERIFIED
- QPRC: no published prevalence; Queanbeyan is "a major hot spot" where "the Salvos and St Benedict's are struggling to meet demand" and "there is a queue out the door when they open" (Region Canberra August 2025). VERIFIED Providers: St Benedict's Community Centre, Karabar (free meals four days a week, hampers, "service of last resort"); Anglicare Food Fair (discounted groceries, Crawford Street); Salvation Army Thursday Community Connect Café with OzHarvest hampers; Vinnies night patrol and fortnightly hampers; High Street Care and

Queanbeyan Southern Youth and Family Services vouchers; Meals on Wheels Queanbeyan (about 1,200 meals a month in 2019, also serving Bungendore, Braidwood, Captains Flat, Sutton and Michelago); Braidwood Life Centre (food, vouchers, fuel, firewood); Vinnies Braidwood Friday pantry; Bungendore Food Hub at St Philip's Anglican, Wednesdays, 8 to 12 users a week (QPRC Food Relief Flyer February 2026; QPRC Community Support Directory April 2026; St Benedict's; Region Canberra 2019; Bungendore Anglican; ABC via inkl 2022). VERIFIED No food relief service is listed for Captains Flat, Nerriga, Araluen or Majors Creek (QPRC Community Support Directory April 2026). VERIFIED Council support is indirect: 2024/25 ClubGRANTS of $12,000 to St Benedict's, $15,000 to High Street Care, $6,000 to Foodbank NSW and ACT, $15,000 to Meals on Wheels Queanbeyan and $3,750 to Braidwood Life Centre (QPRC August 2024). VERIFIED In April 2020 the ACT-funded Canberra Relief Network could serve only ACT residents, so Queanbeyan residents were excluded (Region Canberra April 2020). VERIFIED

- Eurobodalla: no prevalence figure; providers are Anglicare's Moruya hub (over 200 people from Batemans Bay to Narooma assisted in December 2021), the Moruya Pantry Club (150 people a week in 2018, up to 50 a week and rising in 2022, supplied by Foodbank NSW), OzHarvest Narooma (about 100 hampers a week in 2021 from the Ecotel, demand tripled in the lockdown), Monty's Place Narooma (over 60 free meals a week, "little or no funding"), Eurobodalla Meals on Wheels (180 clients, 120 volunteers, Durras to Mystery Bay, 2021), SHASA food packs to 20 Moruya families, and a NSW-funded Food Donation Network linking supermarkets to charities from 2021 (Bay Post 2022; Narooma News 2018 and 2021; Canberra Times May 2022; NRMA 2024; The Beagle 2021 and 2022). VERIFIED Providers cite housing costs as the common driver: "The housing situation in this area is atrocious" (Narooma News 2018; Anglicare 2022). VERIFIED

3.7 Governance and policy by jurisdiction

- ACT: the Canberra Region Local Food Strategy 2024-2029 (released 12 June 2024, $455,000 in the 2024-25 Budget with $200,000 for first-year implementation) has four goals and funded three studies: the $178,000 Natural Capital Economics baseline (delivered, unreleased), the SGS food hub feasibility (January 2026, "reviewing the findings") and a micro-abattoir assessment; in August 2025 no further actions were being delivered "due to competing priorities and resource constraints" (ACT media release June 2024; ACT QTB 21, 2024; act.gov.au strategy page; ACT QON 267, 2025). VERIFIED The Dairy Road precinct licence went to Southern Harvest in 2026 and Canberra City Farm, on site since 2015, was told to leave by October 2026 (Canberra Times July 2026). VERIFIED Majura Valley farmers have waited for promised 25-year leases since 2022, with the latest confirmation of intent dated 27 December 2024 (Canberra Daily 2024). VERIFIED 2026 status is a gap The Assembly resolved on 10 April 2025 to set an urban growth boundary this term, considering "agricultural land use" as a factor; a Territory Plan amendment is due by June 2027 (ACT half-yearly statement 2026). VERIFIED The ACT Regional Drought Resilience Plan was endorsed in August 2024; the Food Relief Action Plan tabled 25 February 2026 (ACT RDR Plan 2024; ACT Food Relief Action Plan 2026). VERIFIED The ACT has no published food supply chain contingency plan and no food indicator in its Wellbeing Framework. GAP
- QPRC: no food security, food relief, emergency food or community garden strategy; the Community Strategic Plan 2042 (2025 revision) does not mention food, local food, markets or community gardens; the 2025-2029 Delivery Program funds Braidwood saleyards works ($42,000 in 2025/26, $43,000 in 2026/27, $461,000 in 2027/28, against a $2.2 million assessment) and the Bungendore pipeline design ($4.978 million in 2025/26) but nothing labelled food (QPRC CSP 2042; QPRC Operational Plan 2025-2029; Braidwood Saleyards Assessment 2024). VERIFIED The LSPS (July 2020) commits to "Investigate opportunities for use of mobile abattoirs in rural areas" and to protect important agricultural land; the LEP 2022 permits agricultural produce industries only in industrial zones and caps roadside stalls at 10 square metres (QPRC LSPS 2020; QPR LEP 2022). VERIFIED The 2016 Rural Lands Strategy warned against "further intensive rural small property development in the Googong and Captains Flat catchments"; in November 2025 council rezoned about 30 ha between Googong and Queanbeyan for 86 lots (Palerang Rural Lands Strategy 2016; Region Canberra November 2025). VERIFIED the tension is inferred
- Eurobodalla: the CSP 2042 (2025 revision), Delivery Program 2025-29 and Operational Plan 2026-27 contain no food security, food relief, local food or agriculture actions beyond a proposed "rock oyster experience trail",

although "Improving food security" was a stated community priority in the 2021 consultation (Eurobodalla CSP 2042; Delivery Program 2025-29; Operational Plan 2026-27; The Beagle October 2021). VERIFIED The Climate Action Plan 2022-32 states providers of "crucial goods and services like food and fuel" need systems to keep operating during disruptions and commits to advocate for this (Eurobodalla Climate Action Plan 2022-32). VERIFIED The LEMP edition 4 (November 2023) lists utilities failure as a high priority hazard and names three primary evacuation centres; its public part has no food or catering provisions (Eurobodalla LEMP 2023). VERIFIED Council's resilience spending is on the $150 million Southern Storage, a $4 million Moruya emergency services precinct and coastal works (Operational Plan 2026-27). VERIFIED

- Regional: the Canberra Region Joint Organisation's 2022-2026 priorities contain no agriculture or food content; its food work sits under waste (Food Donation Toolkit, Food Rescue Network); its freight advocacy covers the Kings, Princes, Barton and Imlay roads (CRJO Statement of Strategic Priorities 2022-2026; CRJO Resilience Programs). VERIFIED The Canberra Region Food Collaborative (RDA ACT, launched August 2021, catchment about 230 km) last shows activity in November 2023 (Future Food Systems 2021, 2023; RDASNA 2026). VERIFIED dormancy inferred
- NSW: the State Disaster Mitigation Plan (February 2024) does not mention supply chains or road access; Eurobodalla and QPRC are not in its top 20 multi-hazard LGAs; place-based Disaster Adaptation Plans under the Reconstruction Authority are the most plausible vehicle for food and fuel resilience actions (NSW SDMP 2024; AJEM 2025). VERIFIED the vehicle judgement is inferred DPIRD plans agricultural land mapping for public consultation in 2026 (NSW DPIRD agricultural land use mapping). VERIFIED
- Commonwealth: Feeding Australia ($3.5 million over two years from 1 July 2025) is in co-design, with a National Food Council (appointed November 2025) whose March 2026 meeting backed an urgent food supply chain assessment starting with liquid diesel and fertiliser; the strategy is due mid 2027; the Government response to Australian Food Story was tabled 22 June 2026 (DAFF timeline 2026; Crawford Fund 2026; DAFF government response page 2026). VERIFIED The 2026-27 Budget's $10 billion fuel package (a 1 billion litre Australian Fuel Security Reserve, the Minimum Stockholding Obligation lifted by 10 days to 50 days, a $7.5 billion Fuel and Fertiliser Security Facility, a $55 million ship and rail freight pilot) is the only funded 2026 national measure bearing directly on how groceries and farm inputs reach the corridor (Budget 2026-27 fuel page). VERIFIED the bearing is inferred
- Aboriginal food systems and Country, public record only: the ACT Government held a workshop of about 20 Ngunnawal representatives on 22 June 2024 for its food study and states "Workshop outcomes are not included in the report"; the ACT Government "is committed to engaging Traditional Custodians so Ngunnawal knowledge is included in the strategy"; the ACT Regional Drought Resilience Plan records that Ngunnawal cool burning can reduce fire risk; South East Local Land Services lists a project on the "Re-emergence of First Nations burning in contemporary grassy woodlands" (ACT CED1H~2, 2025; ACT media release June 2024; ACT RDR Plan 2024; NSW Government South East LLS). VERIFIED The Living Knowledge Network, an Aboriginal community-led organisation formerly Firesticks, describes itself as "Born from Cultural Fire practices" and names no Yuin, Walbunja or Ngunnawal programs on its site (Living Knowledge Network). VERIFIED No published Yuin, Walbunja, Djiringanj or Ngunnawal community organisation statement on cultural fishing, oyster gathering, native food enterprise or Country in relation to food was found. GAP

Shock record 2019 to 2026

IN SHORT

The system has absorbed every price and demand shock since 2019 in under three weeks. It has not absorbed a simultaneous road and power failure: the one such event, December 2019 to January 2020, cut supermarket supply at the coast for roughly 6 to 9 days, closed the Kings Highway for about five weeks and left over 1,000 Eurobodalla properties without power for more than 12 days. The documented lessons were written down by councils and two inquiries; the structural fixes they called for (alternate power for food retailers and fuel stations, route redundancy, a supply chain review) are either not adopted or not reported on after 2023. INFERRED from the verified record below

4.1 Dated table of shocks

Date	Shock and area	What broke	How long	Documented afterwards
2017 to early 2020	Drought, all three areas	ACT rainfall down 44 per cent, soil moisture at zero in summer 2020, farmers destocked; Canberra storage below 45 per cent in February 2020; Shoalhaven, Mongarlowe and Deua rivers stopped flowing; Braidwood on Stage 4 restrictions from 10 January 2020, trucking 250 to 300 kL a day from Canberra for up to six months; Tuross Lake had evaporated in the 2007 drought precedent (ACT RDR Plan 2024; Canberra Times May 2020; Region Canberra December 2019 and January 2020; Fishraider 2007) VERIFIED	About three years	ACT Regional Drought Resilience Plan (2024); Icon Water brought forward restriction triggers and found the region "less water secure than previously forecast" (2022); NSW Public Works Advisory study of Braidwood supply (ACT RDR Plan 2024; Icon Water; QPRC Water and Sewer) VERIFIED
26 November 2019 to 28 January 2020	North Black Range fire, QPRC	38,486 ha, five homes, Braidwood's water pump damaged, Kings Highway and Araluen Road cut; Dog Leg Farm lost its orchard; Harrison and Sons lost "half the orchard" (About Regional January 2020; About Regional November 2019; Region Canberra December 2025) VERIFIED	Two months	REDS 2023 records about 24 per cent of QPRC burnt in 2019/20 with "stock destruction and infrastructure damage" (REDS 2023) VERIFIED
Early December 2019	Currowan fire closes the Princes Highway, Batemans Bay	Highway closed from about 4 December (Region says three days, Canberra Times says eight days, both report reopening on 9 December); Batemans Bay "largely cut off", "Supermarkets had been running low on supplies"; a 12-vehicle police convoy with four fuel tankers ran before reopening; about 300 fallen trees cleared (The Beagle December 2019; Region December 2019; Canberra Times via inkl; Bega District News December 2019) VERIFIED closure length conflict noted	3 to 8 days	Transport for NSW "worked closely with the freight industry to ensure essential supplies could reach areas of need" (Bega District News 2019) VERIFIED

Date	Shock and area	What broke	How long	Documented afterwards
24 December 2019	Currowan fire at Nerriga, QPRC	"dozens of structures" damaged, "widespread impact to farmland" along Charleys Forest Road, Sassafras walnut crop lost (Canberra Times December 2019) VERIFIED	Days	St Benedict's delivered supplies to Nerriga in January 2020 (St Benedict's) VERIFIED
31 December 2019 to about 9 January 2020	Black Summer isolation of Narooma and Eurobodalla	Badja fire ran 40 km to the coast; power and communications lost around 8 am on 31 December and again on 4 January; Princes, Kings and Snowy Mountains Highways all closed (the Royal Commission records "five main NSW transport routes closed at once, forcing a 600 km detour"); Narooma Woolworths shut from New Year's Eve; food and fuel trucks could not get through; about 4,000 registered and 1,000 unregistered evacuees at Narooma; donated food ran out by about day 5; ice sold at the trawler for $10 cash; a gastro outbreak on day 2; EFTPOS and bowsers failed; Meals on Wheels lost three freezers and about $20,000 of food; Ulladulla Woolworths had "enough food for about one more day" on 1 January; Milton IGA admitted one customer at a time, six items, cash only, and gave away its meat (Bermagui Historical Society; ABC via inkl 2020; The Beagle diary January 2020; The Beagle May 2020; Royal Commission 2020; The Leader January 2020) VERIFIED	Escorted food and fuel trucks first reported 6 January; Meals on Wheels resumed 9 January; Princes Highway open north and south by 9 January; Kings Highway reopened 14 January; 3,245 customers still without power on 9 January, 683 on 29 January; over 1,000 properties off "for more than 12 days" (The Beagle EOC updates; Canberra Times January 2020; The Beagle January 2020) VERIFIED	Eurobodalla Shire Council submissions to the Royal Commission (May and June 2020): "no ability to obtain fuel", council drained its fleet's diesel for the hospital generator and secured over 120,000 litres by tanker runs to Port Kembla; recommendations for alternate power at fuel stations, food retailers and aged care, Essential Energy redundancy and a southern water storage; fires cost about $130 million in trade and 900 jobs (ESC Royal Commission submissions 2020) VERIFIED
1 to 2 January 2020	Canberra smoke	Worst air quality of any city in the world on 1 January; Australia Post suspended ACT deliveries; state of alert from 2 January (Wikipedia 2019-20 bushfire season) VERIFIED secondary	Days to weeks	No food supply after-action report found GAP
20 January 2020	Hailstorm, Canberra	$1.2 billion insured losses, 65 CSIRO glasshouses damaged; no farm or food supply impact reported (AIDR Knowledge Hub) VERIFIED	15 minutes	None on food GAP
27 January to February 2020	Orroral Valley fire, ACT	About 88,000 ha, roughly 40 per cent of the ACT with the Beard fire; 3,350 ha of rural land; 99 per cent of the Corin catchment burnt; a grazier's fencing loss about $350,000 (AIDR; ACT SoE 2023; Canberra Times July 2020) VERIFIED	Weeks	ACT SoE 2023: "the 2003 and 2020 fires may signal the beginning of a new fire regime" (ACT SoE 2023) VERIFIED

Date	Shock and area	What broke	How long	Documented afterwards
March 2020	COVID panic buying, national	Coles ran "three Christmases in three consecutive weeks"; DC truck loading stretched from 35 to 50 minutes to five or six hours; curfews lifted; the Canberra Relief Network was created but served ACT residents only (Canberra Times March 2020; Region Canberra April 2020) VERIFIED	Under three weeks	Canberra Relief Network delivered over 14,700 food hampers to 30 June 2021 and won a 2021 Resilient Australia award (ACT Hansard August 2021; ACT media release November 2021) VERIFIED
23 October 2020 to May 2023	Araluen Road landslips, QPRC and Eurobodalla	Road closed to trucks; "fruit that cannot reach markets is rotting"; repeated failures in March 2021, May 2021, December 2021 and February to March 2022; detour three hours plus to Moruya (Region Canberra May 2021; ESC Araluen Road page 2024) VERIFIED	About 31 months	Eurobodalla restoration project January 2020 to October 2023, $3 million plus over $1 million Fixing Local Roads; slope work still underway in October 2024 (ESC Araluen Road page 2024) VERIFIED
August 2021	Second COVID lockdown, ACT	Queues along every aisle and bare bread, toilet paper and milk shelves at Woden, Dickson, Erindale and Costco; Woolworths limited toilet paper (Region Canberra August 2021) VERIFIED	Days	Canberra Relief Network reactivated: 1,923 hampers and 1,226 Woolworths Online orders by 1 October 2021 (ACT media release October 2021) VERIFIED
31 August to early October 2021	Kings Highway closures for about 400 fire-damaged trees at Clyde Mountain	Tuesday to Thursday closures; Braidwood business revenues "down about 75 per cent"; "This will be the last impact that many small businesses can cope with" (Canberra Times August 2021; Region Canberra August 2021) VERIFIED	About six weeks of partial closure	Transport for NSW scaled back the plan after business objections (Canberra Times October 2021) VERIFIED
January 2022	Omicron labour shortage, national	Over 20 per cent of Woolworths DC staff and over 10 per cent of store staff absent; a third to half of truck drivers off; Coles limited chicken, mince and sausages; independents buying from central markets reported "we don't have supply issues" (The Conversation January 2022; Canberra Times January 2022) VERIFIED	Weeks	Treasury allowed asymptomatic close contacts in food supply roles to work (Treasurer's doorstop January 2022) VERIFIED
February 2022	Flood, Eurobodalla	Dairy farmers near Silo Farm bridge lost almost 120,000 litres of milk over about a week because they could not transport it (ESC Report to Council 2022) VERIFIED	About a week	Ten declared natural disasters in Eurobodalla between November 2019 and February 2022; over 2,000 road damage sites (ESC Report to Council 2022) VERIFIED
4 August and 7 October 2022	Floods, QPRC and ACT	Queanbeyan River peaked at 5.10 m; Morrisset Street Bridge and Oaks Estate road closed; October floods closed ACT crossings and 13 Yass roads; no supply impact reported (CityNews August 2022; Region Canberra October 2022) VERIFIED	Days	None on food GAP

Date	Shock and area	What broke	How long	Documented afterwards
2023	Kings Highway closures for tree removal	Three-day-a-week closures 31 August to 16 September and 5 October to early December 2023 (Transport for NSW 2026) VERIFIED	About three months of partial closure	None found GAP
June 2024 to March 2025	Avian influenza egg shortage, eastern states	Coles two-carton limits from 10 June 2024; Woolworths from about July 2024; an estimated 1.8 million birds destroyed; outbreaks in Victoria, NSW and the ACT; Mulloon Creek demand "outstrips supply" (The Nightly 2024; SBS 2025; Australian Food Timeline; Mulloon Institute Annual Report 2025) VERIFIED bird total secondary	About nine months	DAFF is "preparing for a highly contagious strain of bird flu" (H5N1) not yet in Australia (DAFF December 2025) VERIFIED
October 2024 onward	PFAS in Bungendore bores, QPRC	Bore 3 isolated; reticulation results 0 to 6 ppt against the 70 ppt limit; source not identified (QPRC report to council February 2025) VERIFIED	Ongoing	Monthly testing with NSW Health and the EPA (QPRC 2025) VERIFIED
December 2024	Woolworths DC strike	Four Victorian and NSW DCs closed for 13 or more days, $50 million in lost sales; Canberra impact not reported (Canberra Daily December 2024) VERIFIED	13 or more days	None found GAP
April 2025 onward	Varroa mite reaches the ACT	First detection at Kowen in April 2025; more than 1,000 hives destroyed by April 2026; about half of Canberra's 6,000 hives affected by October 2026, all expected by end 2027; the national program ended 6 February 2026; an expected shortfall of about 300,000 commercial hives for the 2026 eastern pollination season; Bilpin apples fruited at 5 per cent of normal in 2025 (Region Canberra April 2025, April 2026, October 2026; NSW DPIRD Varroa page; NRMA September 2026; ABC November 2025) VERIFIED	Permanent	ACT Assembly motion on pollinator protection passed October 2026 with no new funding (Region Canberra October 2026) VERIFIED
Autumn 2025 to early 2026	Return of dry conditions, tablelands	Canberra's hottest May on record; Millpost Farm (Bungendore) sold about a third of its stock and spends about $10,000 a month on feed; 907 head at the December 2025 Braidwood sale "spurred" by no rain since September; ACT storage 93.2 per cent (Ground News May 2025; Braidwood Times December 2025; The Land December 2025) VERIFIED	Ongoing at last source	2026 autumn and winter status not confirmed GAP
9 February 2026 for six months	Murrengenburg landslip repairs, Clyde Mountain	Eastbound lane closed, 40 km/h, "some future work may require full closures"; $4 million (Transport for NSW 2026; Bay Post February 2026) VERIFIED	About six months	None found GAP
March 2026 onward	Fuel shock after the Middle East conflict	Canberra unleaded rose from $1.76 to about $2.11 a litre by 12 March; regional stations charged up to $4 a litre or ran out; jerry can shelves empty nationally; diesel cover 32 days; a 20 per cent MSO release activated in March and extended to September; diesel $2.77 and petrol $2.34 in the five largest cities on 28 October 2026 (Region Canberra March 2026; ACAPMA May 2026; fuelplan.gov.au October 2026) VERIFIED	Ongoing	National Fuel Security Plan (30 March 2026); $10 billion package (May 2026) later described as $14.8 billion; Foodbank 2026 names fuel prices as a food insecurity driver (fuelplan.gov.au; Rigzone May 2026; Foodbank Hunger Report 2026) VERIFIED

Date	Shock and area	What broke	How long	Documented afterwards
Late October 2026	Rain event, east coast processing	Meat plants "all the way from North Queensland to southern NSW will miss production days" (Beef Central October 2026) VERIFIED headline only	Days	None found GAP

4.2 What the record shows

- Duration: every national demand or labour shock cleared in under three weeks, consistent with The Conversation's observation that all Australian supermarket supply crises to 2022 were resolved in that time (The Conversation January 2022). VERIFIED The physical isolation of the coast lasted 6 to 9 days for groceries and about five weeks for the Kings Highway. INFERRED from dated sources
- Mechanism: in every documented coastal shortage the binding constraints were power (which closed supermarkets, fuel pumps, EFTPOS, cold chains and phone towers) and highway access, not an absolute shortage of food in the region; local producers fed people from stock on hand. INFERRED from verified Black Summer accounts
- Resupply came outside the normal chain: police-escorted fuel tankers, council tanker runs to Port Kembla, an ADF distribution point at Mackay Park from 3 January to 4 February 2020, Victoria Police escorts of milk to Bega Cheese, and World Central Kitchen serving up to 900 meals a day at Bermagui (ESC submissions 2020; About Regional February 2020; Bermagui Historical Society). VERIFIED
- Canberra itself has not been tested. No source documents a multi-day Canberra store stock-out; the Hume Highway has not closed at both ends at once; the January 2022 labour shortage was the closest approach. VERIFIED absence; the "not tested" judgement is inferred
- Recurrence: the Kings Highway at Clyde Mountain has closed or part-closed in 2019/20, 2021, 2023 and 2026 (Transport for NSW 2026). VERIFIED This is a pattern, not a one-off. INFERRED

4.3 Inquiry recommendations and their status

- Royal Commission into National Natural Disaster Arrangements (final report 28 October 2020, 80 recommendations): 9.1, governments should "review supply chain risks, and consider options to ensure supply of essential goods in times of natural disasters"; 9.2 and 9.3, complete and real-time road closure information including council roads; 9.4, a critical infrastructure risk process; 12.3, evacuation plans to account for essential service outages including food and water; 12.6, backup power and communications for evacuation centres (Royal Commission report 2020). VERIFIED Status to about mid 2023: 9.1 "in progress" through the Office of Supply Chain Resilience and the National Emergency Management Stockpile; 9.4 and 9.5 complete; all 15 Commonwealth-only recommendations declared complete on 14 December 2023; a final implementation report "anticipated" for mid 2024 is not confirmed as published (NEMA implementation status 2023; NEMA Royal Commission page). VERIFIED No 2024 to 2026 report on 9.1 was found. GAP
- NSW Bushfire Inquiry (31 July 2020, 76 recommendations, accepted in principle): R31, access and egress for "communities, freight movers and fire fighting agencies", completed Q2 2022; R30, telecommunications power redundancy, still in progress with a Q2 2024 target as at June 2023; R54, a Mobile Generator Deployment Strategy, endorsed December 2021; R17, indoor Neighbourhood Safer Places, in progress; 83.8 per cent of 148 tracked items complete at 30 June 2023 (NSW Bushfire Inquiry progress reports 2021 and 2023). VERIFIED No progress report after June 2023 was found; Resilience NSW was abolished in December 2022 (NSW progress report 2023). VERIFIED later status is a gap

- Neither inquiry set a days-of-supply standard, recommended regional food or fuel stockpiles, or gave supermarkets a role in emergency planning; the Royal Commission weighed a domestic relief stockpile and called it "costly" with "risk of wastage" (Royal Commission Chapter 9). VERIFIED A regional plan cannot cite either inquiry as mandating a local food reserve. INFERRED
- Eurobodalla Council's own recommendations to both inquiries (alternate power for fuel stations, food retailers and aged care; Essential Energy redundancy into the shire; a three-way funded southern water storage) have produced the Southern Storage (dam wall December 2025) and one permanent generator at a Caltex station; no NSW regulation on business continuity power for food retailers was found, and council reported in 2022 that "Only a small proportion" of those businesses had taken significant action (ESC submissions 2020; ESC Report to Council 2022; ESC December 2025). VERIFIED non-adoption is an open gap, not confirmed
- Local plans: a 2023 community critique found Eurobodalla's Emergency Plan (2016) and Flood Plan volumes (2006 and 2013) past review and not updated after Black Summer, contrasting Shoalhaven's 19 solar and satellite backed "Local Information Hubs"; the LEMP was reissued as edition 4 in November 2023 (The Beagle July 2023; Eurobodalla LEMP 2023). VERIFIED
- The 2026 fuel crisis has in effect superseded bushfire-era supply chain work as the operative national frame: the National Fuel Security Plan, the Australian Fuel Security Reserve "focused on regional stockouts and supply constraints for essential users" and the National Food Council's diesel and fertiliser assessment (fuelplan.gov.au 2026; Rigzone 2026; Crawford Fund 2026). VERIFIED the framing judgement is inferred

Strengths and weaknesses by function

5.1 Natural capital and land

Strengths

- 205,635 ha of agricultural holdings across the three areas, 81 per cent of it in QPRC, with the tablelands suited to grazing and the coast carrying nearly twice the beef gross margin per hectare ($479.89 coastal against $251.69 inland on DPIRD's June 2026 budgets) because a cow and followers need 1.73 ha on the coast against 3.72 ha inland (ABS 2020-21; DPIRD beef gross margins June 2026). VERIFIED
- Climate contrast across 120 km: Canberra Airport 637 mm and a July minimum of 0.1 degrees; Braidwood 722 mm; Moruya Heads 955 mm and a July minimum of 5.9 degrees; Narooma 923 mm (BoM climate averages 2026). VERIFIED
- The Mulloon Rehydration Initiative covers 23,000 ha and over 50 km of streams with 20 km rehabilitated, "the most comprehensively monitored catchment in Australia" with records from 2006; measured results are a 0.37 m mean rise in the floodplain water table over 2 km of treated creek (2017 thesis) and a sustained 15 ML a day flow from March 2020 (Mulloon Institute Annual Report 2025; UOW thesis 2017; The Land 2020). VERIFIED
- Wagonga Inlet is described by Joonga director and traditional owner Wally Stewart as one of the healthiest waterways on the east coast, holds Posidonia seagrass, and opened NSW's first subtidal oyster reef in February 2025 (About Regional February 2025; ESC Wagonga Inlet page 2025). VERIFIED
- Almost 70 per cent of the ACT and nearly 72 per cent of Eurobodalla is national park, reserve or state forest, which protects catchments (Region Canberra March 2026; Eurobodalla Discussion Paper 2, 2015). VERIFIED

Weaknesses

- Cultivable land is scarce: 144 ha of vegetables, fruit, nuts and vines across three areas; Eurobodalla has 2,471 ha of Class 1 and 2 land and 68 per cent of its agricultural zone in Class 5; ACT soils are shallow and acidic (ABS 2020-21; Eurobodalla Discussion Paper 2, 2015; ACT RDR Plan 2024). VERIFIED
- Fragmentation and price: 46 per cent of Eurobodalla rural ownerships are under 10 ha and "Only around 130 properties or about 8%" are serious farms; roughly 1,000 lots were privately created in Palerang's 40 ha zone; a cow-and-calf unit costs $11,000 to $13,000 of land in Palerang against $4,000 to $6,000 on the North West Slopes; coastal returns were "at best about $180 per ha, roughly 2% interest on land value" (Eurobodalla Discussion Paper 2, 2015; Rural living in Palerang 2016; Commercial Agriculture in Palerang 2015). VERIFIED dated
- Tenure: Majura Valley farmers on 90 days' notice since 2005; "we can't take any more false promises, and 20 years is a very, very long time to wait" (Canberra Daily December 2024). VERIFIED ACT Land Management Agreements "are outdated and do not support daily farming decisions" (ACT CED1H~3, 2024). VERIFIED
- Urban expansion: the Western Edge investigation covers 9,800 ha and 161 blocks of rural lease land; Googong converts 780 ha to a town of 18,000; QPRC rezoned 30 ha between Googong and Queanbeyan in November 2025; the ACT building footprint grew 40 per cent from 2004 to 2023 (ACT SoE 2023; Wikipedia Googong; Region Canberra November 2025; OCSE Close to the Edge 2025). VERIFIED No source gives an annual rate of farmland loss. GAP
- Mulloon's wider claims are the proponent's: the institute's own cost and benefit lines ($525,000 against $650,000) give a ratio of 1.24, not the 3.6 quoted internationally; the 2022 catchment thesis found the recharge increase "disappeared" in dry years and "weather and weirs cannot be separated" (MRI Case Study 2025; UNCCD case study; Meinen 2022). VERIFIED the ratio is a calculation

- Contamination: Captains Flat lead (leafy vegetables and poultry warnings) and Bungendore PFAS (QPRC Captains Flat Lead page; QPRC PFAS report 2025). VERIFIED
- No Important Agricultural Land or Land and Soil Capability map covers the three areas as at November 2026 (NSW DPI IAL FAQs; NSW DPIRD mapping page). VERIFIED GAP

Verdict: the land base is large but grazing land, fragmented, expensive and partly insecure, and it cannot be assumed to grow much more than it does. INFERRED

5.2 Water

Strengths

- Canberra and Queanbeyan: 278 GL across Corin, Bendora, Cotter and Googong on three catchments plus the Murrumbidgee to Googong pipeline (100 ML a day); 91.2 per cent at June 2025 and 93.2 per cent on 23 December 2025; Icon Water says the three-catchment draw "strengthens Canberra's water security during drought or if bushfires compromise one catchment's source water" (Icon Water DWQR 2024-25; Braidwood Times December 2025). VERIFIED
- Googong township's $133 million recycled water system is expected to cut potable use by 60 per cent (Wikipedia Googong). VERIFIED secondary
- Eurobodalla's 3,000 ML Southern Storage: dam wall complete 4 December 2025, about six months to fill, with an estimated 581 ML a year extra for downstream irrigators and stock (ESC December 2025; National Water Grid Authority). VERIFIED
- The coast has 35 to 50 per cent more rain than Canberra (BoM 2026). VERIFIED ratio inferred

Weaknesses

- No regulated irrigation water anywhere in the three areas: tablelands agriculture is "rainfall dependent" with "no regulated source providing annual allocations"; coastal Type 2 harvestable-right dams (10 to 30 per cent of runoff) cannot lawfully irrigate; Canberra's 278 GL is not allocated to agriculture (Commercial Agriculture in Palerang 2015; Harvestable Rights Order 2022). VERIFIED the implication is inferred
- Bungendore: bore allocation cut to 216 ML a year in 2021, one bore offline for PFAS, the $78 million pipeline refused National Water Grid funding in May 2026, and council "will need to press pause on any more development" without a solution (QPRC pipeline factsheet 2025; QPRC pipeline page 2026). VERIFIED
- Braidwood: 72 ML off-river storage, river stopped flowing mid-December 2019 (Region Canberra January 2020). VERIFIED
- Eurobodalla: the whole shire "relied solely on the Northern Water Treatment Plant and Deep Creek Dam" in 2020 and ran a boil water notice from Moruya to Tilba; Level 1 restrictions were imposed in December 2023 with a full dam because river flows were falling ahead of visitors; the northern plant's 20 ML a day capacity is exceeded in summer (ESC Royal Commission submission 2020; About Regional December 2023). VERIFIED
- Canberra's compound risk: 84 per cent of 2024/25 supply came from the Cotter catchment, 99 per cent of whose Corin sub-catchment burnt in 2020; Icon Water's 2022 assessment found the region "less water secure than previously forecast" (Icon Water DWQR 2024-25; ACT SoE 2023; Icon Water Water for Generations). VERIFIED
- Farm water: ACT farm dams dried up in the 2017 to 2020 drought and farmers relied on town water, bores and springs (ACT RDR Plan 2024). VERIFIED

Verdict: urban drinking water is the region's strongest single function; water for food production is the weakest, and the two food towns closest to the Sun Villages sites, Bungendore and Braidwood, have the least secure town supply. INFERRED

5.3 Production

Strengths

- A red meat surplus: 50,629 meat cattle and 163,855 sheep and lambs across the three areas, with Snowy Monaro, Yass and Upper Lachlan adding over 2.5 million sheep within 200 km (ABS 2020-21). VERIFIED
- Eggs at scale and in demand: Mulloon Creek's 28,700 hens, Majura Valley Free Range Eggs since 1999, and Hilltops' 10.47 million dozen (Mulloon Institute Annual Report 2025; Canberra Times 2023; ABS 2020-21). VERIFIED
- Coastal dairy with value-adding: Eurobodalla 2,674 cows and $11.28 million of milk; Tilba Real Dairy's 15,000 litres a day pasteuriser and new $1.1 million grant; Bodalla's cheeses in about 200 Woolworths stores; Bega Valley and Shoalhaven's 31,700 cows next door (ABS 2020-21; Region Canberra July 2026; FarmOnline 2021). VERIFIED
- Oysters: about $13.8 million across three estuaries, QX-free surveys 2023 to 2025, festival demand that "has more than tripled" in ten years (NSW DPIRD 2024-25; FRDC 2026; Narooma Oyster Festival 2026). VERIFIED
- Latent capacity among small growers: "over 60%" of Southern Harvest producers report capacity to grow; "demand for sustainably grown, local, fresh, healthy, delicious produce is growing faster than can currently be supplied" on the coast (SGS 2026; Eurobodalla Discussion Paper 7, 2015). VERIFIED
- Self-provisioning: about half of ACT consumers grow some of their own food; in 1992, 41 per cent of Canberrans were involved in backyard or community growing against a national 36 per cent; about 100 community and school gardens are mapped (ACT CED1H~2, 2025; ACT CED1H~3, 2024; ACT Discussion Paper 2021). VERIFIED

Weaknesses

- Horticulture is close to nil: 44.6 ha of vegetables across the three areas, about one hectare per 10,000 ACT residents; the largest single line ($2.06 million of QPRC "other vegetables") is undisclosed (ABS 2020-21). VERIFIED the ratio is inferred
- Grain is nil for practical purposes: QPRC wheat 751 t, oats 413 t, barley 479 t; no mill or grain store found (ABS 2020-21). VERIFIED GAP on milling
- Farm numbers and ages: Eurobodalla dairies 55 to 26 to about 10 (2004 to 2021); 61 per cent of its agriculture workers were over 50 and 25 per cent over 65 in 2011; "Succession is a major issue for South Coast dairy farmers" (Eurobodalla Discussion Paper 2, 2015; ABS 2020-21; Region Canberra July 2026). VERIFIED
- Enterprise failure: Pialligo Estate (23 ha, 78 vegetable beds, over 1,000 fruit trees) ceased trading 28 March 2023 owing about $8.5 million to unsecured creditors; Wisbey's Araluen orchard bulldozed 25,000 trees in 2015 (Region Canberra April 2023; Canberra Times 2015). VERIFIED
- Oyster volume is falling: Wagonga down about 29 per cent from its 2022/23 peak; Tuross halved in 2024/25; NSW Sydney rock production down 8 per cent; threats are rainfall closures, sewage overflows (six pumping stations in October 2014), algal blooms after fire-then-rain (April 2017) and warming water near the 21 to 21.5 degree QX window (NSW DPIRD 2024-25; Oysters Australia 2014; Narooma News 2017; FRDC 2026). VERIFIED the trend reading is inferred
- Pollination: Varroa now affects about half of Canberra's hives; apples are 100 per cent and cherries 90 per cent reliant on honey bee pollination; "It is high risk to rely on feral hives for pollination in the 2026-2027 season" (Region Canberra October 2026; Australasian Beekeeper September 2026). VERIFIED
- Drought exposure: ACT farmers destocked in 2019/20 and Millpost sold a third of its stock in late 2025; "One farmer estimated 100 kangaroos equal about 75 sheep" (ACT RDR Plan 2024; Braidwood Times December 2025). VERIFIED
- Viability: DPIRD beef gross margins of $252 to $614 per ha before overheads, against land prices that were already $2,000 to $7,000 per ha inland and $8,000 to $20,000 per ha on the coast a decade ago; no 2024 to 2026 land price series was found (DPIRD June 2026; Rural living in Palerang 2016; Eurobodalla Discussion Paper 2, 2015). VERIFIED current ratios are a gap

Verdict: the region produces a large surplus of beef, lamb, eggs and oysters, a useful coastal milk supply, and almost none of the vegetables, fruit and grain its people eat; no credible source claims it could feed itself. INFERRED from verified figures and quotes

5.4 Processing

Strengths

- Two working coastal dairies with growth plans and grant support (Region Canberra July 2026; FarmOnline 2021). VERIFIED
- Service kills still happen: Bungendore Country Butchery's weekly Moruya run and local service kills; demand "hasn't slackened off. People are prone to wanting to eat their own product" (Canberra Times 2015). VERIFIED dated
- A legal pathway exists: NSW licensed a mobile abattoir in 2019; the ACT found a micro-abattoir feasible and favours safeguarding mobile butchering regulation; QPRC's LSPS commits to investigate mobile abattoirs; NSW funded a council micro-abattoir at Barham in 2020 (Farm Online 2019; act.gov.au strategy page; ACT CED1H~3, 2024; QPRC LSPS 2020; NSW Nationals 2020). VERIFIED
- Southern Harvest's commercial kitchen at Bungendore and planned Fyshwick hub (About Regional 2023; Canberra Times July 2026). VERIFIED

Weaknesses

- No abattoir, no cold store, no milk plant, no mill in any of the three areas; the nearest plants are species-limited (Goulburn sheep only; Cooma manufacturing beef) and roughly 150 to 250 km from Braidwood or Moruya by road (abattoir evidence above; distance estimated). VERIFIED distance inferred
- 80 per cent of NSW smallholders "have lost or are at risk of losing abattoir access"; no NSW micro-abattoir licence class or planning exemption exists; a national shortage of meat inspectors (AFSA 2026; Sustainable Table 2025). VERIFIED
- The processing that existed has left: Canberra Milk (2023), Buttercup Fyshwick, Coles Goulburn DC (2021), Cootamundra to export-only (2014) (Canberra Times 2023; Canberra Times via inkl; Goulburn Post 2021; Canberra Times 2015). VERIFIED
- Food safety compliance load on small growers: Standards 4.2.7 to 4.2.9 for berries, leafy vegetables and melons, enforced Australia-wide from 12 February 2025, require an approved food safety management statement; SGS names this as a burden (WA Health; FSANZ; SGS 2026). VERIFIED
- The dairy margin squeeze: "You can't pay distributors 25 per cent and retailers want 40 per cent" (Region Canberra July 2026). VERIFIED

Verdict: processing is the thinnest link; without slaughter, chilling and aggregation capacity the region's meat and egg surplus cannot substitute for imported food in a prolonged cut. INFERRED

5.5 Distribution and logistics

Strengths

- The Sydney DC network is modern and high capacity: Moorebank moves over 5 million cartons a week; Kemps Creek reports a 20 per cent availability improvement (Woolworths Group 2025; Food and Drink Business 2024). VERIFIED This is efficiency at the Sydney end, not buffer in the region. INFERRED
- Three sealed routes to the coast exist (Kings, Princes, Snowy Mountains), and the Woolworths Wodonga DC gives Canberra a second corridor for ambient grocery (Transport for NSW; SEATS 2017; Property Observer 2015). VERIFIED
- Emergency logistics worked once organised: escorted convoys, council fuel runs, ADF distribution (Section A4). VERIFIED

- Independents using central markets kept shelves stocked in January 2022 (Canberra Times January 2022). VERIFIED
- Woolworths is now mapping its critical routes in five-kilometre segments for disaster risk and calling for targeted highway investment (Woolworths Group 2026). VERIFIED

Weaknesses

- Every banner's grocery freight originates roughly 250 to 330 km away with no DC inside the corridor since 2021 (DC evidence; distances approximate). VERIFIED distances inferred
- The Kings Highway at Clyde Mountain and the Princes Highway at Milton-Ulladulla, Moruya and Narooma are the documented single points of failure, with bypass dates of late 2028 at best and no funding for Moruya (Section A1). VERIFIED
- When the Kings and Princes close together, the only remaining road is the Snowy Mountains Highway over Brown Mountain, itself repaired for nine landslip sites from 2022 and 2023 disasters (About Regional February 2026). VERIFIED the chain is inferred
- Fuel dependency: the whole chain runs on diesel trucked from Port Kembla and Sydney; national diesel cover of 32 to 36 days through 2026 says nothing about any corridor town (fuelplan.gov.au; ESC submission 2020). VERIFIED GAP on regional fuel days
- No days-of-stock data, no grocery freight volumes on the Kings or Princes, no published count of Princes Highway closure days per year (Sections A2 and A8). GAP
- Food relief freight depends on the same Hume Highway: Foodbank items come from Glendenning with an ACT freight subsidy whose costs rose enough to absorb most of the 2025/26 Food Bank Fund (ACT Food Relief Action Plan 2026; Region Canberra February 2026). VERIFIED
- Last mile for the villages: Captains Flat without a grocer for 15 years; Narooma 51 km from Moruya; Araluen cut off from markets for 31 months (Region Canberra October 2026; Wikipedia Narooma; ESC Araluen Road page). VERIFIED

Verdict: distribution is efficient in normal times and brittle under compound failure; the region has sophisticated long supply chains and, in Dr Rachel Carey's words, "not robust short ones" (Region Canberra May 2023). VERIFIED quote; verdict inferred

5.6 Retail and access

Strengths

- High car ownership gives most households access to several stores: 94.5 per cent of ACT dwellings, 95.7 per cent of Eurobodalla dwellings and most QPRC households have a vehicle (ABS QuickStats 2021; QPRC Operational Plan). VERIFIED
- Independent retail survives in the towns (IGAs, Southlands, Fyshwick and Belconnen markets, the new Captains Flat store) (Section A3.4). VERIFIED
- Strong farmers' market demand and consumer willingness to buy local (Section A3.5). VERIFIED
- Supermarkets acted generously in 2020: Woolworths sent over 200 pallets from Sydney, gave store managers $20,000 credit cards for customers without cash, and Coles Batemans Bay baked 14,000 loaves (AFR via AACS 2020). VERIFIED

Weaknesses

- A duopoly with no local buffer: "we are faced with a supermarket duopoly" (Vassarotti, Region Canberra June 2024). VERIFIED
- Power dependence closes retail outright: Narooma Woolworths from New Year's Eve 2019; Milton IGA at six items, cash only; EFTPOS dead (Section A4). VERIFIED

- Village food deserts: Captains Flat for 15 years; no food retail status confirmed for Nerriga, Araluen or Majors Creek; Canberra's Narrabundah caravan park "would count as a food desert" (2013) with no later mapping (Region Canberra October 2026; Canberra Times 2013). VERIFIED villages are a gap
- Price: Canberra food up 20.6 per cent in five years; bananas $3.50 to $4.50 a kilogram, 5 kg of potatoes $18 at a Canberra pantry in November 2025 (ACTCOSS 2025; Canberra Daily November 2025). VERIFIED
- Carless and old: 5.5 per cent of ACT dwellings (about 9,000), 713 in Eurobodalla and 7.9 per cent in Narooma have no car; 96.2 per cent of ACT people 65 and over do not travel actively (ABS QuickStats 2021; gdp.com.au Narooma; Healthy Ageing in the ACT 2026). VERIFIED
- Summer surge: Eurobodalla's population triples on the same highway and stock (Eurobodalla LEMP 2023). VERIFIED

Verdict: access is good for a driver with a full tank and grid power, and collapses for everyone when either goes. INFERRED

5.7 Food relief and the safety net

Strengths

- A dense, generous volunteer network: 43 pantries in the Canberra Food Relief Network meeting monthly since 2023; HelpingACT with no paid staff; St Benedict's over 60 kitchen volunteers; Monty's Place since 2013; Eurobodalla Meals on Wheels with 120 volunteers; SAGE with about 100 (Canberra Food Relief Network 2024; HelpingACT 2025; St Benedict's; NRMA 2024; The Beagle 2021; SAGE). VERIFIED
- OzHarvest's ACT operation (three vans, about 50,000 kg a month rescued) serves Queanbeyan agencies across the border (OzHarvest 2025 impact report; Region Canberra August 2025). VERIFIED
- Government money exists, if thin: about $22 million from the ACT over five years; Meals in Schools; a $1.5 million Food Bank Fund; QPRC ClubGRANTS; NSW's 2021 Food Donation Network (ACT Food Relief Action Plan 2026; QPRC 2024; The Beagle 2021). VERIFIED
- The COVID Canberra Relief Network showed a government-backed hamper system can be stood up fast and won a national award (ACT media release 2021). VERIFIED
- The ACT plan's Action 6 on a shared cold and dry storage warehouse is a direct opening for a regional store (ACT Food Relief Action Plan 2026). VERIFIED

Weaknesses

- Demand is outrunning supply everywhere: 37 per cent first-time users, 22 agencies waitlisted, "well over half" of agencies unable to keep up, pantries spending almost 50 per cent more on groceries, "the food relief sector is collapsing from unprecedented demand" (Region Canberra 2025; CityNews 2026; Canberra Food Relief Network 2024). VERIFIED
- No measured prevalence in any of the three areas (Section A3.6). GAP
- Coverage gaps map onto the oldest places: no listed relief in Captains Flat, Nerriga, Araluen or Majors Creek; Narooma's relief is one weekly meal service and motel-kitchen hampers; Braidwood has one centre and a Friday pantry (QPRC directory 2026). VERIFIED
- Relief is physically dependent on Sydney and on grid power: Foodbank from Glendenning; Moruya Pantry Club staff check the Foodbank website "up to seven times a day for stock"; freezers failed in 2020; Foodbank told the Royal Commission of a "lack of chilled capacity during lengthy periods without reliable power supply" (ACT Food Relief Action Plan 2026; The Beagle May 2020; Foodbank RCNDA submission). VERIFIED
- The border: ACT-funded relief excluded Queanbeyan in 2020 (Region Canberra April 2020). VERIFIED
- Aged care meals are in transition: Support at Home from 1 November 2025, CHSP to transition "no earlier than 1 July 2027", Meals on Wheels seeking fuel-cost relief, an Ombudsman finding of "serious problems" with assessment reliability (Department of Health 2026; Meals on Wheels Australia 2026; COTA October 2026). VERIFIED
  No published Support at Home meal contribution rate was found. GAP

- The ACT's 2026 plan is a plan for a plan: six actions with no dates; "There are four pages of substance" (Region Canberra February 2026). VERIFIED

Verdict: the safety net is held up by volunteers, is already stretched past capacity in ordinary times, and would fail first in exactly the places where the Sun Villages residents live. INFERRED

5.8 Social capital and community networks

Strengths

- Proven crisis response: Rotary and Lions at Narooma, Wildfire's chefs cooking 150 meals by torchlight, Trapman's 250 kg of fish at Bermagui, World Central Kitchen's 50,000 meals, IAMS and Waminda's grocery drive to Aboriginal communities, Council draining its own diesel for the hospital (Narooma Rotary 2020; Bay Post 2020; Bermagui Historical Society; NITV 2020; The Beagle January 2020). VERIFIED
- Organised local-food institutions: Southern Harvest, SAGE, Capital Region Farmers Market, COGS, Canberra City Farm, Seed Savers, Slow Food Canberra, the Mulloon Institute, Soils for Life (Southern Harvest partners list 2026; SAGE; COGS). VERIFIED
- SHASA's practical resilience work: $1.048 million for Tilba Halls as a heatwave and bushfire haven, solar and batteries at Narooma CWA, Moruya CWA and Batemans Bay Uniting, a Heatwave and Bushfire Haven Strategy costed for 20 facilities, $3.1 million with ANU for eight microgrid studies (The Beagle 2021 and 2022). VERIFIED
- Volunteering rates: 16.5 per cent of QPRC residents volunteer; 68 per cent of Eurobodalla residents "feel someone will be there if help is needed" (QPRC Operational Plan; ESC Our Story 2016). VERIFIED
- Strong consumer support: 80.1 per cent buy local "to support the community"; "If a producer is willing to travel three or four hours to sell their products at the Canberra farmers market then the consumer market is there" (ACT CED1H~2, 2025; ACT Listening Report 2022). VERIFIED
- Co-operative models with cost data in print (Southern Harvest's 35 to 40 per cent on-cost; Food Connect Shed's equity model) and a free platform (Open Food Network, "a small admin fee ONLY when you make more than $500 a month") (Southern Harvest 2026; Food Connect Shed; OFN Australia). VERIFIED

Weaknesses

- Volunteer organisations carry the load without secure funding or tenure: Canberra City Farm lost its site after ten years; Monty's Place runs on "little or no funding"; the ANU Food Co-op needed a $50,000 crowdfund in 2023 (Canberra Times July 2026; NRMA 2024; Region Canberra 2023). VERIFIED
- Isolation among the old: 33 in 100 Eurobodalla residents live alone; "The elderly were housed together in the sports centre, with their names pinned to them"; older residents without Facebook struggled for information when radio failed (Eurobodalla CSP 2042; The Beagle diary 2020; The Beagle January 2020). VERIFIED
- The coordinating body lapsed: the Canberra Region Food Collaborative shows no activity after November 2023 (Section A3.7). VERIFIED dormancy inferred
- Complementary currencies have a poor survival record where they carry overheads: the Bristol Pound closed in 2021 and its successor in 2023 because "we couldn't raise enough to get the project off the ground"; survivors (WIR, Sardex, CES) are mutual credit systems with a business base (Bristol Pound Legacy; SardexPay 2026; Community Exchange System). VERIFIED
- Aboriginal community voice on food and Country is absent from the published record found (Section A3.7). GAP

Verdict: social capital is the region's most reliable resilience asset and the one most at risk of being exhausted, because it substitutes for infrastructure and funding that have not arrived. INFERRED

5.9 Governance, policy and funding

Strengths

- The ACT has a strategy, a drought plan, a relief plan, a hub study and a micro-abattoir assessment, and claims to be "the first Australian state or territory to launch a plan to support its local food system" (ACT media release June 2024). VERIFIED
- Cross-border water sharing works: Queanbeyan buys potable water from Icon Water; Braidwood was supplied from Canberra's dams in 2020; a revised ACT-NSW water MoU has reached committee-level consensus (QPRC Water and Sewer; Region Canberra January 2020; QPRC pipeline page 2026). VERIFIED
- The Commonwealth's 2026 fuel package and the National Food Council's supply chain assessment create national attention on exactly the diesel and freight dependencies that matter here (Budget 2026-27; Crawford Fund 2026). VERIFIED
- Funding windows exist: FRRR Rebuilding Futures for communities hit by disasters between January 2019 and December 2025 (Eurobodalla and QPRC qualify); FRRR Small and Vital grants for small communities; NSW Community Building Partnership 2027; Ian Potter Round 1 2027 (opens 2 February, closes 18 March 2027); Snow Foundation for Canberra and the NSW South Coast (FRRR; NSW CBP; Ian Potter Foundation; Snow Foundation). VERIFIED
- The co-design channel for Feeding Australia ran to June 2026 and the strategy is still being drafted, so a regional evidence base can still feed it (DAFF timeline 2026). VERIFIED the opportunity is inferred

Weaknesses

- The ACT strategy is stalled by its own account: no actions "due to competing priorities and resource constraints"; the baseline study unreleased 20 months after delivery; no 2025-26 or 2026-27 appropriation confirmed; "A plan for a plan is not good enough" (ACT QON 267, 2025; Region Canberra February 2026). VERIFIED budget position is a gap
- Two councils with no food policy at all, and a joint organisation that files food under waste (Section A3.7). VERIFIED
- The regional broker is gone: CRFC dormant since the RDA merger (Section A3.7). VERIFIED inferred
- National strategy is 2027 at the earliest, with no resilience indicator set, no regional funding stream and $3.5 million over two years (DAFF 2026). VERIFIED
- Inquiry recommendations on supply chains and backup power are either stalled, unreported after 2023 or not adopted (Section A4.3). VERIFIED non-adoption is an open gap
- Grant funding for food is thin and mostly closed: the ACT grants portal "has no food relief grants"; grants.gov.au lists nothing titled food security; most foundations require DGR item 1 (ACT grants portal 2026; grants.gov.au). VERIFIED
- Planning rules work against small-scale food: QPRC roadside stalls capped at 10 square metres, agricultural produce industries confined to industrial zones; ACT rural leases prevent diversification; ACT industrial land is "at capacity" (QPR LEP 2022; Canberra Times February 2024; SGS 2026). VERIFIED

Verdict: governance is the function most within human control and the one that has moved least since 2020. INFERRED

5.10 Knowledge and data

Strengths

- The ABS 2020-21 LGA data cubes give a consistent, primary-source production baseline for all three areas (ABS 2020-21). VERIFIED
- NSW DPIRD publishes estuary-level oyster production annually; DPIRD publishes current beef and sheep gross margins (NSW DPIRD 2024-25; DPIRD June 2026). VERIFIED

- NARCliM2.0 (November 2025) gives numeric climate projections for the South East and Tablelands (Section A7). VERIFIED
- Mulloon is "the most comprehensively monitored catchment in Australia" with a 13-author results paper targeted for 2026 (Mulloon Institute Annual Report 2025). VERIFIED
- Measurement tools are ready: the USDA 18-item and 6-item household food security modules used by Foodbank, and the FAO Food Insecurity Experience Scale (Foodbank Hunger Report 2026; USDA ERS; FAO FIES). VERIFIED
- The OzHarvest 2025 heat map is the nearest thing to a current food access map for the ACT and Queanbeyan (Region Canberra August 2025). VERIFIED

Weaknesses

- The headline dependency figures are stale or unmeasured: "90 per cent of leafy greens and fruit from Sydney" traces to a 2012 study and 1992 ABS data; "over 95 per cent of all food" is an advocacy claim; "The last comprehensive study of the region's food system was completed in 2012"; "we have very little data about how much food is actually produced here" (ACT CED1H~3, 2024; ABC via inkl 2022; SGS 2026). VERIFIED
- The one commissioned baseline (Natural Capital Economics, 2024) is unreleased (ACT QON 267, 2025). VERIFIED
- No days-of-stock figure for any store, DC or town; no regional fuel days; no grocery freight volumes; no Princes Highway closure-day count (Section A8). GAP
- No food insecurity prevalence for the ACT (Foodbank sample 69), QPRC or Eurobodalla; no ACT food indicator in the Wellbeing Framework; the 2022 ACT General Health Survey dropped the food security question asked in 2019 (Foodbank 2026; ACT General Health Survey 2019 and 2022). VERIFIED
- No foodshed or self-sufficiency study for Canberra; no Land and Soil Capability or Important Agricultural Land map for the three areas; no measured rate of farmland loss; no 2024 to 2026 rural land price series (Sections A3.2 and A5.1). GAP
- Local plans are out of date or silent: Eurobodalla's LEMP has no public food provisions; QPRC's directory omits community gardens; the ABS Census site was down on the research date (Eurobodalla LEMP 2023; QPRC directory 2026). VERIFIED
- The ACT's most recent production figures before 2020-21 were "from 1992 when the ABS collected data" according to the University of Canberra (ABC via inkl 2022). VERIFIED

Verdict: the region is planning blind on the numbers that matter most (days of supply, local share, prevalence), and the one government study that would help is in a drawer. INFERRED

Area profiles

6.1 The ACT and Canberra basin

Item	Position as at November 2026
Population	489,700 at 31 March 2026, growing 1.3 per cent a year (ABS 2026) VERIFIED
Aged 65 and over	14.0 per cent (June 2025); 63,847 people in 2023, 29,162 of them 75 and over (Preventive health in the ACT 2026; Healthy Ageing in the ACT 2026) VERIFIED
Income and prices	Median household income $2,373 a week (2021); food prices up 20.6 per cent in five years to December 2024 (ABS QuickStats ACT; ACTCOSS 2025) VERIFIED
Households without a car	5.5 per cent of dwellings, about 9,000 (ABS QuickStats ACT 2021) VERIFIED count inferred
Farm production	$9.37 million (2020/21) on 20,869 ha of holdings and 43 ABS businesses; 159 to 160 families on 180 rural leases covering about 40,000 ha; 3,957 meat cattle, 31,643 sheep, no dairy, 137,368 dozen eggs, 13 ha apples, 11 ha vines (ABS 2020-21; ACT RDR Plan 2024) VERIFIED
Supermarket supply	Woolworths ambient from Wodonga, fresh from Wetherill Park, Moorebank RDC from November 2025; Coles from Kemps Creek; Aldi from Prestons; IGA from Metcash Huntingwood (Sections A3.4 and A5.5) VERIFIED IGA inferred
Processing	None: last milk plant closed 2023, Buttercup bakery closed, no abattoir, no cold store (Section A3.3) VERIFIED
Water	278 GL across four dams on three catchments; 93.2 per cent on 23 December 2025 (Icon Water; Braidwood Times 2025) VERIFIED
Roads in	Hume, Federal and Barton Highways from Sydney and Wodonga; Monaro Highway; Kings Highway from the coast (Transport for NSW; SEATS 2017) VERIFIED
Food relief	OzHarvest about 28,000 meals a week to 64 to 65 agencies with 22 waitlisted; 43 pantries in the Canberra Food Relief Network; Foodbank stock from Glendenning (Region Canberra 2025; Canberra Food Relief Network 2024; ACT Food Relief Action Plan 2026) VERIFIED
Governance	Canberra Region Local Food Strategy 2024-2029 (stalled August 2025); Food Relief Action Plan 2026-2028; Regional Drought Resilience Plan (2024); no supply chain contingency plan (Section A3.7) VERIFIED

Strengths

- The largest consumer market and the strongest demand-side assets in the region: about 7,000 customers a Saturday at EPIC, 80.1 per cent buying local to support community, about half growing some food (Section A5.8). VERIFIED
- The most secure drinking water in the three areas (Section A5.2). VERIFIED
- The only jurisdiction with a food strategy, a drought plan and a relief plan, and the only one to have costed a hub and assessed a micro-abattoir (Section A3.7). VERIFIED
- High car ownership and a dense retail network, which makes everyday access resilient to any single store closing (Section A5.6). VERIFIED the resilience reading is inferred
- Two freight corridors (Sydney and Wodonga) for Woolworths ambient grocery, unlike the coast's one (Section A3.4). VERIFIED the comparison is inferred

Weaknesses

- Produces almost nothing it eats: output of a few dollars per resident per year; "does not produce significant quantities of produce within its borders" (SGS 2026; ACT RDR Plan 2024). VERIFIED the per-resident figure is inferred

- No intermediate buffer between Sydney and the shelf since the Goulburn DC, Canberra Milk and Buttercup closures (Section A3.3). VERIFIED
- The strategy has delivered studies, not infrastructure; the baseline is unreleased; the one land decision displaced Canberra City Farm (Section A3.7). VERIFIED
- Rural tenure and expansion pressure: Majura Valley leases, Western Edge, LMAs (Section A5.1). VERIFIED
- Relief demand rising 25 to 75 per cent with no measured prevalence and a freight-dependent supply line (Section A5.7). VERIFIED
- Varroa reaching every hive by end 2027 in a city where about half of households grow some food and 95 per cent of hives are hobbyist (Region Canberra October 2026; Canberra Times 2024). VERIFIED the exposure is inferred

Specific exposures of older residents

- About 9,000 carless dwellings and a 75-plus cohort of 29,162 and growing: a fuel shock or a long power outage removes shopping access for both groups at once (ABS QuickStats 2021; Healthy Ageing in the ACT 2026). VERIFIED the exposure is inferred
- Diet quality is already poor: 49.3 per cent of people 65 and over did not meet fruit guidelines and 95.1 per cent did not meet vegetable guidelines in 2021 (Healthy Ageing in the ACT 2026). VERIFIED
- Income support recipients are "14 times more likely to skip one or more meals per day than the general population" (ACTCOSS 2025). VERIFIED
- Relief hotspots include Narrabundah and Tuggeranong; the 2013 food desert study flagged the Narrabundah caravan park and inner south pockets, with no later mapping (Region Canberra August 2025; Canberra Times 2013). VERIFIED gap on current mapping
- Queanbeyan residents, including Young Street, were excluded from ACT-funded hampers in 2020 (Region Canberra April 2020). VERIFIED

6.2 Queanbeyan-Palerang

Item	Position as at November 2026
Population	67,633 at 30 June 2025; 79,699 projected for 2036 (City Population; QPRC Operational Plan 2025-2029) VERIFIED
Aged 65 and over	About 13.7 per cent LGA-wide (9,157, 2024); Braidwood 30.3 per cent with a median age of 48 (City Population; ABS QuickStats Braidwood 2021) VERIFIED
Income	Median household income $2,310 a week; Braidwood $1,367; SEIFA 1061 (QPRC Operational Plan; ABS QuickStats Braidwood; QPRC CSP 2042) VERIFIED
Car dependency	74.1 per cent drove to work; 62.1 per cent of households with two or more vehicles; 1.2 per cent public transport; Braidwood 2.8 per cent of dwellings without a car (QPRC Operational Plan; ABS QuickStats Braidwood) VERIFIED
Farm production	$43.06 million (2020/21) on 166,184 ha and 225 businesses; 38,877 meat cattle, 128,210 sheep, 108,977 dozen eggs, 36.9 ha vegetables, 59 ha fruit; Mulloon Creek 28,700 hens (ABS 2020-21; Mulloon Institute 2025) VERIFIED
Markets and hubs	Braidwood Farmers Market; Southern Harvest market, store and box scheme at Bungendore; Southern Harvest Queanbeyan market; Braidwood saleyards 10,570 cattle (2024/25) (Section A3.5; MLA 2025) VERIFIED
Retail	Coles and Woolworths at Riverside Plaza, Queanbeyan; IGA at Bungendore and Braidwood; Mama Tierra at Captains Flat (2026); no confirmed food retail at Nerriga, Araluen or Majors Creek (Section A3.4) VERIFIED villages a gap
Processing	None in the LGA; weekly meat from Moruya; service kills via Moruya; Southern Harvest kitchen (Section A3.3) VERIFIED
Water	Queanbeyan, Googong and Jerrabomberra from Icon Water; Bungendore bores at 216 ML a year with one offline for PFAS; Braidwood from the Shoalhaven River into 72 ML storage; Captains Flat's own dam (QPRC Water pages; QPRC pipeline factsheet 2025) VERIFIED

Item	Position as at November 2026
Roads	Kings Highway through Bungendore, Braidwood and Clyde Mountain; Araluen Road to Moruya; Nerriga Road to Nowra; Monaro Highway (Transport for NSW; Canberra Times 2013) VERIFIED
Food relief	Concentrated in Queanbeyan and Karabar (St Benedict's, Anglicare Food Fair, Salvation Army, Vinnies, vouchers); Meals on Wheels Queanbeyan; Braidwood Life Centre; Bungendore Food Hub; none listed for Captains Flat, Nerriga, Araluen or Majors Creek (QPRC directory April 2026) VERIFIED
Governance	No food strategy; LSPS 2020 (protect agricultural land, investigate mobile abattoirs); LEP 2022; REDS 2023; Delivery Program funds saleyards works and pipeline design only (Section A3.7) VERIFIED

Strengths

- The region's production heartland: 81 per cent of the land and 57 per cent of the farm-gate value, with "a leading location for livestock production" at Braidwood and agriculture GVA growing 9.7 per cent a year from 2011 to 2020 (ABS 2020-21; REDS 2023). VERIFIED shares inferred
- The strongest local-food institutions in the three areas: Southern Harvest's permanent Bungendore base and the Mulloon Institute's 23,000 ha catchment work (Sections A3.5 and A5.1). VERIFIED
- Enterprise diversity and willingness to innovate: truffles, black garlic, regenerative farming, Mulloon eggs, Araluen's surviving orchards, "Intellectual resources and a willingness among landowners to try new enterprises" (REDS 2023; Commercial Agriculture in Palerang 2015). VERIFIED
- Proximity to Canberra gives off-farm income and "resilience" (Commercial Agriculture in Palerang 2015). VERIFIED
- Queanbeyan's drinking water is the ACT's (Section A5.2). VERIFIED
- Volunteer networks that held through fire and COVID: Phil's Emporium and the Bungendore Food Hub grew from the 2017 Carwoola fire; "our communities have shown there is this resilience and support for our farmers and smallholders" (ABC via inkl 2022; About Regional 2024). VERIFIED

Weaknesses

- A commodity grazing economy with a thin local-food layer: most beef leaves as live cattle to interstate buyers; no abattoir, no cold store, a saleyard needing $2.2 million against $546,000 budgeted (Sections A3.2, 3.3 and 3.7). VERIFIED the export pattern is inferred
- Single-route exposure for Braidwood and the coast trade: Clyde Mountain closures cut Braidwood business revenue "about 75 per cent" in 2021 (Region Canberra August 2021). VERIFIED
- Town water fragility at Bungendore and Braidwood, the two towns nearest the Sun Villages hinterland site (Section A5.2). VERIFIED
- No council food policy, no community gardens in the directory, relief absent from the villages with the longest supply lines (Sections A3.6 and A3.7). VERIFIED
- Land fragmentation and speculation near Canberra, and the 2025 Googong rezoning against the 2016 strategy's catchment warning (Section A3.7). VERIFIED tension inferred
- Contamination constraints on home growing at Captains Flat (lead) and water at Bungendore (PFAS) (Section A5.1). VERIFIED
- Araluen's orchards cut off from markets for 31 months by a road in another council's area (Section A4). VERIFIED

Specific exposures of older residents

- Braidwood is the oldest town in the LGA (30.3 per cent aged 65 and over, median income $1,367) and the one most exposed to Kings Highway closures and water shortage, with a single relief centre and a Friday pantry (ABS QuickStats Braidwood; QPRC directory 2026). VERIFIED exposure inferred
- Meals on Wheels Queanbeyan delivered about 1,200 meals a month in 2019 across Queanbeyan, Bungendore, Braidwood, Captains Flat, Sutton and Michelago; current figures were not found (Region Canberra 2019). VERIFIED current scale a gap

- The rural east was about 17 per cent aged 65 and over in 2016 against 9 per cent in the west, so ageing is concentrated where relief and transport are thinnest (Palerang Rural Lands Strategy 2016). VERIFIED the overlap is inferred
- Captains Flat residents went 15 years without a grocer and still have no listed food relief (Region Canberra October 2026; QPRC directory 2026). VERIFIED
- Queanbeyan's relief agencies have "a queue out the door when they open" and little storage; a donated commercial fridge was needed to store perishables again (Region Canberra August 2025). VERIFIED
- Access to public transport is rated 2.4 out of 7 by residents (QPRC CSP 2042). VERIFIED

6.3 Eurobodalla and Narooma

Item	Position as at November 2026
Population	41,309 at 30 June 2025 (ERP) or 42,392 (council 2025); 47,407 forecast for 2036; summer peak "about 130,000" (City Population; Eurobodalla Delivery Program 2025-29; draft LSPS 2020) VERIFIED two 2025 figures differ
Aged 65 and over	33.8 per cent (13,896) in 2024; median age 54; 42 in 100 aged 60 or over; 33 in 100 live alone; Narooma about 39 per cent, median age 58, 40.4 per cent lone-person households (City Population; Eurobodalla CSP 2042; gdp.com.au Narooma) VERIFIED
Income	Median household income $1,167 a week (Narooma $926); 31 per cent of households under $800; SEIFA 972; 22 per cent renting; 8 per cent need assistance with core activities (ABS QuickStats Eurobodalla; Delivery Program 2025-29) VERIFIED
Car dependency	70 per cent drive to work; 4.3 per cent of dwellings (713) without a car; Narooma 7.9 per cent; public transport access measure 2.3 (Eurobodalla CSP 2042; ABS QuickStats; gdp.com.au Narooma) VERIFIED
Farm and sea production	$22.98 million (2020/21) on 18,582 ha and 69.5 businesses, milk $11.28 million from 2,674 cows; oysters about $13.8 million across Clyde, Wagonga and Tuross (2024/25), Wagonga $4.25 million; 7.65 ha vegetables (ABS 2020-21; NSW DPIRD 2024-25) VERIFIED oyster total inferred
Markets and local food	SAGE Farmers Market (Tuesdays, Moruya) and programs; Tilba Growers Market; Southlands at Moruya and Narooma; Eurobodalla Food Trail; Narooma Oyster Festival 10,500 attendees (Section A3.5; Narooma Oyster Festival 2026) VERIFIED
Retail	Woolworths at Narooma, Moruya and Batemans Bay; Coles and Aldi at Batemans Bay; IGA at Moruya and Malua Bay; Woolworths Bermagui next door (Section A3.4) VERIFIED
Processing	Tilba Real Dairy (15,000 litres a day capacity) and Bodalla Dairy; a Moruya abattoir for cattle, sheep and goats (2015 reference); no cold store found (Section A3.3) VERIFIED abattoir status dated
Water	Deep Creek Dam (4,900 ML) fed from the Deua, plus Tuross run of river; Northern plant 20 ML a day, exceeded in summer; Southern Storage 3,000 ML, dam wall complete December 2025, filling through 2026 (ESC water supply page; About Regional 2023; ESC December 2025) VERIFIED
Power	Two 132 kV lines from the north; over 1,000 properties off for more than 12 days in January 2020 (ESC submission 2020; The Beagle January 2020) VERIFIED
Roads	Princes Highway (B-double limited; Moruya bypass unfunded; Narooma bridge at feasibility); Kings Highway; Snowy Mountains Highway via Bega; Araluen Road (Section A5.5) VERIFIED
Food relief	Anglicare hub and Pantry Club at Moruya; OzHarvest Narooma hampers; Monty's Place (over 60 free meals a week); Meals on Wheels (180 clients, 2021); SHASA food packs (Section A3.6) VERIFIED
Governance	No food strategy; Climate Action Plan 2022-32; LEMP edition 4 (November 2023); Local Flood Plan (July 2023); Delivery Program and Operational Plan silent on food beyond an oyster trail (Section A3.7) VERIFIED

Strengths

- The region's dairy and seafood base and its best-known food brand: "one of the best oyster growing regions in the world", every south coast estuary under grower environmental management systems since 2013 (Narooma Oyster Festival 2026; FRDC 2013). VERIFIED
- Higher rainfall and warmer winters than the tablelands, and the highest beef gross margin per hectare in DPIRD's budgets (Section A5.1). VERIFIED
- A local-food movement that worked in the emergency: Southlands open through the fires, SAGE's volunteers, Monty's Place feeding emergency services, Tilba milk to local shelves (Section A5.8). VERIFIED
- SHASA's haven network (Tilba Halls, Narooma CWA, Moruya CWA, Batemans Bay Uniting) with solar and batteries, and council's independent power at evacuation venues (Section A5.8). VERIFIED
- The Southern Storage, the one major resilience asset built since 2020 (Section A5.2). VERIFIED
- Water quality recovery and estuary restoration at Wagonga: 3 million oysters on the Living Shoreline reef, QX not detected 2023 to 2025 (About Regional 2025; FRDC 2026). VERIFIED

Weaknesses

- A one-road, one-grid, import-dependent food economy at the end of the line: all food other than oysters, milk and small quantities of beef and vegetables arrives by truck along a B-double-limited highway (Sections A3.4 and A5.5). VERIFIED the dependency reading is inferred
- The only documented failure of grocery supply in the three areas happened here and lasted roughly 6 to 9 days (Section A4). VERIFIED duration inferred
- Retailers and fuel stations have taken little resilience action since 2020 and no regulation requires it (ESC Report to Council 2022). VERIFIED non-adoption an open gap
- Scarce good land (3 per cent Class 1 and 2), part-time farming, falling dairy numbers, succession problems, "not on the radar for new or young farmers" (Eurobodalla Discussion Paper 2, 2015; Region Canberra July 2026). VERIFIED partly dated
- Oyster volumes falling and environmentally exposed (rainfall closures, sewage overflows, algal blooms, warming water); heat named a high climate risk to aquaculture (Section A5.3). VERIFIED
- Thin relief in Narooma with the shire's hub 51 km away; the lowest incomes in the three areas; housing stress driving demand (Section A3.6). VERIFIED
- Plans that have not translated "Improving food security" (a 2021 community priority) into any council action (Section A3.7). VERIFIED
- The Deputy Premier's forecast of at least a month's Kings Highway closure in December 2019 came true, and the bypasses that would add redundancy are a decade or more away (Canberra Times 2020; Transport for NSW 2024 and 2026). VERIFIED the timing judgement is inferred

Specific exposures of older residents

- The oldest population in the three areas and one of the oldest in NSW: about 5,500 people aged 75 and over in 2021, 13,896 aged 65 and over in 2024, 33 in 100 living alone, against 180 Meals on Wheels clients in 2021 (ABS QuickStats; City Population; Eurobodalla CSP 2042; The Beagle 2021). VERIFIED the ratio is inferred
- Narooma is the most age-exposed town: median age 57 to 58, about 39 per cent aged 65 and over, 40 per cent living alone, 7.9 per cent without a car, 51 km from the hospital, the main pantry and the agricultural market (gdp.com.au Narooma; City Population Narooma; Wikipedia Narooma). VERIFIED the ranking is inferred
- Black Summer precedent: "The elderly were housed together in the sports centre, with their names pinned to them"; gastro outbreaks at the Narooma and Moruya centres; older residents without social media lost information when radio failed; Meals on Wheels lost its freezers (The Beagle diary 2020; The Beagle January and May 2020). VERIFIED
- Heat: "Those most at risk from heat stress include the elderly, disabled and the young"; climate change may leave vulnerable people "potentially more socially isolated" (Eurobodalla Climate Action Plan 2022-32). VERIFIED

- Flood: Moruya District Hospital and IRT Moruya aged care are affected at the 5 per cent AEP flood level (4.2 m on the Moruya gauge); Glendeuart Estate (over 60 properties) is isolated for several days at 2.6 m (Eurobodalla Local Flood Plan 2023). VERIFIED
- Health access: 0.85 GPs per 1,000 against 1.13 for NSW and 40 per cent reporting problems accessing health services, mainly limited local services or transport (ESC Our Story 2016). VERIFIED dated
- Aged care meal funding is in transition and Meals on Wheels is seeking fuel-cost relief (Section A5.7). VERIFIED
- Dalmeny, the suburb between Kianga and Narooma, had 816 residents aged 65 and over of 2,329 in 2011, 171 of them living alone (Eurobodalla Local Flood Plan, 2011 data). VERIFIED dated

Outlook to 2040

IN SHORT

The region will be hotter, drier in winter and spring, older and more crowded on the same roads, with no national food resilience framework in force before mid 2027 and no corridor redundancy funded before the late 2020s at the earliest. The tablelands-to-coast contrast is the one structural asset that improves rather than worsens under these trends, provided the roads that join the two stay open. INFERRED from the verified projections below

7.1 Climate projections with figures

- South East and Tablelands (NARCliM2.0, NSW DCCEEW, November 2025; baseline 1990 to 2009, mean 12.7 degrees, 743 mm): mean temperature up 1.4 degrees by 2050 (range 0.8 to 1.9) and 2.5 degrees by 2090 (1.7 to 3.6) under the medium scenario, 1.8 and 3.6 under high; hot days over 35 degrees up from 4.4 a year by 5.0 (2050) and 10.3 (2090, range 4.1 to 19.2) medium, 15.9 by 2090 high; cold nights below 2 degrees down from 88.9 a year by 23.2 (2050) and 39.3 (2090) medium, 55.2 high; annual rainfall down 7.5 per cent by 2050 and 18.2 per cent by 2090 medium, with winter down 28.3 per cent and spring down 19.4 per cent by 2090; severe fire weather days (FFDI over 50) up from a model baseline of 1.2 a year by 0.6 (2050) and 1.7 (2090) medium. Ranges include wetter outcomes (NARCliM2.0 South East and Tablelands snapshot 2025). VERIFIED
- The snapshot names Narooma, Queanbeyan and Batemans Bay among its towns but gives no data on drought, heatwaves, rainfall extremes or flooding (NARCliM2.0 snapshot 2025). VERIFIED GAP
- Illawarra Shoalhaven (the Princes Highway corridor north of Eurobodalla): mean temperature up 1.3 degrees by 2050 and 2.2 by 2090 medium; annual rainfall (baseline 1,100 mm) down 9.6 per cent by 2050 and 16.2 per cent by 2090 medium; winter rainfall down 34.2 per cent by 2090 (NARCliM2.0 Illawarra Shoalhaven snapshot 2025). VERIFIED
- ACT (Regional Drought Resilience Plan, RCP 8.5 middle): up 1.8 degrees by 2045 and 3.3 by 2070 against 2000; days above 35 degrees up by at least 11 a year by 2045 and 18 by 2070; rainfall down 3.1 per cent (2045), 9 per cent (2070) and 9.3 per cent (2090); consecutive dry days from 27 to 36 by 2090; soil moisture down 11 per cent a year by end of century; Canberra's 2050 climate would resemble Wagga or Echuca under the hottest, driest scenario (ACT RDR Plan 2024). VERIFIED
- Eurobodalla (council-adopted, Climate Action Plan 2022-32): maximum temperatures up 1.8 to 2.5 degrees in the far future; spring and winter rainfall down, summer rainfall up by 2070; more severe fire weather days; sea level up 23 cm by 2050 and 72 cm by 2100 above 2014 (Eurobodalla Climate Action Plan 2022-32). VERIFIED This conflicts with NARCliM2.0's medium-scenario summer rainfall fall of 15.3 per cent by 2090; the council figure predates NARCliM2.0 (NARCliM2.0 snapshot 2025). VERIFIED conflict noted
- Sea level at Eden (AdaptNSW, IPCC AR6, relative to 1995 to 2014): 11 to 25 cm (low) or 15 to 28 cm (high) by 2050; 22 to 57 cm (low) or 51 to 92 cm (high) by 2100; coastal erosion, estuarine inundation and overwash expected to increase (AdaptNSW South East and Tablelands). VERIFIED
- Observed trend (State of the Climate 2024): Australia 1.51 degrees warmer since 1910; south-east April to October rainfall down about 9 per cent since 1994, "the most sustained large-scale rainfall change since observations began"; daily rainfall extremes rise about 8 per cent per degree of warming; the Tasman Sea is warming at about twice the global average (0.4 degrees a decade); fewer east coast lows but larger impacts; more frequent marine heatwaves; extreme sea levels with a one-in-100-year probability projected to become annual by mid-century under higher emissions (CSIRO and BoM State of the Climate 2024). VERIFIED

- Hazard cost: NSW average annual disaster damage of $3.1 billion projected to reach $9.1 billion a year by 2060; about 97 per cent of disaster funding goes to response and recovery (NSW State Disaster Mitigation Plan 2024). VERIFIED
- Local runoff: the 2016 Palerang strategy projected catchment runoff down about 10 per cent by 2030 and 25 to 50 per cent by 2070 (Palerang Rural Lands Strategy 2016). VERIFIED dated
- Oyster-specific: QX outbreaks are preceded by rainfall and water temperatures consistently above 21 degrees; "almost every ten years or so, we get a QX outbreak in a new area"; the rainfall events that trigger outbreaks "are becoming more frequent and intense"; council rates heat a high risk to aquaculture (FRDC 2026; Eurobodalla Climate Action Plan 2022-32). VERIFIED

What it means for food

- Tablelands: 23 to 55 fewer cold nights by 2090 lengthens the frost-free season for horticulture and viticulture at Lake George and Araluen; winter and spring rainfall down 20 to 28 per cent is the most consequential change for dryland pasture, dam filling and the dominant grazing industry; 10 to 16 more days over 35 degrees raise heat stress for livestock, pollinators and summer horticulture (NARCliM2.0 2025). INFERRED from verified projections
- Coast: warmer estuaries approach the QX window, more intense short-duration rainfall after fire brings sediment and algal blooms, sea level rise threatens the Narooma foreshore where the Living Shoreline was designed to let habitats migrate "as the sea rises" (FRDC 2026; Illawarra Mercury 2023). VERIFIED the chain is inferred
- Corridor: more severe fire weather days, more intense short-duration rainfall (the landslip trigger on Clyde and Brown Mountains) and higher coastal inundation at low-lying Princes Highway crossings bear directly on road availability; a rise of 1 to 2 severe fire weather days a year against a baseline near 1 is modest in count, so interannual variability of the 2019/20 kind will dominate (NARCliM2.0 2025). INFERRED
- Water: Icon Water already finds the region "less water secure than previously forecast" and is investigating new or augmented dams, more river pumping, groundwater, demand management, recycled water and desalination (Icon Water Water for Generations). VERIFIED

7.2 Demographic ageing

- ACT: 82,459 people aged 65 and over (14.9 per cent) by 2033 and 133,117 (16.6 per cent) by 2065; 75-plus share 8.7 per cent by 2065; the 65-plus cohort has grown 5.02 per cent a year since 1971 and is "the only demographic expected to grow to 2060"; old-age dependency ratio from 20.4 per cent (2024/25) to 32.1 per cent (2065/66); population nearly 700,000 by 2050 (Healthy Ageing in the ACT 2026; Preventive health in the ACT 2026; MACA submission; Centre for Population 2025; act.gov.au 2025). VERIFIED
- QPRC: 79,699 by 2036 and 85,084 by 2041, about 6,500 more dwellings needed by 2036; Bungendore 5,066 and Braidwood 2,150 by 2036; Googong planned for about 18,000; the LSPS carries actions on housing, services and transport for the ageing populations of Braidwood and Bungendore; growth at Bungendore is "hostage" to an unfunded pipeline (QPRC Operational Plan; QPRC LSPS 2020; Wikipedia Googong; QPRC pipeline page 2026). VERIFIED "hostage" is inferred
- Eurobodalla: 47,407 by 2036 (council) or approaching 44,800 (forecast.id); 34.1 per cent aged over 65 by 2036; a 23.7 per cent increase in retirement-age residents between 2016 and 2026; Tuross Head and Dalmeny attract retirees and see only moderate growth "because of lower demand and relative isolation"; the shire loses 18 to 24 year olds; a 2016 projection put the 2031 average daily population at 55,000 and the peak above 100,000 (Eurobodalla Delivery Program 2025-29; forecast.id; draft LSPS 2020; ESC Our Story 2016). VERIFIED
- Nutrition risk: Dietitians Australia states "Around 50% of older Australians are at risk of or have malnutrition", with social isolation, financial or food access problems and difficulty shopping or cooking among the risk factors; the figure is uncited on the page (Dietitians Australia). VERIFIED as stated
- Aged care funding: Support at Home from 1 November 2025 with eight levels; CHSP, which funds most Meals on Wheels meals, to transition "no earlier than 1 July 2027"; participant contribution rates for meals were not found in published sources (Department of Health 2026; OPAN; My Aged Care). VERIFIED rates a gap

7.3 Water

- Canberra: options under investigation include new or augmented dams, more river pumping, groundwater, recycled water and desalination; the Tantangara transfer was endorsed in 2009 with 9,549 ML high security and 12,523 ML general security NSW entitlements; average annual inflow 206,000 ML with a range of 60,000 to 411,000 ML (Icon Water Water for Generations; BoM National Water Account 2013). VERIFIED
- Bungendore: no committed construction funding for the $78 million pipeline; council will seek the Local Infrastructure Fund; a revised ACT-NSW water supply MoU has reached committee consensus; the IWCM strategy for Bungendore, Braidwood and Captains Flat is under review in 2026 (QPRC pipeline page 2026; QPRC Water and Sewer). VERIFIED
- Eurobodalla: the Southern Storage fills and commissions through 2026 and will be drawn only in drought; a Narooma Recycled Water Project is under investigation; Narooma sewer and STP upgrades are budgeted in 2026/27 (ESC December 2025; Eurobodalla Delivery Program 2025-29; Operational Plan 2026-27). VERIFIED
- Agriculture: no new irrigation source is planned anywhere in the three areas; the Southern Storage's 581 ML a year for irrigators and stock is about 19 per cent of its capacity; coastal Type 2 harvestable-right dams cannot irrigate (National Water Grid Authority; Harvestable Rights Order 2022). VERIFIED the share is a calculation

7.4 Land

- ACT: the urban growth boundary proposal is due by mid 2027 with a Territory Plan amendment by June 2027; the Eastern Broadacre Strategic Assessment release is expected early 2027; about 37 Western Edge studies are complete; the Landscape Plan announced in March 2026 does not mention agricultural land; the Chief Minister says "The default is that no new suburbs can be built in these areas"; the Commissioner for Sustainability and the Environment "calls for a comprehensive ACT agricultural policy" including "resolving lease uncertainty for rural leaseholders" (ACT progress statements 2026; Orr media release March 2026; Region Canberra September 2026; OCSE 2025). VERIFIED Whether Majura Valley's 25-year leases have been issued is unknown. GAP
- NSW: DPIRD "has started work to create agricultural land mapping for public consultation in 2026"; no Important Agricultural Land map yet covers QPRC or Eurobodalla (NSW DPIRD mapping page; NSW DPI IAL FAQs). VERIFIED
- QPRC: growth of 18,566 people to 2036 against a 2016 strategy to limit rural subdivision under 80 ha and protect the Googong and Captains Flat catchments (QPRC LSPS 2020; Palerang Rural Lands Strategy 2016). VERIFIED
- Eurobodalla: more than 5,700 new dwellings assumed by 2036; the 2015 consultants urged council to "hold the line" on holdings of 100 ha and over (forecast.id; Eurobodalla Discussion Paper 2, 2015). VERIFIED
- Pollination: Varroa is expected in every Canberra hive by end 2027, with pyrethroid and amitraz resistance already confirmed in NSW; any expansion of apple, cherry, berry or stone fruit plantings must budget for paid hives (Region Canberra October 2026; NSW DPIRD Varroa page; ABC November 2025). VERIFIED the budgeting point is inferred

7.5 Policy pipeline

- Commonwealth: Feeding Australia drafting from July 2026, release mid 2027; the National Food Council's supply chain assessment on diesel and fertiliser; a national freight and supply chain network model due in 2026 under the Food for Thought response; the 2026 Government response to Australian Food Story (content unread); the fuel package (Australian Fuel Security Reserve of about 1 billion litres, MSO lifted to 50 days, $7.5 billion Fuel and Fertiliser Security Facility, $55 million rail and ship freight pilot, weekly fuel stock publication); DAFF preparing for H5N1 (DAFF timeline 2026; Crawford Fund 2026; Food and Drink Business August 2026; Budget 2026-27; fuelplan.gov.au; DAFF avian influenza page). VERIFIED There is as yet no national target, indicator set or regional funding stream for a plan to align with. INFERRED

- NSW: a second, five-year State Disaster Mitigation Plan "to be delivered in 2026"; place-based Disaster Adaptation Plans under the Reconstruction Authority; agricultural land mapping consultation in 2026; AFSA's May 2026 request for a micro-abattoir planning pathway unanswered in the sources read (NSW Reconstruction Authority 2026; NSW DPIRD; AFSA 2026). VERIFIED
- ACT: Local Food Strategy review after four years (2028); Food Relief Action Plan 2026-2028 with undated actions including a shared cold and dry storage warehouse; a decision pending on the SGS two-phase hub; urban agriculture on unused government land and a food-growing education platform listed as next steps; the urban growth boundary by mid 2027 and an integrated Planning and Transport Strategy by 2028; $182.6 million over four years for community support including food relief in the 2026-27 Budget; pollinator protection motion passed with no new funding (ACT CED1H~3, 2024; ACT Food Relief Action Plan 2026; act.gov.au strategy page; ACT progress statements 2026; The Australia Today 2026; Region Canberra October 2026). VERIFIED
- QPRC: saleyards upgrades of $461,000 in 2027/28 and a service review; IWCM review in 2026; pipeline funding bid to the Local Infrastructure Fund; Bungendore Overflow Channel ($3.16 million) and Braidwood drainage ($3.12 million) flood works; lead containment cell at Captains Flat to mid 2026 (QPRC Operational Plan 2025-2029; QPRC pipeline page 2026; QPRC Captains Flat Lead page). VERIFIED
- Eurobodalla: Moruya co-located emergency services precinct ($4 million in 2026/27); Southern Storage commissioning; a rock oyster experience trail; advocacy for highway upgrades; Narooma bridge feasibility only (Operational Plan 2026-27; Transport for NSW 2025). VERIFIED
- Transport: Milton Ulladulla bypass construction "tentatively late 2028" with no completion date; Moruya bypass corridor reserved with no funding; Murrengenburg landslip repairs to about August 2026 with possible full closures; Mulloon safety works from 20 May 2026 (Transport for NSW 2024 and 2026). VERIFIED
- Sector: Food Connect Foundation's "Regenerating the Regions" report on regional food hubs launches 23 and 25 November 2026; Sustain's council food systems forum on 19 November; Ian Potter Round 1 2027 (2 February to 18 March) (Food Connect Foundation; Sustain; Ian Potter Foundation). VERIFIED

7.6 The tablelands-to-coast complementarity as an asset

- Biophysical basis: Canberra Airport 637 mm and a July minimum of 0.1 degrees; Braidwood 722 mm and minus 0.2; Moruya Heads 955 mm and 5.9 degrees; Narooma 923 mm with a mean annual minimum of 12.0 degrees; the coast carries a cow and followers on 1.73 ha against 3.72 ha inland (BoM 2026; DPIRD June 2026). VERIFIED
- Production basis: the tablelands hold the beef, lamb, wool and egg surplus and the cool-season vegetable potential of the Monaro and Upper Lachlan (cabbages, potatoes, mushrooms); the coast holds the milk (Eurobodalla, Bega, Shoalhaven), citrus, oysters, fish and winter-active pasture (ABS 2020-21). VERIFIED the pairing is inferred, no source models it
- The flows already exist in miniature: Braidwood's market sells Batemans Bay fish; Araluen's second orchard sells "down the coast"; Tilba milk reached Woolworths shelves and Canberra when roads closed; Bungendore's butcher takes Moruya meat every Monday; Southern Harvest sources "Temora to Bega Valley" and lists SAGE NSW Inc and SCPA South East Producers as partners; the Capital Region Farmers Market admits Eurobodalla and Bega Valley producers; Southlands supplies venues from Durras to Cobargo (Braidwood Times 2019; Region Canberra December 2025 and 2023; Canberra Times 2015; HerCanberra 2026; Southern Harvest 2026; CRFM rules; Narooma News 2024). VERIFIED
- Climate hedging: drought on the tablelands (2017 to 2020, late 2025) coincided with wetter coastal conditions in 2024/25 at Mulloon's own account of eastern Australia, and a coastal summer rainfall increase (council projection) would run against a tablelands decline; the two zones fail on different weather (Mulloon Institute Annual Report 2025; Eurobodalla Climate Action Plan 2022-32). INFERRED from verified sources; the coastal summer trend is contested
- Policy fit: AdaptNSW's regional adaptation vision is to consolidate extensive grazing on best-suited land, have Bega Valley dairying adopt seasonal practices and "source milk from outside the region", and have agriculture service centres "support local processing" (AdaptNSW South East and Tablelands). VERIFIED

- The caveat that governs everything: the two zones are joined by Clyde Mountain and Araluen Road, both of which closed in 2019/20 and have closed since; the complementarity hedges weather, not roads, and the one event that tested it cut both directions at once (Sections A4 and A5.5). INFERRED Any food logistics between the Sun Villages tablelands sites and Kianga must plan on a 200 km plus road trip over a pass with a documented closure record. INFERRED from mapped distances and the closure record

Evidence register

8.1 Key figures

Figure	Value	Date	Label	Source
ACT population	489,700	31 March 2026	verified	ABS National, state and territory population
ACT aged 65 and over	14.0 per cent; 63,847 people (2023)	June 2025; 2023	verified	Preventive health in the ACT 2026; Healthy Ageing in the ACT 2026
QPRC population	67,633	30 June 2025	verified	City Population (ABS ERP)
QPRC aged 65 and over	about 13.7 per cent (9,157)	2024	verified	City Population
Braidwood aged 65 and over	about 30.3 per cent, median age 48	2021 Census	verified	ABS QuickStats Braidwood UCL
Eurobodalla population	41,309 (ERP) or 42,392 (council)	30 June 2025	verified, conflict	City Population; Eurobodalla Delivery Program 2025-29
Eurobodalla aged 65 and over	33.8 per cent (13,896)	2024	verified	City Population
Narooma aged 65 and over	about 39 per cent; median age 58; 40.4 per cent lone-person; 7.9 per cent no car	2021 Census	verified, third-party profile	City Population Narooma; gdp.com.au Narooma
Eurobodalla summer population	about 130,000	2020 statement	verified	Eurobodalla draft LSPS 2020
ACT farm gross value	$9.37 million	2020/21	verified	ABS VACP 2020-21
ACT farm gross value, alternative	$9 million (2020/21); $34 million (2019)	2020/21; 2019	verified, conflict	ACT RDR Plan 2024; ACT Discussion Paper 2021
QPRC farm gross value	$43.06 million	2020/21	verified	ABS VACP 2020-21
QPRC agriculture GVA	$77 million; 553 jobs	2020; 2021	verified, different measure	REDS 2023
Eurobodalla farm gross value	$22.98 million (milk $11.28 million)	2020/21	verified	ABS VACP 2020-21
Three-area holdings and businesses	205,635 ha; 338 businesses; 144 ha of vegetables, fruit, nuts and vines	2020/21	inferred, summed from ABS rows	ABS Agricultural Commodities 2020-21
Three-area livestock	50,629 meat cattle; 163,855 sheep and lambs; 2,679 dairy cows; 12,911 layers	2020/21	inferred, summed	ABS Agricultural Commodities 2020-21

Figure	Value	Date	Label	Source
ACT rural estate	159 to 160 families, 180 leases, about 40,000 ha, 15 per cent of the ACT	2024	verified	ACT RDR Plan 2024; ACT QTB 21
Wagonga Inlet oysters	331,323 dozen, $4,246,008	2024/25	verified	NSW DPIRD Aquaculture Production Report 2024-25
Eurobodalla three-estuary oysters	about 1,014,000 dozen, about $13.77 million	2024/25	inferred, summed	NSW DPIRD 2024-25
NSW oyster total	5,470,931 dozen, $71,665,430; 232 permit holders	2024/25	verified	NSW DPIRD 2024-25
Mulloon Creek Natural Farms	28,700 hens, 294 cows	2024/25	verified	Mulloon Institute Annual Report 2025
Mulloon Rehydration Initiative	23,000 ha, 50 km of streams, 20 km rehabilitated	2025	verified	MRI Case Study 2025
Mulloon benefit-cost	$650,000 benefits against $525,000 costs (ratio 1.24); 3.6 to 1 claimed internationally	2025	verified figures; ratio inferred	MRI Case Study 2025; UNCCD case study
Braidwood saleyards	10,570 cattle; $2.2 million of works recommended; $546,000 budgeted to 2027/28	2024/25	verified	MLA Saleyard Survey 2024-25; Braidwood Saleyards Assessment 2024; QPRC Operational Plan
Southern Harvest box scheme	13-week CSA, $23.76 to $118.80, 35 to 40 per cent on-cost; about 60 farmers; 120 households (2024)	2026; 2024	verified	Southern Harvest produce boxes 2026; HerCanberra 2026; About Regional 2024
Southern Harvest producer output	166,000 kg a year; 42 per cent sold locally; over 60 per cent with latent capacity	2025 survey	verified	ACT Food Hub Feasibility Study (SGS) 2026
ACT food hub NPV	minus $3.79 million (table) or minus $3.85 million (summary) over 15 years; 10 of 22 hubs closed	January 2026	verified, internal conflict	SGS 2026
Capital Region Farmers Market	about 100 stalls, roughly 7,000 customers a Saturday	2025	verified	Region Canberra 2025; CRJO
Coles Kemps Creek DC	229 NSW and ACT stores; opened 6 August 2024	2024	verified	Food and Drink Business 2024
Coles Goulburn DC closure	5 October 2021; 147 staff	2021	verified	Goulburn Post 2021
Woolworths Moorebank RDC	opened 13 November 2025; over 5 million cartons a week with the NDC	2025	verified	Woolworths Group 2025
Woolworths Wodonga DC	"services all of Canberra, regional Victoria and regional New South Wales"	2015 statement	verified, dated	Property Observer via apartments.com.au 2015
Household food stock	95 per cent hold 3 to 5 days against 14 recommended	2009	verified, dated	Australian Food News 2009
Supermarket and DC days of stock	none published	2026	gap	No published source found
Ulladulla Woolworths stock	"enough food for about one more day" on generator	1 January 2020	verified	ABC via inkl 2020

Figure	Value	Date	Label	Source
Narooma grocery outage	Woolworths closed from 31 December 2019; trucks from 6 January; Meals on Wheels from 9 January	January 2020	inferred from dated reports	ABC via inkl; The Beagle EOC updates; The Beagle May 2020
Kings Highway closure	reopened 14 January 2020 after "weeks"; closed by 10 December 2019	2019/20	verified; continuous five weeks inferred	Canberra Times January 2020; Region December 2019
Eurobodalla power outage	3,245 customers off on 9 January; over 1,000 for more than 12 days	January 2020	verified	The Beagle EOC 9 January 2020; The Beagle 13 January 2020
Eurobodalla fire cost	about $130 million in trade and 900 jobs; 501 homes	2020	verified	ESC Royal Commission submission May 2020; Canberra Times via inkl 2022
Council fuel secured	over 120,000 litres, tanker runs to Port Kembla	2020	verified	ESC Royal Commission submission June 2020
Araluen Road closure	23 October 2020 to May 2023 for trucks	2020 to 2023	verified	Region May 2021; ESC Araluen Road page 2024
Omicron absences	over 20 per cent of Woolworths DC staff; a third to half of truck drivers	January 2022	verified	The Conversation January 2022
National diesel cover	34 days (3,122 ML); petrol 41 days	27 October 2026	verified	fuelplan.gov.au
Fuel reserve policy	Australian Fuel Security Reserve about 1 billion litres ($3.2 billion); MSO to 50 days	May 2026	verified	Budget 2026-27; Rigzone 2026
Varroa in the ACT	first detection April 2025; over 1,000 hives destroyed by April 2026; about half of 6,000 hives by October 2026	2025 to 2026	verified	Region Canberra April 2025, April 2026, October 2026
Commercial hive shortfall	about 300,000 hives, eastern states	2026 season	verified	NRMA Open Road September 2026
Canberra water storage	278 GL capacity; 93.2 per cent	23 December 2025	verified	Icon Water; Braidwood Times December 2025
Cotter catchment share and burn	84 per cent of supply (2024/25); 99 per cent of Corin catchment burnt (2020)	2025; 2020	verified	Icon Water DWQR 2024-25; ACT SoE 2023
Bungendore bores	216 ML a year allocation (from about 630 estimated); $78 million pipeline refused funding May 2026	2021; 2026	verified	QPRC pipeline factsheet 2025; QPRC pipeline page 2026
Eurobodalla Southern Storage	3,000 ML; $150 million; dam wall complete 4 December 2025; 581 ML a year for irrigators and stock	2025	verified	ESC December 2025; National Water Grid Authority
Eurobodalla electricity	two 132 kV lines from the north	2020	verified	ESC Royal Commission submission June 2020
Eurobodalla land capability	Class 1 and 2 2,471 ha; Class 5 45,600 ha (68 per cent)	2015	verified, dated	Eurobodalla Discussion Paper 2, 2015
Palerang land cost per cow-calf unit	$11,000 to $13,000 against $4,000 to $6,000 North West Slopes	2015	verified, dated	Commercial Agriculture in Palerang 2015

Figure	Value	Date	Label	Source
DPIRD beef gross margins	$251.69 per ha inland weaners; $479.89 coastal weaners	June 2026	verified	DPIRD beef gross margins summary June 2026
Abattoir access	80 per cent of NSW smallholders have lost or risk losing access	May 2026	verified	AFSA submission 2026
Food insecurity, national	33.0 per cent of households (3.6 million); regional 36 per cent; 55-plus households 19 per cent	2026	verified	Foodbank Hunger Report 2026
Food insecurity, regional NSW	37 per cent; metropolitan NSW 31 per cent	2025	verified	Foodbank Hunger Report 2025
Food insecurity, ACT, QPRC, Eurobodalla	not measured (ACT sample 69)	2024 to 2026	gap	Foodbank 2024, 2025, 2026; ACT Food Relief Action Plan 2026
Last ACT measurement	3.6 per cent of residents (about 12,568) in a household that ran out of food	2011/12	verified, dated	ACTCOSS 2019
OzHarvest ACT	about 28,000 meals a week; 64 to 65 agencies; 22 waitlisted; 37 per cent first-time users	2025	verified	Region Canberra April and August 2025; OzHarvest 2025 impact report
ACT relief demand	two thirds of providers saw a 25 per cent rise in users; pantries spend $8,672 a month	December 2025 survey	verified	VolunteeringACT via CityNews 2026
ACT relief spending	about $22 million 2020/21 to 2024/25; over $1.6 million a year FAP and EMFA; $1.5 million Food Bank Fund	2026	verified	ACT Food Relief Action Plan 2026; ACT Treasury costing LAB035
Eurobodalla Meals on Wheels	180 clients, over 120 volunteers	August 2021	verified	The Beagle 2021
Monty's Place Narooma	over 60 free meals a week	March 2024	verified	NRMA Outback Links 2024
Meals on Wheels Queanbeyan	about 1,200 meals a month	2019	verified, dated	Region Canberra 2019
ACT Local Food Strategy funding	$455,000 in 2024-25 ($200,000 implementation); no further actions August 2025	2024; 2025	verified	ACT media release June 2024; ACT QTB 21; ACT QON 267
Natural Capital Economics study	$178,000; delivered; unreleased	2024 to 2026	verified	Region Canberra 2024; ACT QON 267 2025
Feeding Australia	$3.5 million over two years; release mid 2027	2025 to 2027	verified	DAFF timeline 2026
NARCliM2.0 South East and Tablelands	up 1.4 degrees (2050) and 2.5 (2090) medium; rainfall down 18.2 per cent by 2090; winter down 28.3 per cent	November 2025	verified	NSW DCCEEW NARCliM2.0 snapshot
Sea level at Eden	15 to 28 cm by 2050; 51 to 92 cm by 2100 (high)	AR6	verified	AdaptNSW South East and Tablelands
Rainfall contrast	Canberra Airport 637 mm; Braidwood 722 mm; Moruya Heads 955 mm; Narooma 923 mm	to 2026	verified	BoM climate averages
Sun Villages site distances	Young Street to Kianga about 124 km straight line, roughly 210 km by road	2026	inferred	Mapped distances

Figure	Value	Date	Label	Source
Support at Home and CHSP	Support at Home from 1 November 2025; CHSP transition no earlier than 1 July 2027	2025 to 2027	verified	Department of Health, Disability and Ageing 2026



PART B

The food security plan

Daily food, seasonal stores and a shock reserve on every site.

What the Sun Villages Institute does at its own sites: three layers of food, run on the village exchange, with costs, stages and risks.

B1 Plan summary · B2 The problem the plan solves · B3 Principles turned into food rules · B4 The architecture: three layers, four sites, one ledger · B5 Site plans · B6 The exchange: food rules for the LETS · B7 The Institute's role in the region: a node, not the convenor · B8 Measurement · B9 Programme, costs and funding · B10 Risks and controls

Plan summary

What the evidence says

- The region cannot feed itself and will not for the foreseeable future. The ACT Government's own 2024 study found the ability to raise food production inside the Territory is "thought to be limited", the three areas (ACT, Queanbeyan-Palerang, Eurobodalla) had only about 144 ha of vegetables, fruit and vines in 2020-21, and 98 per cent of farmed land is grazing. VERIFIED (ABS 2020-21 LGA data; ACT Government study, reported 2025)
- Every supermarket in Queanbeyan, Canberra and Narooma is stocked by truck from western Sydney (Woolworths Moorebank and Wetherill Park, Coles Kemps Creek, Metcash Huntingwood, Aldi Prestons) after Coles closed its Goulburn centre in October 2021 and Woolworths replaced Minchinbury with Moorebank in November 2025. Nobody publishes how many days of stock the stores or the centres hold. VERIFIED (company and industry sources, 2024 to 2026) GAP (days of stock)
- Narooma's food supply failed for roughly six to nine days in January 2020 when fire cut both highways and the power. The evacuation centre fed thousands on donated food and two-minute noodles after supplies ran out on day five. Council found in 2022 that only "a small proportion" of fuel stations, major food retailers and aged care facilities had taken "significant resilience action" since. VERIFIED (ABC 2020; Eurobodalla Shire Council 2022)
- Food insecurity is at a record. One in three Australian households (33 per cent) ran short of food in the year to August 2026; regional households were worse (36 per cent) than metropolitan (32 per cent); households headed by people aged 55 and over were at 19 per cent, 11 per cent severely. Queanbeyan is named by OzHarvest as "a major hot spot" where the Salvos and St Benedict's "are struggling to meet demand". VERIFIED (Foodbank Hunger Report 2026; OzHarvest August 2025)
- Older people carry the exposure. Eurobodalla is one of the oldest local government areas in NSW (33 per cent aged 65 and over; Narooma about 39 per cent, 40 per cent of households one person), about half of older Australians are at risk of malnutrition, Meals on Wheels Eurobodalla had 180 clients in 2021 against about 13,300 residents over 65 that year, and the Commonwealth Home Support Programme that funds most delivered meals moves into the Support at Home fee model no earlier than 1 July 2027. VERIFIED (ABS and council profiles; Dietitians Australia; The Beagle 2021; Department of Health 2026)
- No council in the region has a funded food security action. Queanbeyan-Palerang and Eurobodalla both revised their Community Strategic Plans in 2025 with no food action; the ACT Local Food Strategy stalled in August 2025 "due to competing priorities and resource constraints"; the national Feeding Australia strategy will not be released before mid 2027. VERIFIED (council plans 2025; ACT Government 2025; DAFF 2026)

What this plan does

- It treats food as the first use of the village exchange and gives that sentence a working design: who grows, who stores, who cooks, who trades, under what rules, measured how.
- It builds security in three layers on every site: daily freshness (gardens, racks, orchard, eggs, the cafe), seasonal stores (root cellar, cool room, preserving, bulk buying from regional growers) and a shock reserve (14 days now, 30 days when the Commons opens, 90 days as the living lab's research target).
- It builds the Food Resilience Living Lab in stages: stores, kitchen, mushrooms and seed bank first (low energy, high resilience), LED greens last and capped until the lab's own energy data proves the case. The verified record of indoor farming is failure on energy and unit cost (AeroFarms, AppHarvest, Bowery, Jones Food Company, 2023 to 2025).
- It makes Kianga the self-reliant node (orchard, animals, boats, water, stand-alone power, a motel kitchen that can feed a hundred) and Young Street the city node (stores, kitchen, exchange, data), with the Bungendore farm

as the tablelands larder. Kianga is about 210 km by road from Young Street over two roads that both closed in the last five years.

- It keeps the Sun Villages Institute a node in the regional system, not its convenor. Southern Harvest already runs the region's farmer co-operative and won the ACT's Dairy Road food hub site in July 2026; OzHarvest, St Benedict's, SAGE and SHASA already run relief and village resilience. The Institute aims to join, host, buy from and measure with them.
- It costs almost nothing to start and no debt at any stage. Stage 0 (six months) is a resident survey, a 14-day rolling reserve, a weekly meal, a growers' table and a 30-account exchange pilot, inside existing buildings, for under $15,000 ASSUMED. The capital items (kitchen, cool room, backup power, the basement lab) are staged to cash and grants.

What it costs and when

Stage	Months	What is built or started	Indicative cost	Funding route
0. Baseline and reserve	0 to 6	Resident survey, vulnerable resident register, 14-day rolling reserve at Young Street, weekly shared meal, Friday growers' table, LETS pilot (30 accounts), food continuity plan for each site, Kianga 14-day island reserve	$10,000 to $15,000 ASSUMED	Cash, resident hours in the ledger, FRRR Small and Vital
1. Commons kitchen and stores	6 to 18	Commons kitchen registered as a food business, cool room and dry store, 72-hour backup power, 30-day reserve, Southern Harvest pick-up hub at Young Street, market day, Kianga cool room backup and fire plan	$150,000 to $300,000 ASSUMED	NSW Community Building Partnership 2027, FRRR Rebuilding Futures (Black Summer areas), Snow Foundation Community theme
2. Living lab, first tranche	12 to 24	Root cellar, seed bank, mushroom room, preserving line, sensors and open data, university partnership, 90-day reserve trial	$400,000 to $700,000 ASSUMED	Ian Potter Community Wellbeing (round opens 2 February 2027), philanthropy, research partners
3. Living lab, growing tranche	24 to 36	LED greens racks capped at 25 m^2 canopy until measured, then scaled or stopped on the data; replication pack for other villages	Within the published $1.29m to $2.53m envelope, net of stages 1 and 2 (SVI estimate)	Decided on the stage 2 data

The problem the plan solves

Three exposures, measured

Everyday affordability

- One in three households food insecure nationally; 61 per cent of those severely. Food prices in Canberra rose 20.6 per cent in the five years to December 2024. VERIFIED (Foodbank 2026; ABS CPI via ACT sources)
- Households headed by people aged 55 and over: 19 per cent food insecure, 11 per cent severely. Renters: 48 per cent (2025). VERIFIED (Foodbank 2026 and 2025)
- Relief in Queanbeyan is overwhelmed: 37 per cent of users at local agencies were first-timers in 2025; providers are St Benedict's (Karabar), Anglicare Food Fair, the Salvation Army Thursday cafe with OzHarvest hampers, Vinnies, High Street Care, Meals on Wheels Queanbeyan (also Bungendore and Braidwood) and the Bungendore Food Hub (8 to 12 users a week). Nothing is listed for Captains Flat, Nerriga, Araluen or Majors Creek. VERIFIED (OzHarvest 2025; QPRC food relief flyer February 2026 and directory April 2026)
- Relief in Narooma is thin: Monty's Place (over 60 free meals a week, little or no funding), OzHarvest hampers from a motel kitchen (about 100 a week in the 2021 lockdown), and the shire's main pantry and Anglicare hub 50 km away in Moruya. VERIFIED (NRMA 2024; The Beagle 2021 and 2022)

Shock isolation

- Narooma: both highways cut in January 2020; power lost 31 December and again 4 January; Woolworths shut from New Year's Eve; first escorted food and fuel trucks 6 January; Meals on Wheels resumed 9 January "after supplies arrived" after losing three freezers and $20,000 of food. VERIFIED (ABC 2020; The Beagle 2020)
- Kings Highway over Clyde Mountain: closed about five weeks in 2019-20 (1,200 trees removed), again for tree removal in 2021 and 2023, and under $4 million landslip repair from February to August 2026. Braidwood business revenue fell about 75 per cent in 2021. Araluen Road was closed to through traffic from October 2020 to May 2023 with orchard fruit rotting. VERIFIED (Transport for NSW; Braidwood Times; QPRC sources)
- Fuel: trucked from Port Kembla and Sydney; national diesel cover 34 days at 27 October 2026, with Australia at Level 2 of the National Fuel Security Plan after the February 2026 Middle East conflict. VERIFIED (fuelplan.gov.au; Australian Government March 2026)
- Power: Eurobodalla hangs on two 132 kV lines from the north; 85 per cent of Black Summer telecommunications loss was power-related; 3,245 customers still off on 9 January 2020 and over 1,000 off for more than 12 days. VERIFIED (Royal Commission 2020; council sources)
- Days of stock: no published figure for any Australian supermarket or distribution centre. The nearest documented south coast benchmark is Ulladulla Woolworths with "enough food for about one more day" on 1 January 2020 under generator power. Households: about 3 to 5 days typical (AFGC 2009), two weeks reported in March 2020. VERIFIED (ABC 2020; AFGC 2009) GAP (store and centre stock)
- Demand shocks clear in under three weeks nationally (COVID 2020 and 2021) but labour shocks bite: over 20 per cent of Woolworths distribution staff absent in January 2022. Avian influenza brought egg limits from June 2024; Varroa mite is established in NSW and detected in the ACT, with about 300,000 commercial hives expected short for the 2026 eastern pollination season. VERIFIED (industry and government sources 2022 to 2026)

Ageing in place

- About 50 per cent of older Australians are at risk of or have malnutrition; risk rises with living alone, difficulty shopping or cooking, dental problems and medication. VERIFIED (Dietitians Australia)
- Eurobodalla: median age 54; 33 per cent aged 65 and over (13,900 people in 2024); 33 in 100 live alone; Narooma 7.9 per cent of households have no car and the hospital is 51 km away. Power or road failure removes food access for the old and the carless at the same time. VERIFIED INFERRED (ABS; council profiles)
- Support at Home replaced Home Care Packages on 1 November 2025; the Commonwealth Home Support Programme (most delivered meals) transitions no earlier than 1 July 2027; Meals on Wheels Australia asked the Commonwealth for urgent fuel-cost funding in April 2026; the Ombudsman found "serious problems" with assessment reliability in October 2026. Eligibility delays for funded meals are a live risk. VERIFIED (Department of Health; MoWA; COTA)

The Sun Villages exposures, site by site

Site	What exists	Food exposure	Source
Young Street, Queanbeyan (city village)	Stage 3: 50 homes in Building S and the Commons, developed under the Sun Villages model; a Food Resilience Living Lab concept for a 300 m^2 basement under Building S serving about 85 to 90 residents	Residents buy from Queanbeyan supermarkets fed from Sydney (250 to 300 km). The village store, kitchen and reserve are built in stages 0 and 1. Town water from Icon Water (secure).	sunvillages.institute (Young Street, Food Lab pages)
Kianga, Narooma (ocean village)	6.5 acres; 1901 homestead; 18-room motel with income; 32 kinds of food plants producing; sheep, ducks, chickens; two boats; wastewater recycling since 2017; 30 kW solar plus solar hot water; capacity assessed at about 25 small homes with the motel or 40 dwellings; four 120,000 L tanks and a stand-alone power system planned	One road town, B-double limited highway, two power lines, summer population surge to 130,000 shire-wide, fire exposure (Badja Forest Road fire 2020), estuary closures after rain. The food reserve, cold chain backup and food fire plan are stage 0 work.	sunvillages.institute (Narooma page); Eurobodalla Shire Council VERIFIED
Farm near Bungendore (tablelands larder)	The network's tablelands growers' node	Rain-fed only (no regulated water in the LGA); Bungendore's bore allocation cut from an expected 630 ML a year to 216 ML a year in 2021 and the $78 million pipeline refused federal funding in May 2026; Varroa makes apple pollination a paid input; no abattoir in the LGA (the Bungendore butcher uses Moruya). Farm size, soils and water are confirmed in the first season (section C8).	sunvillages.institute; QPRC VERIFIED
The Institute's bush block	Held for the network	Seed security and native plant propagation only	sunvillages.institute

Principles turned into food rules

The six Sun Villages principles and the Food Lab's own rules already decide most of the design. This table makes the consequences explicit so nobody has to reinvent them later.

Sun Villages principle	Food rule	What it forbids
Held, not sold	Food infrastructure (stores, kitchen, cool room, gardens, orchard, animals, boats, seed bank) sits on the one title and is owned by the company. The reserve belongs to the village, not to individuals.	Selling or leasing the stores or gardens to an outside operator; a reserve that walks out the door in a crisis because it was somebody's private stock.
No debt	Every food asset is built from cash, grants and recorded hours. Stage to what is funded.	Borrowing for the lab; leasing equipment on finance; a hub that needs grant income to pay its own overheads (the Bristol Pound died this way in 2021 to 2023).
A lease, not a tenancy	Garden plots, store entitlements and exchange membership attach to the lease and pass with it.	Food rights that depend on who runs the committee this year.
Wages, not markets	Food is priced to residents at cost in dollars, or in hours on the exchange. The cafe and markets charge outsiders a margin that lowers residents' cost.	Supermarket margins inside the village; dynamic pricing of the reserve in a shock.
The village pays its way	The cafe, the preserving line, the market day and the motel kitchen earn. Every surplus goes to the stores or lowers the lease fee.	A food program that is a permanent cost line; volunteer burnout as the hidden subsidy.
People don't thrive alone	One shared meal a week, cooked from the store, is non-negotiable. Growing, cooking and store rotation are rostered social work, mixed ages, hours in the ledger.	Delivered meals as the only food contact for an older resident; a store nobody visits.
Store calories, grow freshness, cook from the store every week (Food Lab rule)	The dry store holds calories (grains, legumes, oils), the gardens and racks grow what does not keep (greens, herbs), and the weekly meal turns the store over so nothing expires (the Tokyo rolling-stock method).	A static 90-day bunker that expires; a basement that grows lettuce while the cupboard is empty.
Measure before claiming	Baseline survey first; every claim (days of supply, local share, energy per kilogram) comes from a counted number.	Published numbers that were never measured.
Partners named in writing before money moves	Southern Harvest, SAGE, SHASA, Meals on Wheels, OzHarvest, the councils, the universities: a one-page letter each before any joint spend.	Verbal partnerships; "in discussion" on a grant form.

The architecture: three layers, four sites, one ledger

Layer 1. Daily food (grow freshness)

- Purpose: every resident has fresh greens, herbs, eggs and fruit within a hundred metres, and a reason to be out among neighbours every day.
- Young Street: plots in the Commons gardens and the forecourt; a herb and salad wall at the hub; eggs from a small resident-managed flock if council rules allow ASSUMED (subject to QPRC rules on keeping poultry); the Food Lab racks later, capped (section B5.1).
- Kianga: the existing orchard (apples, avocados, macadamias, mangoes, lychees, figs, olives, coffee, citrus, berries), the sheep, ducks and chickens, the lake and ocean boats. This is already the strongest daily layer in the network. The task is a harvest calendar and a surplus list on the ledger, not new planting.
- Bungendore farm: root crops, pumpkins, onions, brassicas, garlic, apples (with paid pollination), eggs for the stores; a trial 1,000 m^2 market garden once an operator and water are in place (section B5.3).
- Rule: nothing in Layer 1 is sold outside the village until residents' own demand is met (about 3.1 t of greens a year for 85 to 90 people at 100 g a day, per the Food Lab estimate).

Layer 2. Seasonal stores (store calories)

- Purpose: a village larder that buys regional food in season at farm price, stores it well, and turns it over.
- Root cellar for potatoes, pumpkins, onions and apples (the four crops the tablelands grow well and that keep three to six months without power).
- Cool room at 2 to 4 degrees and a freezer room at minus 18 for dairy, meat, oysters and prepared meals, with backup power sized to the longest regional outage the site has seen (12 days plus in Eurobodalla in 2020) rather than to a comfortable four hours.
- Dry store: grains, legumes, oils, salt, sugar, tinned fish and tomatoes, on rolling stock. This is also the shock reserve (Layer 3); the two are one shelf.
- Preserving line: a licensed communal kitchen for bottling, drying, fermenting and freezing the seasonal glut (Araluen stone fruit, Kianga figs and citrus, tablelands apples).
- Buying: Southern Harvest produce boxes and a pick-up hub at Young Street (the co-operative already runs a Queanbeyan East mini hub on Tuesday evenings and 11 hubs across the region; its published cost stack is 100 per cent of produce cost to farmers plus about 35 to 40 per cent for administration, packing and distribution); SAGE Farmers Market Moruya and Wagonga oyster growers for Kianga; bulk staples from a wholesaler on a quarterly cycle; Braidwood Farmers Market for the tablelands.
- Bulk buying group: residents pre-order staples quarterly at wholesale plus a small store margin; this is the simplest proven form of co-operative buying in Australia and needs no software beyond a spreadsheet.

Layer 3. Shock reserve (hold a reserve, keep the cold chain, know who is vulnerable)

- Target by stage: 14 days of staples for every resident now (inside existing storage), 30 days when the Commons opens, 90 days as the living lab's research question ("how large a reserve keeps a building fed for 30 and 90 days" is one of its five questions).
- Sizing, shown so it can be checked: the Food Lab's own ratio is 1.5 t of staples for 30 days for 85 to 90 people, which is about 0.57 kg of dry staples per person per day, consistent with roughly 2,000 kcal a day from grains, legumes and oil. For Young Street, assuming 90 residents in the 50 homes of stage 3 ASSUMED, a 14-day reserve is about 90 x 0.57 x 14 = 718 kg, roughly 0.7 tonnes, costing about $2,500 at $3.50 a kilogram ASSUMED. A 30-day reserve is about 1.5 t and $5,400. For Kianga, 100 people (residents plus motel guests in a shock) for 14 days is about 800 kg.
- Water: 3 L a person a day for drinking and cooking is the planning figure used by emergency agencies (Queensland Get Ready: 10 L per person minimum for three days; Ready.gov: one gallon a day). Young Street needs about 4 kL for 14 days; Kianga's planned 480 kL of tanks cover this many times over. VERIFIED guidance, ASSUMED application
- Cold chain: a cool room loses safety after about four hours unopened without power (Ready.gov). Backup options: a diesel generator with 72 hours of fuel (cheap, needs fuel that is itself the scarce input), or battery storage of roughly 100 kWh for a 10 m3 cool room over 72 hours ASSUMED (to be engineered), or Kianga's planned stand-alone system (solar, wind, micro hydro, high tank, batteries, generator last).
- Vulnerable resident register: who needs medication cold, who cannot cook, who cannot carry, who is alone, who has no car, with a named buddy each. Reviewed quarterly. Privacy consented.
- Continuity plan per site, one page, tested annually with a drill: triggers (highway closed, power off more than four hours, fire danger catastrophic), who opens the store, meal rota, generator start, who checks the register, who talks to the Local Emergency Management Committee and SHASA havens (Kianga) or QPRC and St Benedict's (Young Street).
- Mutual aid between sites: the tablelands and the coast grow different things in different seasons (potatoes, apples, lamb and grain versus citrus, avocado, dairy, oysters and fish). This is a real asset, but only when the roads are open. Each site must stand alone for 14 days first; exchange is the second line, not the first.

The ledger: food on the village exchange

- The first use of the village exchange is food. Section B6 sets the rules. The short version: members list surplus and hours; residents and local growers trade member to member; the Commons kitchen and any commercial farm stay on the dollar side of the ledger; nobody is charged interest; a minus is a promise; 20 to 200 active accounts; one market day a week.

The site matrix

Function	Young Street	Kianga	Bungendore farm	Bush block
Daily growing	Plots, herb wall, later capped racks	Orchard, animals, boats (strong now)	Field crops, lamb, eggs	Seed duplicate site only ASSUMED
Stores	Root cellar, cool and freezer rooms, dry store, seed bank (the lab)	Motel cool room plus a new dry store; tanks	Farm shed cold store for roots ASSUMED	None

Function	Young Street	Kianga	Bungendore farm	Bush block
Kitchen	The Commons kitchen (registered food business)	Motel kitchen (already commercial)	None	None
Reserve	14, then 30, then 90 days	14 days island reserve	Fuel and feed, not food	None
Exchange	Ledger host; market day on the car park hard stand	Summer and weekly garden table	Grower account	Grower account
Potential partners	Southern Harvest hub, St Benedict's, Meals on Wheels Queanbeyan, QPRC LEMC, Living Places Institute, ANU, UC	SAGE, SHASA havens, Narooma CWA, Monty's Place, Wagonga growers, Eurobodalla LEMC, UOW Bega	Southern Harvest co-op member, Mulloon Institute, Local Land Services	Living Places Institute (research)

Site plans

5.1 Young Street, Queanbeyan: the city village

Stage 0 (months 0 to 6): inside existing buildings, before any build

- Count and survey the residents. Household food security with the USDA six-item short form plus the FAO eight-question Food Insecurity Experience Scale, and a Mini Nutritional Assessment short form offered to residents over 75 ASSUMED (instruments to be confirmed with a university partner). Benchmark against Foodbank's 55-plus figure (19 per cent) and regional figure (36 per cent). This is the baseline the Food Lab's "measure before claiming" rule requires and the number every grant application will ask for.
- Build the vulnerable resident register and buddy list.
- Start the 14-day rolling reserve in an existing storeroom: about 0.7 tonnes of staples, rotated through the weekly meal and sold to residents at cost. Rule: the store is drawn down for cooking every week and topped up monthly, so nothing passes its date.
- Cook one shared meal a week from the store at the Young Street hub. Free or by donation keeps it inside the NSW Food Safety Supervisor exemption for "food provided free to the community"; confirm in writing with QPRC's environmental health officer.
- Open a Friday growers' table: residents and nearby growers list surplus on the ledger and swap it. Member-to-member swapping of home-grown produce is outside assessable income (ATO ruling IT 2668, paragraph 11) and, on this scale, domestic for food law; still notify council of the market day.
- Ask Southern Harvest to add Young Street as a pick-up hub for its 13-week produce boxes and to let the village join as a co-operative member. Their Queanbeyan East hub already runs on Tuesday evenings.
- Run the exchange pilot with 30 accounts (section B6).
- Write the one-page continuity plan and run the first drill in the next fire season.
- Cost: $10,000 to $15,000 ASSUMED: reserve stock $2,500, shelving and bins $2,000, survey and ethics through the Living Places Institute $3,000, food safety training for four residents (NSW Food Safety Supervisor certificates) $1,500, drill and printing $500, contingency. Hours in the ledger for everything else.

Stage 1 (months 6 to 18): the Commons

- The Commons (cafe, workshop barn, library, gardens, storage) is already in the stage 3 design. Add: a registered food business notification under the NSW Food Act (section B6) for the kitchen; one Food Safety Supervisor per premises with a five-year certificate kept on site; a cool room and freezer room with 72-hour backup; a dry store sized for 30 days; a preserving bench; and the pick-up hub shelving.
- The cafe sells to outsiders at a margin and feeds residents at cost; it is the first "village pays its way" line and the social front door for older residents who will not come to a "food relief" program.
- Market day moves to the car park hard stand (already designed for markets and film nights).
- Partner: Meals on Wheels Queanbeyan. Offer the Commons kitchen as a co-located production or distribution point and a volunteer pool; MoWA's own statements show thin margins under fuel and volunteer pressure. Any funded meal contract makes the kitchen a food business under both grant rules (CHSP to at least 1 July 2027, Support at Home after).
- Cost: $150,000 to $300,000 for the kitchen fit-out, cool and freezer rooms, backup power, shelving and compliance, over and above the Commons build cost already in the stage 3 budget ASSUMED (to be priced by a quantity surveyor).

Stage 2 (months 12 to 24): the living lab, first tranche

- Build the low-energy, high-resilience rooms first: root cellar, dry store with the 90-day trial stock, seed bank at minus 20, mushroom room (oyster and shiitake on kitchen scraps and spent coffee grounds; low light, cool and humid, a natural basement fit), preserving and packing line, sensors in every room feeding the open data platform.
- Hold the LED greens racks at a pilot: no more than 25 m^2 of canopy against the 60 to 75 m^2 in the concept, until twelve months of metered data give kilowatt hours per kilogram, labour hours per kilogram and cost per kilogram against the Southern Harvest box price and the supermarket shelf. Published commercial failures were about energy and price; the village test is different (retail price displaced, resident labour, rooftop solar) but it must be proved, not assumed. The 31 to 56 MWh a year the concept allows for growing is the single biggest running cost in the plan.
- Research partners and the five questions as published: energy, yield and cost of basement growing on solar; whether on-site food changes residents' food security, diet and social connection; reserve size for 30 and 90 days; closed loops for kitchen waste and water; native plant propagation.
- Biosecurity: Bowery lost a whole crop to a plant pathogen. One basement needs hygiene zoning between the mushroom room, the racks and the stores.
- Cost: $400,000 to $700,000 ASSUMED for the stores, mushroom room, preserving line, sensors and the pilot racks; the full concept is $1.29m to $2.53m before quantity surveyor pricing (SVI estimate).

Stage 3 (months 24 to 36): grow or stop, on the data

- If the metered racks beat the box price on a full-cost basis, scale the canopy; if not, keep the basement as stores, mushrooms, kitchen and lab and say so publicly. Either result is a research output worth having.
- Package the replication kit (plans, rules, data, costs) for other villages and partner buildings.

5.2 Kianga, Narooma: the ocean village

What is already right

- Thirty-two kinds of food plants, sheep, ducks and chickens, boats for the lake and the ocean, a wastewater system that returns nutrients to the land, 30 kW of solar, a motel with a commercial kitchen and 18 rooms, and a plan for 480 kL of tanks and stand-alone power. In food terms this is the most resilient site in the network and the only one with real daily production today. (sunvillages.institute)

Stage 0 (months 0 to 6)

- A 14-day island reserve: about 800 kg of staples for 100 people (residents, motel guests and the two or three neighbours who will come when the highway shuts) ASSUMED, in a dry store at the motel, rotated through the motel kitchen and the summer gathering (11 to 14 December 2026).
- Cold chain backup for the motel cool room: test the existing system and add capacity where needed.
- A food continuity plan written with the Eurobodalla Local Emergency Management Committee in view: Narooma's evacuation centre held about 4,000 registered and 1,000 unregistered people in January 2020 with one pay phone and no power, and council's Royal Commission submission put the Narooma Leisure Centre's capacity at 300. A homestead and motel with its own water, power, kitchen and orchard is a haven in the SHASA sense; talk to SHASA, which fitted solar and batteries to the Narooma CWA, Tilba Halls and Moruya CWA havens with $1 million of grants, and to Monty's Place.
- Harvest calendar for the orchard and animals; surplus listed on the ledger; a weekly garden table in summer.
- Fire plan for food: store placement, livestock refuge, fuel for the generator, who stays. The Badja Forest Road fire threatened Narooma, Tilba and Bodalla in January 2020.

Stage 1 (months 6 to 18)

- Water and power as already planned (the tanks, first flush, stand-alone system with solar, wind, micro hydro, the high tank and batteries, generator last). Size the battery for the cool room and the kitchen, not just the lights.
- Oysters and fish on the ledger, lawfully: oysters must come from licensed harvest areas under the NSW shellfish program, which closes estuaries after rain and blooms (Wagonga closed after a sewage overflow in 2014, rain in December 2014 and a Pseudo-nitzschia bloom in April 2017). Buy from licensed Wagonga growers at farm price in dollars; recreational catch is for the household table, not for sale or barter. VERIFIED rules, ASSUMED application
- SAGE Moruya as the fresh produce partner for what the orchard does not grow (brassicas, roots, greens in winter).
- The motel as Ecotel: guests, trial-stay residents and small businesses on the commercial land, with the kitchen earning and feeding. The three-month trial stay and skills-count rule for Narooma is the village's own labour market for the food work.

What Kianga should not do

- Rely on a weekly truck from the tablelands. The two roads (Kings Highway over the Clyde, Araluen Road) closed for five weeks and two and a half years respectively in the last six years, and a 420 km round trip burns the one input the whole corridor runs short of in a shock, diesel.

5.3 The farm near Bungendore: the tablelands larder

- First step: confirm the farm's size, soils, water (bore, dam, creek; the harvestable right; Bungendore town water is already rationed), fencing, sheds and cold store, and who farms it and under what agreement (lease at a wages-linked fee, share farming, or hours in the ledger).
- Role: the root cellar crops (potatoes, pumpkins, onions, apples), garlic, brassicas, lamb and eggs for the Young Street stores; surplus through the Southern Harvest co-operative (the Bungendore store, kitchen and Saturday market are 15 minutes away) and the Braidwood Farmers Market.
- Constraints to design around: rain-fed only, 600 to 720 mm a year and falling under every NARCliM2.0 scenario; frost (88.9 cold nights a year in the baseline); Varroa means apples need paid managed hives from the 2026-27 season; no abattoir in the LGA (the Bungendore butcher service-kills at Moruya; NSW allows mobile abattoirs, Provenir was licensed in 2019 at 10 cattle a day; the ACT assessed a multi-species micro-abattoir as feasible with farmer-led governance such as a co-operative). Join any micro-abattoir co-operative that forms.
- Neighbours worth learning from: the Mulloon Institute (23,000 ha rehydration initiative, 20 km of creek rehabilitated, results paper due 2026; measured gains so far are modest and the institute's benefit figures are its own) and Mulloon Creek Natural Farms (28,700 hens, about 300 cattle, sold through Harris Farm, not locally). VERIFIED
- Economics: NSW gross margins for grazing are $252 to $614 per ha for beef and about $500 to $600 per ha for sheep (June 2026), a 2 to 13 per cent gross yield on tablelands land prices before overheads. A village farm is viable as a larder and a classroom, not as a business that pays for its land. VERIFIED margins, INFERRED verdict

5.4 The Institute's bush block

- Role: a duplicate seed store (the seed bank's off-site copy), firewood for the preserving kitchen where lawful, and a native plant propagation block.

The exchange: food rules for the LETS

These are the rules for food on the village exchange, written so each one can be adopted on its own.

Accounts and unit

- One ledger across the four sites (food makes the case for one ledger, because the coast and the tablelands trade seasonally opposite things).
- Unit: one credit equals one hour of ordinary work. Sydney LETS uses 35 "operas" an hour; a single hour-unit is simpler to explain to an 80-year-old. Name to be chosen by members. ASSUMED
- Every account starts at zero; no interest; a minus is a promise, not a debt; balances visible to members; accounts that drift beyond plus or minus 50 hours get a conversation, not a penalty. Healthy accounts stay near zero.
- Target 30 accounts in the pilot, 20 to 200 active in steady state (the page's own figure, consistent with the literature).

What food is worth

- Produce: priced by the grower in credits or part credits and part dollars; a reference list for common items (a dozen eggs, a kilogram of potatoes, a bag of greens) published monthly by the store so prices stay sane.
- Hours: garden shifts, store rotation, cooking, delivery to a housebound neighbour, preserving: one credit an hour, logged in the console.
- The weekly meal: free to cook, free to eat, hours credited to the cooks. Meals cooked for sale (the cafe, a funded contract) are on the dollar side.

Keeping it lawful (verified rules, inferred application)

- Tax: ATO ruling IT 2668 (1992, still in effect) puts "hobby, pastime, domestic or social exchanges, such as swapping home-grown vegetables" outside assessable income and says a large proportion of community countertrade is not assessable. A registered business that accepts credits for what it normally sells is assessable at fair market value, and in business exchanges a credit is deemed worth one dollar. GST treatment of barter by GST-registered members is confirmed before any business joins. Design rule: the Commons kitchen, the cafe, the motel and any commercial farm trade in dollars with members; the exchange is member to member.
- Food law: the NSW Food Act defines "sell" to include barter, and a food business includes community activities. Member-to-member swaps of home-grown produce at a weekly table are domestic in scale; the kitchen, the cafe and anything sold to the public are food businesses with council notification, safe handling and a Food Safety Supervisor where unpackaged potentially hazardous ready-to-eat food is served. Get the position in writing from QPRC and Eurobodalla Shire Council environmental health.
- Shellfish and meat: oysters only from licensed harvest areas in open status; meat only from a licensed abattoir or a licensed mobile abattoir; no home-kill meat on the ledger.
- Leafy greens from the racks: once greens are supplied beyond residents' own households they fall under Standard 4.2.8 (approved food safety management statement, notification), in force since 12 February 2025. Growing only for residents is likely outside it; confirm with the NSW Food Authority.

Running it

- Market day weekly, not monthly. Stina Kerans' book records that closing the earlier Friday market "unravelled the social fabric"; the village exchange treats weekly markets as essential.
- Zero operating budget. The console ledger exists; a free platform such as the Community Exchange System (249 exchanges, 49 countries) is the fallback. The currency must never carry overheads; the ones that did (Bristol Pound 2012 to 2021, Bristol Pay 2023) closed when grants stopped.
- One steward, rostered, with hours credited; a monthly balance report to members.

The Institute's role in the region: a node, not the convenor

What already exists, and the Institute's relation to it

Function	Who does it now	What the Institute plans to do
Regional farmer co-operative, produce boxes, markets, food hub	Southern NSW Harvest Co-operative Limited (Bungendore store, kitchen and Saturday market since September 2023; 11 pick-up hubs; won the ACT's Dairy Road, Fyshwick site in July 2026 for a hub with storage, packing and distribution)	Join as a member; host a pick-up hub at Young Street; buy for the stores; supply tablelands surplus
Coastal local food	SAGE Project and Farmers Market, Moruya; Wagonga oyster growers; Tilba and Bodalla dairies	Buy; list on the ledger at farm price; Kianga stall in summer
Village resilience on the coast	SHASA (havens at Narooma CWA, Tilba Halls, Moruya CWA; microgrid studies with ANU; food packs), Monty's Place	Add Kianga to the haven map; share generator and battery design; feed Monty's from the orchard glut
Food relief	St Benedict's, Anglicare, Salvation Army, Vinnies, OzHarvest, Foodbank NSW and ACT; Moruya Pantry Club	Do not compete; send surplus; offer kitchen time; refer residents
Delivered meals for older people	Meals on Wheels Queanbeyan (also Bungendore and Braidwood) and Eurobodalla (180 clients, 120 volunteers in 2021)	Co-locate, share volunteers and the cool chain; become a funded sub-contractor only with the compliance in place
Emergency management	QPRC and Eurobodalla Local Emergency Management Committees; NSW SES and RFS	Register both sites' continuity plans; ask to be listed as community havens
Territory food policy	ACT Government Local Food Strategy 2024-2029 (stalled August 2025; next steps are urban agriculture on unused government land and a public food-growing education platform)	Offer the Young Street data and kitchen to the education platform; not an ACT grant recipient (Young Street is in NSW)
Research	ANU Fenner School (food, soil, water and agriculture; urban systems), University of Canberra Health Research Institute (lifespan health), UOW Bega Valley	Through the Living Places Institute: the living lab's five questions, the resident baseline, the open data platform
Regional strategy	Nobody. QPRC, Eurobodalla and CRJO have no food system strategy; Feeding Australia is due mid 2027	Publish the measured results and let them be used; do not take on the convening role until the villages run

What the Institute offers the region that nobody else has

- A measured 30 and 90-day building reserve, run on rolling stock, with the data public. No Australian official guidance goes past about a week; no regional body holds a stock figure for anything.
- A village kitchen and store that keeps older residents fed and in company through a highway or power cut, in two of the region's oldest communities.
- A working food exchange with published rules and tax and food-law positions, which other villages and cohousing groups in the region can copy.
- A replication kit at year three.

What the Institute should not do

- Run a regional food hub. The ACT's own study (SGS, January 2026) put a two-phase hub at a net present value of about minus $3.8 million over 15 years, and Southern Harvest already holds the Dairy Road site.
- Run food relief. OzHarvest delivers about 28,000 meals a week to 64 to 65 agencies in the ACT and region with 22 on a waitlist; the gap is money and freight, not another agency.
- Farm commercially. The margins say no (section B5.3).

Measurement

Baseline (month 0 to 3) and annual

Indicator	Instrument	Benchmark	Target year 1	Target year 3
Household food security	USDA six-item short form (comparable with Foodbank's 18-item results at the low and very low levels)	Foodbank 2026: 55 plus households 19 per cent; regional 36 per cent	Measured, published	Below the 55 plus benchmark on both sites
Food insecurity experience	FAO FIES, eight questions, 12-month reference ASSUMED	SDG indicator 2.1.2	Measured	Falling
Malnutrition risk, residents over 75	Mini Nutritional Assessment short form, with consent ASSUMED	Dietitians Australia: about 50 per cent at risk nationally	Measured	Falling
Days of staples on hand	Monthly count of the dry store against the resident count at 0.57 kg a person a day	Household typical 3 to 5 days (AFGC 2009)	14 days at both sites	30 days Young Street, 14 days Kianga, 90-day trial reported
Cold chain backup	Tested run time of the cool room on backup, quarterly	Ready.gov four-hour threshold	72 hours	Longest regional outage on record (12 days, Eurobodalla 2020) or a documented decision not to
Local share of kitchen spend	Share of the store's purchases from within 200 km by dollar, quarterly	No regional figure exists GAP	Measured	Rising; published
Exchange activity	Active accounts, food trades a month, hours logged	20 to 200 active accounts	30 active	100 active across sites
Shared meals	Meals served a week; share of residents over 75 attending	None	One meal a week, both sites	Daily cafe meal at Young Street
Reserve losses	Stock written off past date, as a share of stock	None	Under 5 per cent	Under 2 per cent
Growing energy (lab)	Metered kWh and labour hours per kilogram of greens and mushrooms	No reliable published figure GAP	Metered from day one of the racks	Scale or stop decision made on the data
Drill	Annual continuity drill at each site, with the register	None	Done before the 2026-27 fire season at Kianga, 2027 at Young Street	Annual, with LEMC observers

- All indicators are defined once, in writing, and never changed without a note in the open data platform. No Australian standard for food system resilience indicators exists; the Institute's definitions will be the regional reference by default, which is a responsibility.

Programme, costs and funding

Programme

Months	Young Street	Kianga	Farm and bush block	Exchange and partners
0 to 3	Resident count and survey; register; continuity plan; reserve ordered	Reserve ordered; cold chain checked; continuity plan; summer gathering as the first garden table	Farm fact sheet (size, water, tenure, operator)	Pilot rules adopted; 30 accounts; partner letters to Southern Harvest, SAGE, SHASA, Meals on Wheels, both councils
3 to 6	Weekly meal from the store; growers' table; Southern Harvest hub; food safety certificates	Harvest calendar; surplus on the ledger; fire plan; SHASA haven conversation	Farm role set	First market day; monthly balance report
6 to 12	Commons kitchen design signed off with the food business requirements; quantity surveyor prices stage 1	Tank and power procurement as planned; battery sized for the cool room	Root cellar crops planted	Grant applications (section below)
12 to 18	Commons kitchen, cool and freezer rooms, backup power, 30-day reserve, market day on the hard stand	Dry store and cool chain backup commissioned; drill	First harvest to the stores	60 accounts; tax and food-law positions in writing
18 to 24	Lab first tranche: root cellar, dry store, seed bank, mushroom room, preserving line, sensors; pilot racks	Ecotel kitchen earning; SAGE and oyster supply running	Surplus through Southern Harvest	University agreements signed; data platform live
24 to 36	90-day trial; scale or stop decision on the racks; replication kit	Replication of the island model for the next coastal village	Micro-abattoir co-operative if formed	100 accounts; annual report

Cost summary (all estimates until priced)

- Stage 0: $10,000 to $15,000 ASSUMED.
- Stage 1: $150,000 to $300,000 at Young Street; $30,000 to $60,000 at Kianga for the dry store and cold chain backup over and above the planned tanks and power ASSUMED.
- Stage 2: $400,000 to $700,000 ASSUMED.
- Stage 3: within the published $1.29m to $2.53m Food Lab envelope, net of earlier stages, only if the data say so (SVI estimate).
- Running costs: one to two full-time equivalents plus the resident roster for the full lab (SVI estimate); stage 0 and 1 run on hours in the ledger and the cafe's margin ASSUMED.

Funding, with the no-debt rule

- FRRR Small and Vital: small grants with no DGR needed, for the stage 0 reserve, shelving, survey and drill, through the Living Places Institute or the Commons not-for-profit.
- FRRR Rebuilding Futures: open for communities hit by disasters between January 2019 and December 2025; both Queanbeyan-Palerang and Eurobodalla qualify on the dates. Fit: Kianga cold chain backup and the Young Street reserve. VERIFIED
- NSW Community Building Partnership 2027 round: kitchen and cool room fit-out as small local community infrastructure. VERIFIED (program)
- Snow Foundation: funds organisations in Canberra and the NSW South Coast under a Community theme; by relationship, no open round visible. VERIFIED
- Ian Potter Foundation, Community Wellbeing: round 1 2027 opens 2 February 2027, closes 18 March 2027, decisions early July 2027. VERIFIED
- Philanthropy generally needs DGR item 1, so council and FRRR money comes first and foundation money follows. INFERRED
- ACT Government grants do not apply to Young Street (NSW); the ACT relevance is the education platform and the research partners. INFERRED
- Not a funding route: debt of any kind, equipment finance, or a hub whose operating costs depend on grants.

Risks and controls

Risk	What it looks like	Control	Pause trigger
Volunteer burnout	The same six residents do everything; the roster thins by month nine	Hours in the ledger; cafe margin funds one paid steward from stage 1; mixed-age rosters; nothing weekly that fewer than three people own	Fewer than ten active contributors for two consecutive months: pause expansion, fix the roster
Food safety incident	A shared meal or preserved batch makes a frail resident ill	Registered food business, Food Safety Supervisor, temperature logs, no home-kill meat or unlicensed oysters, high-risk preserves (low-acid canning) excluded until a trained person runs the line	Any confirmed foodborne illness: stop the kitchen, investigate, report
Basement energy cost	Racks consume 31 to 56 MWh a year and the greens cost more than the box price	Pilot capped at 25 m^2; metered from day one; mushrooms and stores first	Full-cost greens above the Southern Harvest box price after 12 months: stop scaling
Cold chain failure in a shock	Power off for days; cool room lost; $20,000 of food gone (Meals on Wheels Eurobodalla, January 2020)	Backup sized and tested quarterly; freezer stock kept low before fire season; dry store carries the calories	Backup test fails twice: no perishables in the reserve until fixed
Reserve expiry	A 90-day bunker nobody eats from	Rolling stock; weekly meal from the store; monthly count; losses tracked	Losses over 5 per cent: cut the reserve to what rotates
Legal exposure of the exchange	A member's business trades credits without tax treatment; a trader supplies food unsafely	Business members on the dollar side; written ATO and council positions; produce swaps only for home-grown food	No written positions by month six: hold the exchange at the swap table until obtained
Distance between sites	Logistics planned on a weekly tablelands-to-coast run	Each site stands alone for 14 days; exchange is the second line	Any plan that needs a truck to keep Kianga fed is rejected
Grant dependency	Operating costs on grant lines	Grants for capital only; operations on hours, the cafe and member contributions	Any operating line without a non-grant source: do not start it
Governance drift	The food program becomes a private enterprise of a few residents, or a landlord-tenant food charge	Assets on the one title; the Commons not-for-profit operates; rules published; residents' cost at cost	Any food charge that is not at cost or in hours: independent review
Over-reach	The Institute tries to convene the region before the villages run	Section B7 limits; a node, not the convenor, until year three	Any regional role that needs staff before stage 2 is complete: decline



PART C

The growing network

What a healthy plant-based family needs, region by region.

How the villages become a network of food-growing projects: nutrition targets, land per person, crops, permaculture layout, companion planting, bush foods and climate resilience for the Canberra basin, the Southern Tablelands and the far south coast.

C1 The answer in one page · C2 What a plant-based family needs and what the land must produce · C3 The network design · C4 Region 1: Canberra basin and Queanbeyan · C5 Region 2: Southern Tablelands, Bungendore and Braidwood · C6 Region 3: Far south coast, Kianga, Moruya and Bodalla · C7 The family-scale template · C8 Year one to year three programme · C9 What the network tests first

The answer in one page

Starting points

- No garden-scale yield has been published for lentil, chickpea, lupin, soybean or quinoa on the tablelands, or for taro, sweet potato, yacon or pigeon pea on the far south coast. The protein and starch figures for those crops use broadacre figures from Wagga Wagga, Leeton or the NSW DPI forage guide, labelled as such, until the network's own trials report. GAP
- Labour, not land, is the binding constraint. The only Australian measured figure is 6.0 hours per m^2 per year for about 5.9 kg of vegetables; a person's fruit and vegetables alone cost 113 to 700 hours a year, and an older gardener at 2 to 3 hours a week runs 15 to 40 m^2, a courtyard and not a diet. VERIFIED (McDougall et al 2019; National Allotment Society) INFERRED
- Four nutrients never come out of the ground: vitamin B12, long-chain omega-3 (DHA and EPA), vitamin D between May and August at 35 degrees south, and iodine unless seaweed is weighed. Australian people on plant-based diets measured in 2025 fell short on exactly these plus calcium. VERIFIED (Austin et al 2025; Smillie et al 2025; Cancer Council 2016)

What the network is

- Five growing sites in three climates, 22 to 210 km apart by road, run as one seed system, one ledger and one measurement frame, with each site standing alone for fresh food and the network moving only what travels well: seed, dry pulses, grain, nuts, oil, dried and fermented goods, and knowledge. INFERRED (section B4)
- Region 1, the Canberra basin and Young Street, grows the perishables (greens, herbs, berries, Asian greens, sprouts, mushrooms) in courtyards, the Commons and the basement lab, and holds the seed bank. It cannot grow the family's calories. INFERRED
- Region 2, the Southern Tablelands around Bungendore and Braidwood, grows the protein and the calories: faba bean, field pea, lupin, oats, wheat, potato, pumpkin, onion, garlic, plus hazelnut, chestnut, walnut and apple. It is the only region where a plant-based family's land budget closes. INFERRED (GRDC 2016; NSW DPIRD 2024)
- Region 3, Kianga with the Moruya and Bodalla flats, grows the second season: sweet potato, cowpea, soybean trials, citrus, avocado, macadamia, olive, banana in shelter, finger lime and lilly pilly, warrigal greens and beach-cast seaweed under the 20 kg a day rule. It supplies oil, winter vitamin C and iodine, not pulses. INFERRED (NSW DPI summer legume guide; NSW DPI marine vegetation kit 2014)
- The bush block holds the duplicate seed store and a native plant propagation block (section B5.4).

What the land can and cannot supply of a plant-based diet

- Can supply: vegetables, tubers and fruit; pulses from about 420 to 740 m^2 of tablelands faba bean for the family; nuts from 0.11 to 0.15 ha of hazelnut or chestnut after year six; most oil from olives and sunflower; iodine from weighed coastal seaweed. INFERRED (GRDC 2016; Hazelnut handbook 2024)
- Can supply only if the farm grows grain: 455 kg of dry grain a year for the family needs 0.14 to 0.27 ha of oats or wheat at 2 to 4 t/ha; no published tablelands yield was found. ASSUMED (yield)
- Cannot supply: B12 (adults 10 µg a day or 2,000 µg a week), DHA and EPA (algal supplement for children, the grandparent and anyone pregnant), vitamin D from May to August (GP-set dose for the grandparent, 600 IU a day for children, midday sun for all), and iodine without iodised salt or a weighed seaweed dose. A fixed annual cost per person. VERIFIED (Vegan Health; Vegan Easy; Cancer Council; FSANZ)

The five biggest risks

1. Yields: the pulse, grain, nut and tuber figures are drawn from elsewhere in NSW until local trials report. If tablelands faba bean yields 1 t/ha instead of 2 to 3, the family's pulse area doubles. INFERRED
2. Water at Bungendore: rain-fed only, 600 to 720 mm and falling under every NARCliM2.0 scenario, with the town bore cut to 216 ML a year. VERIFIED (NARCliM2.0 SET 2025; Part B)
3. Labour and continuity: the networks that lasted had a legal body, a named convenor per site and a reciprocity rule; the groups that died were built on a few founders. VERIFIED (COGS; Bega Seed Savers)
4. Climate variability, not just warming: October frosts, January heat, hail rising up to 10 per cent per decade, and Varroa removing feral bees from faba bean, field pea, lupin, soybean, sunflower, apple and macadamia pollination. VERIFIED (Raupach et al 2023; NFF Horticulture Council 2026)
5. Food law: sprouts, pressed oil, hulled pulses and preserves that move on the ledger are "sale or supply" under the NSW Food Act and Standard 4.2.6; low-acid canning stays out until a trained person runs the line (section B10). VERIFIED (legislation.gov.au; Snowy Monaro council page)

The first season's actions (summer 2026/27)

- Soil test (pH in CaCl2, Colwell P, texture, and acid sulfate screen at Kianga) at all three growing sites before any planting. INFERRED
- Log every harvest by crop weight, bed area and hours from the first week, using the five-field frame in section C3. INFERRED (McDougall method)
- Plant the year one trials: sweet potato cuttings and cowpea at Kianga in November; buckwheat and amaranth in the basin; order faba bean (PBA Samira or Zahra), field pea and narrow-leaf lupin seed for an April 2027 sowing at Bungendore; order hazelnut, chestnut and walnut trees for winter 2027. VERIFIED (windows) INFERRED (sequence)
- Start the two seed collections: working jars at each site now, the minus 20 C base store when the lab is built. INFERRED
- Write to the NSW Food Authority on sprouts and oil on the ledger, and to Eurobodalla Shire Council and Batemans Marine Park on beach-cast seaweed at Kianga. INFERRED
- Apply only for small grants such as FRRR Small and Vital this season; the capital items wait on the data. VERIFIED (Part B)

What a plant-based family needs and what the land must produce

Notes on the figures

- The NRV figures below come from a 2012 reproduction of the 2006 NHMRC values. VERIFIED in secondary source (Sanitarium summary tables 2012; MJA 2013)
- No published per 100 g iron, zinc and calcium figures were found for Australian pulses, kale and bok choy, so the mineral plan rests on named food sources rather than numbers. GAP
- Two measured Australian plant-based cohorts (240 adults, 66 adults) were below adequacy for B12, iodine, calcium and long-chain omega-3, and supplements closed the gap only for vitamin C. A growing network does not fix this; a supplement protocol does. VERIFIED (Austin et al 2025; Smillie et al 2025)

Daily targets for the five-person family

The family model is a man and a woman aged 19 to 50, a child aged 4 to 8, a child aged 9 to 13 and a grandmother over 70. Iron is already set at 1.8 times the standard RDI and zinc at 1.5 times, which the MJA authors recommend for plant-based diets because of lower absorption and phytate. VERIFIED (MJA 2013, Reid et al; Sanitarium tables)

Member	Energy kJ	Protein g	Iron mg	Zinc mg	Calcium mg
Man 19 to 50	12,400 to 12,800	64	14.4	21	1,000
Woman 19 to 50	10,050 to 10,350	46	32.4	12	1,000
Child 4 to 8	5,500 to 5,900	20	18	6	700
Child 9 to 13	8,200 to 8,900	40	14.4	9	1,000 to 1,300
Woman 70 plus	8,050 to 8,500	57	14.4	12	1,300
Family total	about 45,350	227	93.6	60	5,150

- All rows VERIFIED (Sanitarium tables citing NHMRC 2006); totals INFERRED. A male grandparent lifts protein to 251 g and zinc to 69 mg a day. INFERRED
- B12 10.2 µg, ALA 4.7 g, vitamin D 5 µg for the adults and children and 15 µg for the grandmother, long-chain omega-3 160 mg (man), 90 (women), 55 and 70 (children) per day. VERIFIED (same tables)
- Protein per kilogram: the NRV is 0.84 g/kg for men and 0.75 g/kg for women to age 70, higher after. ASSUMED
- Iodine: 90 µg for children 1 to 8, 120 µg at 9 to 13, 150 µg for adults; upper level 1,100 µg for adults and 300 µg for a child aged 4 to 8. ASSUMED (RDIs) VERIFIED (upper levels, FSANZ seaweed survey)

What the garden cannot supply

- B12: no reliable plant source; mushrooms, tempeh, miso and sea vegetables carry traces plus an absorption blocker. Adults at least 10 µg a day or 2,000 µg a week, never over 5,000 µg a week; children 15 to 50 µg a day at 4 to 8 and 20 to 75 µg at 9 to 13; the grandmother should not rely on food-bound B12. VERIFIED (Better Health Channel 2026; Vegan Health; Vegan Easy)
- DHA and EPA: the MJA review states vegetarian diets cannot meet the long-chain target without microalgal DHA and EPA or fortified foods; adults without a direct source should double the ALA intake from flax, chia, hemp and walnut. The Messina table gives 200 to 300 mg DHA plus EPA a day for children. VERIFIED (MJA 2013; Vegan Easy)
- Vitamin D in winter: 36 per cent of Australian adults are deficient in winter against 14 per cent in summer; in southern winters with UV below 3 all day, midday sun on bare skin is advised; no Australian government page gives a supplement dose. VERIFIED (Cancer Council 2016; Healthdirect 2026) GAP (dose)
- Iodine discipline: dried kombu holds 2,100 to 4,300 mg iodine per kg, wakame 220 to 280, nori 9.4 to 20. An adult reaches the 1,100 µg upper level at 0.26 to 0.52 g of dried kombu, and a child aged 4 to 8 at 0.07 to 0.14 g. Wakame at 0.54 to 0.68 g dry a day meets an adult RDI. Locally cast golden kelp (Ecklonia radiata) is a brown kelp and must be assumed high-iodine until tested. VERIFIED (FSANZ seaweed survey) INFERRED (doses)
- The simplest iodine route is iodised salt in the village bakery and kitchen; mandatory iodised salt in Australian bread dates from 2009. ASSUMED

Kilograms per person per year by food group

The planning diet is a plant-based variant of the 2019 EAT-Lancet reference diet, with the 304 kcal a day of animal foods replaced by pulses at the top of range (100 g dry), nuts at 75 g and grain at about 250 g dry, and tubers at 100 g for a garden system where potato is a staple. VERIFIED (EAT-Lancet 2019 via PIK release) INFERRED (plant-based substitution)

Food group	g per day	kg per person per year	Family of five kg per year	Label
Whole grains, dry	250	91	455	INFERRED
Tubers and starchy roots	100	37	185	INFERRED
Vegetables	300	110	550	INFERRED
Fruit	200	73	365	INFERRED
Pulses and soy, dry	100	37	185	INFERRED
Nuts and seeds	75	27	135	INFERRED
Oils	40	15	73	INFERRED
Total	1,096	400	2,000	INFERRED

- Cross-check: measured average Australian intake is 1,210 g a day, so 1,096 g of mostly dry staples plus fresh produce is the right order. VERIFIED (Foodprint Melbourne 2015)
- The Australian Dietary Guidelines push vegetables higher: 6 serves of 75 g a day for a man is 164 kg a year, about 160 kg with a 20 per cent loss allowance. The network should plan vegetables to the ADG figure where it can and treat the EAT-Lancet figure as the floor. VERIFIED (ADG serve sizes via Tasmanian Health) INFERRED

Land per person: the tablelands, working shown

A 20 per cent allowance for harvest, storage and kitchen loss is added to every row. Yields are the tablelands planning figures, not the Wagga optimum. INFERRED

Food group	kg needed × 1.2	Yield kg/m^2/yr	Area m^2	Yield source and label
Vegetables	132	2.5 to 5	26 to 53	Adelaide median 0.21 kg/m^2/30 days VERIFIED (Csortan 2020), cool-season end INFERRED
Potato and roots	44	2 to 4	11 to 22	No Australian home figure ASSUMED
Pulses (faba)	44	0.2 to 0.3	147 to 220	2 to 3 t/ha southern NSW VERIFIED (GRDC 2016)
Grain (oats, wheat)	109	0.2 to 0.4	273 to 545	No tablelands figure ASSUMED GAP
Nuts (hazelnut kernel)	33	0.11 to 0.15	220 to 300	2.5 to 3.5 t/ha in shell × 43 per cent kernel VERIFIED (Hazelnut handbook 2024) INFERRED
Fruit (apple, pear, plum)	88	1 to 2	44 to 88	No published orchard yield found ASSUMED
Total excluding oil	450		720 to 1,230	INFERRED

- Family of five on the tablelands: 0.36 to 0.62 ha, of which intensive beds are only 185 to 375 m^2 and the rest is field and orchard land that need not be dug every year. If grain is bought in, the family needs 0.22 to 0.34 ha. INFERRED
- Olive oil: 73 kg a year for the family; no published olive yield or extraction rate was found, and Homeleigh Grove at Hall took about 14 years to bear. GAP (yield) VERIFIED (bearing age, Region Canberra 2023)
- Comparators: 232 m^2 per person (GROW BIOINTENSIVE plant-based design) and 1,400 m^2 (Dutch cropland model); the tablelands figure sits between. VERIFIED (Ecology Action; van Zanten 2016)

Land per person: the coast, working shown

Food group	kg needed × 1.2	Yield kg/m^2/yr	Area m^2	Yield source and label
Vegetables, two seasons	132	5 to 10	13 to 26	Sydney mean 5.94 kg/m^2 VERIFIED (McDougall 2019); second season ASSUMED
Sweet potato and potato	44	2 to 4	11 to 22	No published sweet potato yield found ASSUMED GAP
Pulses (cowpea grain)	44	0.04 to 0.10	440 to 1,100	0.4 to 1.0 t/ha dryland VERIFIED (NSW DPI forage guide)
Fruit (citrus, avocado, fig, berries)	88	1 to 2	44 to 88	No published south coast yield found ASSUMED
Nuts (macadamia)	33	not measured	not modelled	Trees on site (SVI); yield GAP
Grain	109	not grown	0	Shire is "far from grain growing areas" VERIFIED (ESC 2015)

- The coast is not a pulse region: cowpea grain at dryland yields needs 0.22 to 0.56 ha for the family's 185 kg, five times the tablelands faba bean area. No published south coast soybean grain yield was found. The coast should

grow pulses as trials and as green beans and eat tablelands faba bean, field pea and lupin for its protein. INFERRED (NSW DPI forage guide) GAP (soybean)

- The coast's intensive beds for the family are 24 to 48 m^2 for vegetables and tubers, about half the tablelands area, because of the second season. INFERRED
- Narooma is cooler than the Hunter climate often used in coastal planting guides (annual mean maximum 20.2 C, July minimum 6.9 C) so pecan is unsourced here and macadamia is already bearing on site. VERIFIED (BoM Narooma; SVI) INFERRED

The protein and oil question

- Protein per square metre at Wagga Wagga 2023 yields and Pulse Australia protein contents: faba bean 110 g/m^2, narrow-leaf lupin 95, red lentil 69, field pea 58, chickpea 31 on the AEGIC 13 per cent figure or about 48 at 20 per cent. Wheat at 3 t/ha and 12 per cent protein gives 36 g/m^2; hazelnut kernel 17 to 22 g/m^2 but 65 to 90 g/m^2 of fat. VERIFIED (NSW DPIRD 2024 Wagga trial; AEGIC 2024) INFERRED (per m^2) ASSUMED (wheat, hazelnut composition)
- At tablelands yields of 2 to 3 t/ha, faba bean still gives 50 to 75 g protein per m^2, double wheat. Faba bean and lupin are the protein backbone; lupin tolerates the acid soils the tablelands are expected to have. INFERRED (GRDC 2016)
- Family protein coverage: 185 kg of dry pulses at 25 per cent protein is 46 kg a year, 55 per cent of the family's 83 kg NRV requirement; 455 kg of whole grain at 12 per cent adds 55 kg; nuts and vegetables cover the rest with a surplus. INFERRED
- Oil: olives in the basin (Frantoio, Correggiola, Leccino suit the Canberra climate) and at Kianga (already on site), sunflower and pumpkin seed on the tablelands within the November to March window, and a domestic press at about $381 for sunflower, flax and hemp (not olives). Hemp seed needs a $572 NSW licence plus $200 a year and police checks. VERIFIED (Canberra Daily; Appliances Online; NSW DPI hemp manual 2025)
- Calcium: calcium-set tofu, tahini (sesame is too heat-demanding for the tablelands), almonds (frost-exposed) and Asian greens such as bok choy, fast and cold-tolerant in tableland autumn and spring beds. Bok choy, kale and collards carry winter calcium and vitamin C. VERIFIED (Better Health Channel) INFERRED

The older-resident nutrition risks

- The NRV of 0.8 g/kg may not protect older adults against sarcopenia; the literature points to about 1.2 g/kg a day with leucine and exercise, and plant proteins have lower digestibility (pea DIAAS 62 against whey 100) and less leucine. A 61 kg grandmother at 1.2 g/kg needs 73 g a day, not 57, which lifts the family total to 243 to 261 g a day. VERIFIED (Putra et al 2021) INFERRED
- B12 absorption declines with age; older people on plant-based diets should use supplements or fortified foods regardless of diet quality. VERIFIED (Better Health Channel; Vegan Health)
- Vitamin D: older people and those mostly indoors are an at-risk group, and the grandmother's target is 15 µg, three times the adults'. VERIFIED (Healthdirect; Sanitarium tables)
- High-fibre diets fill small stomachs and cut iron, zinc and calcium absorption; energy-dense foods (nuts, tahini, oil, tofu) at every meal are the answer for a frail eater as for a child. VERIFIED (Better Health Channel) INFERRED

The network design

What other networks show

- No community growing network found anywhere feeds a large share of its members' diet. The best cases are Leicester allotments at their 1950s peak (over 16 per cent of the city's fruit and vegetables at 16 m^2 per person), Havana (a 280 g daily serve per resident) and Russian household plots (92 per cent of potatoes, secondary sources). All ran on individually tended plots on secure land with a strong coordinating body. VERIFIED (Edmondson et al 2020; Koont via Wikipedia; P2P Foundation)
- No Australian network publishes kilograms. Community Gardens Australia measures hours, visits and wellbeing, not produce. The Sun Villages frame below would be the first. VERIFIED (CGA 2024 survey)
- NSW DPI movement conditions for seed, fruit and produce between Queanbeyan, Bungendore and Narooma, including fruit fly rules, are checked before anything moves. INFERRED

The sites and their complementary climates

Site	Elevation and climate	Growing role	Binding constraint
Young Street, Queanbeyan	580 m; about 59 nights a year at or below 0 C at Canberra Airport Comparison; 594 to 637 mm	Perishables, seed bank, lab, stores, kitchen	Space
Farm near Bungendore	about 700 m, cold-air pond on the Lake George plain INFERRED; 50 to 60 frost nights by analogy with Braidwood	Pulses, grain, roots, nuts, apples	Rain-fed; water
Braidwood district	643 m; 50.1 nights at or below 0 C; 721.5 mm	Reference climate for the farm; markets	Short record (1965 to 1975)
Kianga, Narooma	0 to 50 m; July minimum about 6 to 7 C; 923 mm	Subtropical and temperate mix, two seasons, oil, seaweed	Wind, humidity, fire, east coast lows
Moruya and Bodalla flats	4 to 17 m; Bodalla July minimum 2.8 C (historic); 852 to 1,044 mm	Field trials of winter cereals and pulses on Class 1 to 3 alluvium	Frost on the flats; 2,471 ha of Class 1 and 2 land in the whole shire

- All climate rows VERIFIED (BoM stations 070014, 069010, 069022, 069018, 069148, 069007; ESC 2015); roles INFERRED.

The staggered harvest and the climate hedge

- The tablelands harvest dry pulses and grain in December to January and nuts in March to May; the coast harvests sweet potato and cowpea in March to April, citrus from May to September and avocado (Bacon) from March to May. The coast's winter vitamin C (citrus, standing greens) arrives when the tablelands are in their lowest fresh month. VERIFIED (windows, GRDC 2016; Daleys; NT DPI) INFERRED (overlap)
- Renard and Tilman's 50-year analysis of 176 crops in 91 nations found a severe national shortfall (combined yield down 25 per cent or more) about every eight years in the least diverse systems and about every 100 years in the most diverse; evenness mattered as much as crop count, and grains and legumes were linked to stability. Two sites 200 km apart in different climate zones are a village-scale version of that effect, though no study tests it at this scale. VERIFIED (Renard and Tilman 2019 via phys.org) INFERRED (application) GAP (village-scale test)

- The DOK trial (since 1978) found organic yields 15 per cent lower over six rotations with lower stability; plan at organic yields. VERIFIED (FiBL DOK factsheet)
- The tablelands hazards are uncorrelated: October frost on flowering fruit and early beans, January heat on tomatoes and lettuce, hail on whatever stands, drought on shallow-rooted summer crops, Varroa on insect-pollinated crops. A portfolio of autumn-sown pulses and grain, winter brassicas and roots, summer wind-pollinated grains, frost-dormant perennials and nut trees spreads the risk. INFERRED

What moves between sites and what does not

- Moves: seed (open-pollinated, non-PBR, dried, in sealed jars), dry pulses and grain, nuts in shell, pressed oil, dried fruit and herbs, fermented goods, written grow-out records, people for workshops. INFERRED (Seed Savers; Bega model; Food Connect)
- Does not move: fresh produce across the 210 km road between Young Street and Kianga. Both roads closed within the last six years, a round trip burns the diesel the corridor runs short of in a shock, and no small network found runs its own cold chain. Each site stands alone for fresh food and for 14 days of staples before exchange is counted. VERIFIED (sections B5.2 and B10) INFERRED
- Does not move without a biosecurity check: fruit, seedlings and soil from the coast to the tablelands, because Queensland fruit fly is present in eastern NSW and spreading south along the ranges, and NSW DPI movement conditions apply. VERIFIED (NSW DPI QFF vulnerability page)
- Rule: preserve at the producing site (dry, ferment, freeze), then move dry goods. Freezing loses 0 to 10 per cent of most nutrients and 30 per cent of vitamin C; drying loses up to 80 per cent of vitamin C and 50 per cent of folate; dry pulses and grain lose near nothing. VERIFIED (USDA retention table via World Vegetable Center)

The seed system: two banks

- Base collection at minus 20 C in the Young Street lab, as the National Seed Bank holds most of its collections, with a drying room before banking; the duplicate sits on the bush block or at Kianga, whichever has stable power first. VERIFIED (ASBP annual report 2024/25) INFERRED
- Working collections at every site in sealed glass jars with desiccant, cool and dry (about 5.6 C target), jars warmed before opening, germination tested on damp paper; Kianga's humidity makes desiccant non-negotiable. VERIFIED (Johnny's storage guide; BoM Narooma) INFERRED
- Grow-out beds at each site, because varieties stay adapted only where they are grown and reselected; this is how the Seed Savers' Network decentralised to over 100 Local Seed Networks, and how Bega Valley Seed Savers (about 120 varieties, sister collection in Cobargo) and Canberra Seed Savers work. VERIFIED (Seed Savers' Network; Bega District News 2022; Canberra Times 2021)
- Plant Breeder's Rights: a grower who bought PBR seed may save and resow it on their own holding, but selling or sharing later generations as seed needs the owner's permission. The network holds and exchanges only open-pollinated, non-PBR varieties; any PBR variety a member buys is for that member's own resowing. VERIFIED (IP Australia) INFERRED (rule)
- Biosecurity: NSW DPI restricts movement of plants, plant products, soil and equipment; the Bega Cupidon bean is multiplied locally because it is no longer on the permitted import list. Seed moves between sites dry and cleaned; soil and seedlings do not. VERIFIED (NSW DPI; Bega Valley Shire Council) INFERRED

Labour and the exchange

- Sydney's 13 gardens: 6.0 hours per m^2 per year, 5.94 kg per m^2, 1.29 kg per labour hour (range 0.21 to 2.28), benefit to cost 0.62 with labour costed and 2.81 without; gardeners averaged 21 years' experience. VERIFIED (McDougall et al 2019)
- At 1.29 kg per hour the 146 kg fruit and vegetable requirement is about 113 hours per person per year; at 0.21 kg per hour it is nearly 700. Calorie and protein crops yield less per hour by hand and no community figure covers them. INFERRED GAP
- A UK half allotment (about 125 m^2) needs at least 4 to 5 hours a week every week, with the first year hardest. An older gardener at 2 to 3 hours a week runs 15 to 40 m^2. VERIFIED (National Allotment Society) INFERRED
- Older growers: 331 older Australian gardeners called gardening critical to wellbeing and adapted their methods to keep going; a 22-study meta-analysis found reduced depression, anxiety and BMI. The limit is group continuity, not capacity: Bega Valley Seed Savers outlived its founders only because a few older women kept one morning a week. VERIFIED (Scott et al 2015; Soga et al 2017; Bega District News) INFERRED
- The exchange: one hour of growing equals one hour credit, at parity with every other hour on the ledger, and produce is distributed by a separate kilogram-per-hour table published each season. Blue Hen Garden paid about 0.25 kg of produce per hour because it built in coordination, surplus and a food bank share; the Sun Villages table can be set from the measured kg per hour at each site. VERIFIED (Blue Hen case study 2017) INFERRED

Accessible design for older growers

- Wicking beds and waist-height mobile covered beds are the two accessible bed types with an Australian community track record: SAGE Moruya's 14 wicking beds (chosen for drought and low maintenance) and its 2 m × 1 m × 41 cm bushfire-recovery wicking beds for 32 families; wheelable self-watering covered beds in aged care for wheelchair users. Raised-mixed and wicking beds also had the highest median yields in the Adelaide study. VERIFIED (About Regional 2019 and 2021; HelloCare 2024; Csortan 2020)
- Wicking beds for the Commons and courtyards; mobile beds for the lab; edges at 60 to 80 cm with a seat rail; firm 1.2 m paths. No Australian study measures bed height against drop-out. INFERRED GAP

Roles and a convenor per site

- Each COGS garden has a volunteer convenor; the society has 12 gardens, about 500 members and a waiting list over 50, and aims to maximise gardeners rather than output. Copy the convenor rule, not the output rule. VERIFIED (Canberra Times 2021; inkl)
- Roles per site: a convenor (rostered, rotated every two years, hours credited), a seed keeper, a harvest recorder, a food safety supervisor where processing happens, and a buddy for each grower over 75. Nothing weekly is owned by fewer than three people. INFERRED (section B10)
- Reciprocity: a new site or plot holder earns it by working at two others first, the Permablitz rule that has run since 2006. VERIFIED (Local Food Connect)

Measurement

- Five fields per site per season: bed area under crop, harvest weight by crop, labour hours split growing and coordination, hours credits issued, and destination. From these: kg per m^2, kg per hour, portions per m^2, share of residents' 146 kg a year, cost per kg, comparable with the only published benchmarks (Sydney 5.94 kg/m^2; Leicester 2.3; UK community gardens 1.59). VERIFIED (methods) INFERRED (frame)
- Planning yield for a well-tended Sun Villages bed is 2 to 4 kg/m^2/yr; the Sydney mean is an upper bound. INFERRED

Processing equipment for pulses, nuts and oil

Item	Capacity	Price	Label and source
Kimseed dehuller and scarifier	4 to 700 kg/h dehulling; 240 V single phase; chickpea, pea, lentil, cowpea	on quote	VERIFIED capacity (Kimseed)
Nut Solutions "Lifestyle Machine" cracker and dehusker	60 kg/h husking, 30 kg/h cracking; macadamia, hazelnut, almond	AU$10,200 plus GST delivered	VERIFIED (Nut Solutions Australia)
BioChef Vega domestic oil press	510 W; sunflower, sesame, flax, hemp, peanut; not olives; clogs on almond and hemp per one review	about AU$381	VERIFIED (Appliances Online)
Small-plot thresher and grain cleaner	needed for oats, wheat, quinoa, faba bean	no Australian price found	GAP (AgriFutures lists threshing of small crops as a live research gap)
Olive press or mill	needed for 73 kg oil a year	to be priced	GAP

- Stage 2 kit: one dehuller (quote), one cracker (about $11,220 inclusive), two domestic presses ($800); nuts travel to the cracker in shell. INFERRED

Food safety rules that bind exchange

- "Sell" under the NSW Food Act includes barter, so hulled pulses, pressed oil, sprouts and preserves that move for hours credit are a supply, not a household matter. The lab and the Commons kitchen are notified food businesses from the outset with a food safety supervisor. VERIFIED (section B6; Snowy Monaro council page) INFERRED
- Sprouts: Standard 4.2.6 applies to any activity that produces seed sprouts for sale or supply, requires effective decontamination and has no small-producer exemption. Sprouts for the household are outside it; sprouts on the ledger are inside it. VERIFIED (legislation.gov.au F2012L00023) INFERRED
- Allergen labelling: every labelled food sold in Australia since 25 February 2026 must show allergens in bold and in a summary statement; unlabelled food must have allergen information available. Lupin, soy, sesame, tree nuts and wheat are all declared allergens and all in this plan. VERIFIED (NSW Food Authority; FSANZ P1044) INFERRED
- Council pages restrict home-based food businesses to low-risk foods such as jams and chutneys; low-acid foods (above pH 4.6) carry a botulism risk when canned, so no low-acid canning goes on the ledger; freeze, dry or ferment instead. VERIFIED (Snowy Monaro council) INFERRED
- Greywater: never on food eaten raw or with edible parts at or below ground; subsurface only for diversion devices. Orchard and nut trees yes, salad beds no. VERIFIED (NSW 2008 guidelines; NSW Health 2000 policy)

Funding and potential partners

- FRRR Small and Vital, no DGR needed: trial seed, soil tests, jars, scales, the first wicking beds. VERIFIED (Part B)
- NSW Community Building Partnership 2027 round for the lab's processing room; Crown Reserves Improvement Fund ($13.5 million) only if a site is on Crown land. VERIFIED (NSW Government; Crown Lands NSW)
- NSW Landcare Enabling Program Phase 3 ($10 million, May 2026) funds regional Landcare networks (South East Landcare at Nowra received $518,293 and $248,342); the route is through South East Landcare and the Upper Shoalhaven Tree Start network at Braidwood. Local Land Services runs $50 Small Farms permaculture workshops, a good fit for the Bungendore operator. VERIFIED (Landcare NSW; NSW Government) INFERRED
- ACT Local Food Strategy: $200,000 first year, stalled August 2025, education platform unfunded; Young Street is in NSW and offers data, not grant claims. VERIFIED (ACT QTB)

- Partners: COGS, Canberra Seed Savers, Canberra City Farm, Southern Harvest, Mulloon Institute, Loriendale, Homeleigh Grove, Tweenhills (basin and tablelands); SAGE, SHASA, Old Mill Road, Bega Valley Seed Savers, South Coast Seaweed (coast). All VERIFIED as existing organisations. None is a partner until a one-page letter is signed, before any joint spend.



Illustration of a Canberra basin village, not a design of any site.

C4 · THE GROWING NETWORK

Region 1: Canberra basin and Queanbeyan

Starting points

- There is no frost count for Queanbeyan. The Bowling Club station (580 m, 1870 to 2021) leaves the frost and hot-day fields blank; the basin figures below are Canberra Airport Comparison (578 m, 1939 to 2010) and the sheltered Canberra Forestry site, 10 km away. VERIFIED (BoM 070072, 070014, 070015) GAP
- The calculation below uses the 50 homes of stage 3 at 10 to 20 m^2 of courtyard bed each and 90 residents as working assumptions, replaced by measured figures after the first season. ASSUMED (Part B)
- This site cannot grow the family's calories. At 2.5 to 5 kg/m^2, 90 residents' vegetables alone (11,880 kg a year with losses) need 2,400 to 4,800 m^2 of bed, and the courtyards together give perhaps 500 to 1,000 m^2. INFERRED

Climate and frost facts

- Canberra Airport Comparison: 59.1 nights a year at or below 0 C and 92.1 at or below 2 C; nights at or below 2 C by month: April 3.8, May 12.7, June 17.7, July 21.4, August 18.2, September 11.9, October 4.7, November 1.3, December 0.1, March 0.3. Lowest on record minus 10.0 C on 11 July 1971. Days at or above 35 C: 5.4 a year; at or above 30 C: 31.7. Rainfall 615.4 mm. VERIFIED (BoM 070014)
- Canberra Forestry (sheltered urban site): 43.2 nights at or below 0 C, 72.5 at or below 2 C, 654 mm; the gap between the stations is the margin a walled courtyard can win. Current Canberra Airport: July mean minimum 0.1 C, January mean maximum 30.0 C, 636.7 mm. Queanbeyan: mean maximum 20.6 C, minimum 6.4 C, 594.3 mm. VERIFIED (BoM 070015, 070351, 070072) INFERRED
- Reliably frost-free: December to February. Practical frost-free season about five to six months, early November to early April, with October and April carrying real risk. The Melbourne Cup tomato rule is custom, not a measured date. INFERRED (BoM monthly counts) VERIFIED (BoM climatologist via inkl)
- Trend: spring warming about 0.2 C per decade; more September and October frosts observed by ANU's Steven Crimp, with frost and heat now overlapping. NARCliM2.0 for the ACT: 26.8 fewer cold nights by 2050 under

medium emissions, plus 3.6 hot days, rainfall minus 7.2 per cent, spring minus 12.6 per cent. Plan for more variable, not simply milder. VERIFIED (inkl; NARCliM2.0 ACT snapshot 2025) INFERRED

- Hail-prone days rose by up to about 10 per cent per decade from 1979 to 2021; the 2022 hail at Homeleigh Grove took much of the olive crop. VERIFIED (Raupach et al 2023; Region Canberra 2023)

Soils

- Canberra soils are clay, sandy or loamy; hard clay takes gypsum, coarse sand and granite in the planting hole; strong compost mixes can cause root rot and nutrient toxicity. No pH values or lime rates were found for the basin. VERIFIED (ACT City Services) GAP
- The regional pattern is duplex soils with acidic, phosphorus-poor topsoil over dense clay; a CaCl2 pH and Colwell P test comes before any in-ground planting. Raised no-dig beds filled with imported compost and soil sidestep the clay in courtyards. INFERRED

What to grow in courtyards, the Commons and the lab

Season	Courtyards (10 to 20 m^2, wicking and raised)	Commons beds and orchard	Basement lab	Evidence
Spring (Sep to Nov)	Lettuce, spinach, silverbeet, peas, bok choy, carrot, beetroot; tomato and capsicum seedlings under cover	Potato (June to Sep), onion (to Sep), broad bean (Aug to Sep), asparagus crowns, rhubarb, sunflower, amaranth (Sep to Nov)	Seedling raising in heated boxes; mushroom logs inoculated late winter	Sowing windows VERIFIED (Seed Collection chart); methods VERIFIED (urbanfoodgarden guide)
Summer (Dec to Feb)	Bush beans, cucumber, zucchini, basil, French marigold, lettuce under 30 per cent shade	Sweet corn (Oct to Jan), pumpkin (Oct to Dec), climbing beans, buckwheat (trial), quinoa (trial, Nov sowing)	Sprouts (household only until notified); shiitake and oyster fruiting	Windows VERIFIED; quinoa and buckwheat INFERRED trial; shade INFERRED
Autumn (Mar to May)	Kale (Jan to Apr), cabbage, broccoli, garlic (March, per Bywong), broad bean (Mar to May)	Apple, pear, plum, quince harvest; olive table fruit from late April; walnut and chestnut from the farm	Root cellar stocked; seed drying and jarring	Windows VERIFIED; garlic March VERIFIED (Bywong Garlic via inkl)
Winter (Jun to Aug)	Standing kale, collards, bok choy, spinach (Feb to Nov), leek, parsnip	Potato planted from June; pruning; hail net maintenance	Mushrooms on logs and beds; minus 20 C seed store; preserving	Windows VERIFIED; mushrooms VERIFIED (Milkwood 2025)

- Courtyard output at 2.5 to 5 kg/m^2 on 15 m^2 is 37 to 75 kg a year, about 28 to 57 per cent of one person's EAT-Lancet vegetables or 18 to 35 per cent of the home's needs for two people. INFERRED (Csortan 2020 median extrapolated)
- Mushrooms: shiitake fruits on eucalypt logs (sugar gum, blue gum, ribbon gum) and sometimes blackwood; logs 1 to 1.2 m by 10 to 20 cm, cut late winter, inoculated within 2 to 3 weeks, colonised in 6 to 18 months, fruiting 3 to 7 years; spawn from Rootlab. Yields unquantified; not a B12 source. VERIFIED (Milkwood 2025; Rootlab; Better Health Channel) GAP (yield)
- Sprouts: the fastest protein-dense winter greens, but Standard 4.2.6 applies once supplied beyond the household. VERIFIED (legislation.gov.au)

Permaculture layout for a cold urban village

- Frost drainage: cold air runs downhill and pools behind barriers. Keep the lower edge of every courtyard and the Commons garden open (no solid fence or hedge downhill), put the frost-tender beds on the north side of masonry walls, and the hardy brassicas on the low side. INFERRED
- Thermal mass: the Forestry station's 16 fewer frost nights than the airport is the measured reward for shelter; north-facing masonry with dark water tanks at the back of the bed, fleece or cloches for roughly 2 to 4 C on the coldest nights (standard practice). VERIFIED (BoM stations) ASSUMED (cover gain)
- Polytunnel: one temporary tunnel per Commons block, removed when weather warms and replaced when it turns, plus heated propagation boxes and single-cell trays, as the cool mountainous guide describes. It starts tomatoes and capsicum in September and holds Asian greens through July. VERIFIED (urbanfoodgarden guide) INFERRED (use)
- Windbreak: deciduous fruit trees and espaliered apples on the south-west, not eucalypts near buildings; hail netting over the berry and fruit block, which also gives the heat protection NSW DPI recommends for cherries. INFERRED (NSW DPI cherry factsheet)
- Water: a 100 m^2 roof at 600 mm catches about 55,000 L a year at 0.9 runoff; a summer bed needs roughly 20 to 30 L per m^2 per week in January, so a 10,000 L tank per home is the minimum for 10 to 20 m^2 of bed. Bath and laundry greywater goes subsurface to fruit trees and trellised berries; salad and root beds stay on tank water. INFERRED (arithmetic from BoM rainfall) VERIFIED (NSW 2008 greywater guidelines)

Companion planting the evidence supports

- Supported: intercropping as a system (226 experiments, 16 to 29 per cent more yield per area and 19 to 36 per cent less fertiliser per unit product, best in 1 to 1.5 m relay strips); French marigold against glasshouse whitefly on tomato by airborne limonene, both as a companion and a late introduction; basil against whitefly in one trial (about 69 per cent lower); flowering strips (alyssum, calendula, cosmos, dill, coriander) for hoverflies, lacewings and parasitoid wasps; blue-banded bees raising tomato weight 15 to 20 per cent over wand pollination. VERIFIED (Li et al 2020; Conboy et al 2019; New Scientist via Bug Woman; Happy Valley Seeds; Aussie Bee)
- Ignore: flavour improvement; blanket good-neighbour tables descended from 1940s crystallisation work; mint beside tomatoes (it cut yield by competition); marigold as a general repellent; companion plants against fruit fly. Three sisters is a sound structural polyculture with no Australian trial. VERIFIED (same sources) INFERRED
- Design rule: relay strips of broad bean with sweet corn, marigold and basil edging the tomato beds, a flowering strip every third bed, nesting banks and reed bundles for native bees, and hand pollination of pumpkin and zucchini as routine. INFERRED (NFF 2026)

Bush foods for the basin

- Best bets on the ANPSA temperate list: native raspberry (Rubus parvifolius, local, flavour variable); mountain pepper (Tasmannia lanceolata, slow, needs moisture and a cool side); warrigal greens (hardy summer groundcover, blanch first); sea celery (damp, frost tolerant); wattles for seed (Acacia victoriae in the basin; harvest and roasting are labour); yam daisy (small tubers, rarely cultivated); old man and ruby saltbush; pigface in dry corners; muntries (frost tolerance unsourced); the cold-tolerant lilly pilly Syzygium smithii. VERIFIED (ANPSA 2007; SA Landscape Board; ANBG) INFERRED (site fit)
- Not for the basin outside glass: lemon myrtle, finger lime, Kakadu plum. INFERRED
- Nutrition where published: wattleseed has protein similar to other legumes, very high fibre and low starch, without figures in the UQ article; FSANZ holds Nutrition Panel Calculator values for mountain pepper and saltbush. Bush foods here add flavour, micronutrients and some protein, not calories. VERIFIED (UQ 2024; NACCHO on FSANZ) GAP INFERRED

- Where to buy: Tucker Bush range through nurseries, Australian Native Plants Society Canberra Region sales, the Upper Shoalhaven Landcare Tree Start network at Braidwood; the National Arboretum bushtucker garden is the reference planting. VERIFIED (Tucker Bush; Landcare NSW; National Arboretum)

Climate resilience tactics

- Sow the frost-tender crops in two batches, early November and early December, so one October frost or one November hailstorm does not take the season. INFERRED
- Shade cloth (30 per cent white) over lettuce and brassica seedlings in January and February; deep infrequent watering on clay; mulch rather than overwater. VERIFIED (ACT City Services) INFERRED
- Keep the winter vitamin C and calcium in standing crops (kale, collards, bok choy, broccoli) rather than in the dry store, because cook-and-drain loses up to 75 per cent of vitamin C. VERIFIED (USDA retention table)
- Choose apples for declining chill from Loriendale's 110 varieties near Hall; cherries (national crop down 15 per cent in 2026/27 on chill deficit) are not for this site. VERIFIED (Food Wine Travel; FreshFruitPortal 2026)

What this site cannot supply and must draw from the network

- Pulses, grain, nuts and most oil: from Bungendore. Winter citrus, avocado, macadamia and seaweed: from Kianga. Potatoes, pumpkins, onions and apples for the root cellar: from Bungendore, as the food security plan (Part B) already sets out. INFERRED
- Supplements for the whole village: bought. VERIFIED (section C2)



Illustration of the Southern Tablelands.

Region 2: Southern Tablelands, Bungendore and Braidwood

Starting points

- There is no published frost record for Bungendore, and Braidwood's frost counts rest on ten years (1965 to 1975). The crop plan below assumes the farm is colder than Braidwood, on the Lake George plain, as local growers report. INFERRED
- Lentil and chickpea are not tablelands crops on current evidence. Lentil frost damage at flowering begins at 31 degree-hours below 0 C at the canopy and yield then falls about 3.8 per cent per degree-hour; October still brings 3.6 to 4.7 nights at or below 2 C here. They are trial plots, not staples. VERIFIED (GRDC 2020; BoM) INFERRED
- Varroa removes feral honey bee pollination from faba bean, field pea, lupin, soybean and sunflower, and from apples; managed pollination of those broadacre crops is "unlikely to be viable" for most growers. The pulses still self-pollinate, with lower set. VERIFIED (NFF Horticulture Council via Moree Online News 2026) INFERRED
- Water: rain-fed only, 600 to 720 mm and falling; dams are sized under the NSW harvestable rights rules. VERIFIED (Part B; NARCliM2.0 SET)

Climate and frost facts

- Braidwood Monkittee Street (643 m): mean maximum 19.0 C, minimum 5.5 C; 721.5 mm; 50.1 nights at or below 0 C and 79.8 at or below 2 C; frost nights in November 1.3, December 0.2, March 0.9; lowest November minus 0.6 C, March minus 1.4 C; 3.2 days at or above 35 C. A 30-year resident record shows the season lengthening 1.36 days a year. VERIFIED (BoM 069010; Braidwood Times 2017)
- Practical frost-free window: four to five months, mid November to late March, with out-of-season frosts possible in any month. Bungendore at about 700 m on the plain is assumed colder. INFERRED

- NARCliM2.0 South East and Tablelands: baseline 88.9 cold nights below 2 C, 4.4 hot days, 743 mm; by 2050 medium emissions 23.2 fewer cold nights, 5 more hot days, rainfall minus 7.5 per cent with winter minus 12.1 per cent; by 2090 medium 39.3 fewer cold nights and winter minus 28.3 per cent. VERIFIED (NARCliM2.0 SET snapshot 2025)
- Growers: Bywong Garlic now plants in March because mid-November heat ends leaf growth; Jerrabatt Gully Organics at Bungendore expects a 50 per cent drop in tomato output per plant; an olive grower lost 90 per cent of a harvest. Hail is rising as for the basin. VERIFIED (inkl; Raupach et al 2023)

Soils

- Expect acidic, phosphorus-poor duplex soils over dense, often sodic clay subsoil. Site tests, with the NSW DPI acid soil leaflets and eSPADE profiles, set the pH, aluminium and Colwell P figures for each paddock. INFERRED
- Consequences: test pH (CaCl2) and Colwell P before the first pulse crop; lime where pH is below about 5.0; gypsum where subsoil disperses; phosphorus will be the first limit for legumes and brassicas and is an input cost to budget. Hazelnuts need deep well-drained loam and will not tolerate waterlogging or heavy clay, so site them on the upper slope. INFERRED VERIFIED (NSW DPI hazelnut Primefact 2016)

The field-crop role

Crop	Sowing or planting window	Yield (source)	Varieties or notes	Label
Faba bean	20 April to 15 May, first half preferred; also garden sowing Mar to May and Aug to Sep	2 to 3 t/ha southern NSW; 4.41 t/ha Wagga 2023	PBA Samira, PBA Zahra; late sowing cut yield 25 to 45 per cent; early sowing raises frost and Ascochyta risk	VERIFIED (GRDC 2016; NSW DPIRD 2024)
Field pea	Autumn, with faba bean	3.22 t/ha Wagga 2023	18 per cent protein; frost-tolerant vegetative	VERIFIED (NSW DPIRD 2024; AEGIC) INFERRED (window)
Narrow-leaf lupin	Autumn	2.70 t/ha Wagga 2023; no tablelands figure	35 per cent protein; tolerates acid soil; declared allergen	VERIFIED (NSW DPIRD; AEGIC) INFERRED GAP
Lentil, chickpea	Late April to May, trial only	2.54 and 2.41 t/ha Wagga 2023	Frost at flowering and heat at podding; no tablelands trial	VERIFIED (NSW DPIRD; GRDC 2020) GAP
Oats, wheat, barley	Autumn	No published tablelands yield	District farm crops; threshing is the constraint	INFERRED GAP
Quinoa	Trial: November sowing to ripen by late March	2.5 t/ha at Leeton, irrigated, late-December sowing	Kruso White; 4 to 5 ML/ha water; saponin washing; birds	VERIFIED (The Land 2020) INFERRED (window)
Buckwheat, amaranth	Nov to Feb; amaranth Sep to Nov	No published yield	Frost tender, 10 to 12 weeks; bee forage	VERIFIED (amaranth window) INFERRED
Sunflower, pumpkin seed	Sep to Dec; Oct to Dec	No published yield	Oil and protein inside the frost-free window	VERIFIED (windows) GAP
Potato	June to September	No Australian home figure	Root cellar staple	VERIFIED (window) ASSUMED (2 to 4 kg/m^2)
Onion, garlic	Feb to Sep; garlic March	180 to 240 days to onion maturity	Garlic earlier each year per Bywong	VERIFIED (Seed Collection; Eden Seeds; inkl)

Crop	Sowing or planting window	Yield (source)	Varieties or notes	Label
Sweet corn, pumpkin	Oct to Jan; Oct to Dec	No published yield	Grain maize marginal at Bungendore	VERIFIED (windows) INFERRED
Soybean	Mid Nov to Dec in lower districts	Not grown on tablelands	Only earliest maturity groups; marginal; trial	VERIFIED (NSW DPI forage guide) INFERRED

- Rotation: faba bean or lupin, then oats or wheat, then potato and brassica, then a summer buckwheat or sunflower break, in 1 to 1.5 m relay strips where labour allows. Family land here: 0.07 to 0.11 ha of pulses and 0.14 to 0.27 ha of grain (section C2). INFERRED (Li et al 2020; GRDC 2016)

Orchard and nuts

Crop	Window and bearing	Yield (source)	Notes	Label
Hazelnut	Plant winter; bears from about 3 years; 2 to 2.5 kg per tree at 6 years; 4.5 kg plus at 8 at Orange; 20 to 25 kg mature	1,000 kg/ha at year 6 at 500 trees/ha; 2.5 to 3.5 t/ha sustained; kernel 36 to 51 per cent	48 to 60 chill portions; over 100 frost days a year risks late frost on female flowers; 366 mm water Oct to Apr minimum; wind pollinated, self-incompatible, plant pollinisers; Varroa-proof	VERIFIED (Hazelnut handbook 2024; NSW DPI Primefact 2016)
Chestnut	Harvest late March to May	No published yield per tree	Tweenhills, Hoskinstown: 1,200 grafted De Coppi Marone on 10 ha for about 30 years; Sassafras over 1,000 trees	VERIFIED (Region Canberra 2018) GAP (yield)
Walnut	Harvest autumn	No published yield	Grown at Sassafras with the chestnuts; cool-temperate crop	VERIFIED (Region Canberra; Nuts for Life) GAP
Apple, pear, nashi, quince, plum	Winter planting	No published orchard yield	Loriendale 110 apple varieties near Hall; choose mid and low chill, late flowering; Varroa makes paid hives an input	VERIFIED (Food Wine Travel; Part B) ASSUMED (1 to 2 kg/m^2)
Olive	Table fruit from late April; oil from second week of May	50 t best harvest from about 2,000 trees at Hall	Frantoio, Correggiola, Leccino; about 14 years to bear; hail and frost exposed; marginal at Bungendore and Braidwood	VERIFIED (Region Canberra 2023; Canberra Daily) INFERRED (marginal)
Cherry, almond, fig, kiwifruit			Not for this site: chill loss, late frost, or no local evidence	INFERRED

- Hazelnut arithmetic for the family's 135 kg of nuts: 0.11 to 0.15 kg kernel per m^2 gives 0.11 to 0.15 ha, about 50 trees, first useful crop in year six; chestnut substitutes on cold ground. Net the fruit block and plant it on the upper slope. INFERRED

Varroa and pollination

- Varroa is established in five states and the ACT, feral honey bees are expected to fall 95 to 100 per cent, and about 300,000 managed hives were short for the 2026 eastern season; Bilpin apple growers link crop losses to it. VERIFIED (Moree Online News 2026; NRMA 2026; FreshPlaza headline)
- Varroa-proof crops: hazelnut, chestnut, walnut, oats, wheat, barley, maize, quinoa, amaranth, buckwheat (self or wind pollinated). Exposed: apples, pears, plums, berries, pumpkins, sunflowers, and set in faba bean, field pea and lupin. INFERRED (NSW DPI hazelnut; NFF)
- Plan: one or two managed hives at the farm under a Varroa management plan, season-long flowering strips (early wattle, bolting brassicas, phacelia, buckwheat, alyssum, saltbush and daisies), nesting banks for blue-banded and other native bees, and a paid pollination contract for the apple block budgeted from the 2026/27 season. INFERRED (Part B; Aussie Bee)

Hail and frost

- Frost: tree crops on upper slopes; autumn-sown pulses and grain take the frost half of the year; frost-tender crops confined to mid November to late March in two batches; fleece for the April and October edges. Hail: permanent net over fruit and berries; faba bean sown in two dates a fortnight apart as insurance. INFERRED (Raupach et al 2023; Homeleigh 2022)
- Water: the Mulloon Institute's 23,000 ha rehydration (leaky weirs, contours) between Bungendore and Braidwood is the local model, with no published production percentage; dams are sized to the harvestable right. VERIFIED (Mulloon Institute 2021)

Companion planting and bush foods for the tablelands

- Same evidence as the basin: relay strips, marigold and basil near tomatoes, flowering strips, no folklore tables. On the farm, relay strips of faba bean with oats are the Li et al case. VERIFIED (Li et al 2020) INFERRED
- Bush foods: native raspberry, mountain pepper on the cool creek line, warrigal greens, sea celery, frost-hardy tablelands wattles for seed, yam daisy in the grassland, saltbush on dry banks, Syzygium smithii in shelter; plants through the Upper Shoalhaven Landcare Tree Start network at Braidwood. VERIFIED (ANPSA; Landcare NSW) INFERRED

Climate resilience tactics

- Spread the portfolio in section C3 across sites so one hailstorm is not the season; store pulses and grain dry in sealed bins where losses are near zero (root cellar losses unsourced); plan at organic yields 15 per cent under conventional. INFERRED VERIFIED (USDA retention table; DOK) GAP

What this site cannot supply and must draw from the network

- Fresh greens in winter in quantity (the basin's polytunnel and standing brassicas), citrus and avocado (the coast), seaweed iodine (the coast), seed base store (the lab), and the cracker and press (the lab). INFERRED



Narooma, real drone footage, October 2026.

C6 · THE GROWING NETWORK

Region 3: Far south coast, Kianga, Moruya and Bodalla

Starting points

- The coast cannot grow the family's pulses at a sensible area. Cowpea grain of 0.4 to 1.0 t/ha dryland means 0.22 to 0.56 ha for 185 kg; no published soybean grain yield exists for the south coast; pigeon pea at Camden (34 degrees south) gave forage but no reported grain. The coast eats tablelands pulses. VERIFIED (NSW DPI forage guide; CSIRO 1980) GAP INFERRED
- No Australian yield or window was found for taro, yacon, cassava, arrowroot, amaranth, quinoa, millet, sorghum, sesame, peanut or small-scale rice on the south coast. These are trials, not plan lines. GAP
- Kianga already grows 32 kinds of food plants, among them apples, avocados, macadamias, mangoes, lychees, figs, olives, coffee, citrus and berries (SVI). The first task on site is a census and a harvest log, so every yield is recorded, before any new planting.
- Kianga sits inside Batemans Marine Park. Beach-cast seaweed collection follows the park rules and the NSW DPI personal limit (20 kg a day in the 2014 kit), confirmed with the park before collection starts. VERIFIED (NSW DPI kit 2014)
- No frost-day count exists for Narooma or Moruya Heads; the flats frost (Bodalla July minimum 2.8 C on a closed station) and the coast does not, by inference from monthly minima. VERIFIED (BoM) GAP INFERRED

Climate facts

- Narooma (25 m): mean maximum January 23.8 C, July 16.3 C; mean minimum January 16.8 C, July 6.9 C; 923 mm with March 109 mm the peak and August to September (51 to 57 mm) the trough; 9 am humidity 69 to 81 per cent; 3 pm wind strongest September to December. VERIFIED (BoM 069022)
- Moruya Heads (17 m, 1875 on): July minimum 5.9 C; 955 mm; 3 pm wind 22.6 km/h annual, 25 to 27 km/h October to January. Moruya Airport (4 m): July minimum 4.3 C, 852 mm, September 38.8 mm. Bodalla State Forest (12 m, closed 1961): June to August minima 4.0, 2.8, 3.7 C; 1,044 mm. VERIFIED (BoM 069018, 069148, 069007)

- Extremes: 102 to 118.6 mm in 24 hours on 12 May 2024; east coast lows with king tides have swamped Narooma; over 600 homes destroyed or damaged in 2019/20. VERIFIED (Bega District News 2024; Narooma News; About Regional 2021)
- Projections (Illawarra Shoalhaven snapshot, the nearest published): plus 1.0 to 1.7 C by 2050; hot days (baseline 2.5) plus 2.5 to 3.9; winter rainfall down 21 to 35 per cent by 2090; severe fire weather days roughly tripling under high emissions; sea level 23 to 104 cm by 2100, estuaries most exposed. VERIFIED (NARCliM2.0 ILLSHOAL 2025; AdaptNSW)
- Reading: the binding constraints are humidity, salt wind, the dry spring (the irrigation pinch for establishing summer crops) and deluge drainage, not cold or heat. The direction of change favours subtropical perennials and disfavours winter cereals. INFERRED

Soils

- Eurobodalla land capability: Class 1 and 2 (arable) together 2,471 ha, about 3 per cent of rural land; Class 5 is 68 per cent; prime river flat $15,000 to $20,000 a hectare in 2015; acid sulfate soils and salt intrusion flagged. VERIFIED (ESC Discussion Paper 2, 2015)
- Kianga's soils are tested for texture, pH and acid sulfate risk before planting; avocado will not tolerate wet feet or heavy soil and goes on mounds. VERIFIED (Daleys)

The subtropical role

Crop	Plant window	Yield (source)	Notes	Label
Sweet potato	Cuttings late Oct to Nov; 18 to 22 weeks; harvest Mar to Apr	No per hectare figure in the source	Hills 0.5 m high, 1 to 1.5 m apart, plants 30 cm apart; virus-indexed cuttings or supermarket tubers	VERIFIED (NT DPI VG3) INFERRED (window)
Cowpea	Mid Oct to early Jan once soil holds 18 C at 9 am for three or four days	Grain 0.4 to 1.0 t/ha dryland; dry matter 2 to 3 t/ha	Caloona, Poona, Red Caloona	VERIFIED (NSW DPI forage guide)
Lablab	Same	Dry matter 0.5 to 5 t/ha dryland	Highworth flowers April and is killed by May frost; grain only if frost holds off to late June	VERIFIED (NSW DPI)
Soybean	Mid Nov to Dec	Up to 10 t/ha dry matter irrigated; no published grain yield	District grain varieties not named for the south coast	VERIFIED (NSW DPI) GAP
Pigeon pea	Sow by early Nov	Forage to end of April; no grain	5 to 6 plants per m^2; slow early growth, weed control	VERIFIED (CSIRO 1980)
Common bean (dry)	Spring and late summer	Grown at Old Mill Road; Bega Valley Cupidon and Wilmar pinto projects	Two seasons possible	VERIFIED (AFSA 2016; Bega Valley Shire Council) INFERRED
Taro, yacon, upland rice	Trial	None found	Taro needs wet ground; yacon is frost-tender	GAP
Macadamia	On site, bearing	No yield	Frost at flowering and days above 35 C are the limits, both outside Narooma's means; expansion south plausible by 2050	(SVI) VERIFIED (NSW DPI factsheet)

Crop	Plant window	Yield (source)	Notes	Label
Avocado	Winter planting on mounds	No yield	Bacon (B, to about minus 5 C, March to May), Zutano (B, minus 4 C, June to August), Dwarf Shepard (B); pair with an A type (Hass, Reed, Pinkerton); shelter young trees	VERIFIED (Daleys)
Citrus	Already on site; SHASA planted oranges, limes, lemons at Moruya	No yield	Winter vitamin C	(SVI) VERIFIED (The Beagle 2020)
Banana	Sheltered north-facing frost-free pocket	None at 36 S	Goldfinger (above 5 C, wind resistant, props under bunches) or Dwarf Ducasse (2 to 3 m; survived Melbourne winters without fruiting); long cycle	VERIFIED (Daleys) INFERRED
Olive	On site	No south coast yield or variety data	Oil for the network	(SVI)
Fig, apple (low chill), berries, mango, lychee, coffee	On site		Mango and lychee are microclimate-dependent	(SVI) INFERRED

- Calendar: spring, irrigate to establish sweet potato, cowpea, soybean, corn and pumpkin; summer, fruit fly netting and drip; autumn, harvest sweet potato and cowpea, Bacon avocado from March, plant brassicas, roots and Asian greens for the second season; winter, citrus, Zutano avocado, standing greens, potato on drained beds, seaweed after storms. INFERRED
- Winter cereals and chickpea on the Moruya and Bodalla flats: possible in autumn on Class 1 to 3 alluvium, but June rain of 85 to 130 mm with 75 to 79 per cent morning humidity coincides with chickpea flowering; no local yield evidence; trial only, and only with a landholder on the flats. INFERRED

Seaweed under the NSW rules

- No permit for personal collection under 20 kg a day of beach-cast seaweed; more than that, or any cutting of attached vegetation, needs a permit; commercial sale needs a 12-month Marine Vegetation Collection permit with monthly returns; no collection in aquatic reserves; marine park sites need consultation. The current limits are confirmed with NSW DPI and the marine park before collection. VERIFIED (NSW DPI kit 2014)
- South Coast Seaweed at Batemans Bay holds a licence for beach-cast golden kelp products; Auskelp has lodged a 200 ha kelp farm near Eden for 2027. Anything on the ledger comes from the licensed harvester; household collection only. VERIFIED (FRDC 2022; About Regional 2026) INFERRED
- Iodine discipline: golden kelp is a brown kelp; assume kombu-level iodine (2,100 to 4,300 mg/kg dry) until a laboratory test says otherwise, which means a pinch (0.035 to 0.07 g dry) meets an adult RDI and 0.26 to 0.52 g reaches the upper level. Sea lettuce (Ulva) and Neptune's necklace are the safer daily greens; test them too. Pregnant and breastfeeding women should not over-consume brown seaweeds. VERIFIED (FSANZ) INFERRED
- Seaweed wrack as mulch and compost on the orchard is the lower-risk use and the main resilience input. INFERRED

Fire-wise layout under the RFS APZ rules

- The standard: tree crowns 2 to 5 m apart and 2 to 5 m from any dwelling; no continuous canopy from hazard to house; native tree and shrub clumps under 20 per cent cover; understorey under 3 m removed or thinned; lower limbs pruned to 2 m; no shrubs abutting the house, or only low-flammability plants over pebbles or crushed tile; grass short and green; woodpiles and bulk mulch away from the house; windbreak trees set back about their mature height; vegetable gardens count as part of an APZ; avoid stringy or fibrous bark and favour high moisture and salt content, low volatile oils and smooth bark. VERIFIED (NSW RFS Standards for APZ)
- Kianga layout: vegetable beds and irrigated orchard as the inner APZ ring; halophyte borders (pigface, saltbush, samphire, warrigal greens) as the low-flammability edge; fruit trees with 2 m clear trunks and crowns 2 to 5 m apart; mulch stored away from buildings; tanks with fire fittings. Citrus, fig, lilly pilly, mulberry and olive are commonly rated low flammability; each is checked against the Landcare and CFA flammability lists. INFERRED

Salt wind and humidity

- 3 pm winds of 22 to 27 km/h from spring through summer at Moruya Heads, onshore and salt-laden, make windbreaks a prerequisite for banana, avocado and citrus within a few hundred metres of the beach. Windbreaks set back their mature height from buildings; coastal natives with salt tolerance (Rhagodia, Banksia integrifolia, Leptospermum laevigatum) as the outer line and macadamia and olive as the inner. VERIFIED (BoM; RFS) INFERRED (species)
- 9 am humidity of 75 to 81 per cent from January to July means constant anthracnose, brown rot and mildew pressure: wide spacing, pruning for airflow, drip not overhead, resistant varieties, seed dried with desiccant. Raised beds and mounds everywhere, because 100 mm days arrive in any season. VERIFIED (BoM Narooma) INFERRED

Fruit fly

- Queensland fruit fly is found across eastern NSW, overwinters in warm spots, and gains April to October suitability by 2050. Companion plants do not control it; netting, baiting and hygiene do. Assume it present and seasonal at Kianga. VERIFIED (NSW DPI QFF page; Happy Valley Seeds) INFERRED
- Exclusion netting on stone fruit, fig and citrus; protein baits from September; fallen fruit collected weekly; no fruit to the tablelands outside the DPI movement conditions. INFERRED

Companion planting and bush foods for the coast

- Supported here: flowering strips of umbellifers and daisies through the beds; nasturtium or mustard trap rows that are actually pulled; three sisters as structure (corn holds beans, pumpkin shades soil); legume green manures turned in before the next crop; dense dug-in marigold or mustard biofumigant covers for nematodes on sandy soil. Folklore: basil for tomato flavour, carrots beside tomatoes, anything against fruit fly. VERIFIED (Happy Valley Seeds summary) INFERRED
- Bush foods within range at Kianga: Syzygium smithii (local), riberry, Davidson plum (shelter and moisture), finger lime (shelter and drainage), midyim (coastal sands), native raspberry, muntries, warrigal greens, pigface, sea celery, samphire and Rhagodia candolleana (all local coastal plants), lemon myrtle in frost-free shelter, native ginger in shade, Illawarra plum, sandpaper fig on the creek line. Unsuited: Kakadu plum, quandong, Burdekin plum. INFERRED (range inferences, not local records)

- Nutrition where published: 12 native fruits including Davidson plum, riberry, finger lime and muntries showed antioxidant capacity above blueberry (Kakadu plum 204.8 and Burdekin plum 192.0 trolox equivalents per gram against blueberry 39.45); all species tested contained vitamin E and folate with lutein, magnesium, zinc, calcium and selenium noted. Species-level vitamin C and mineral figures are published in RIRDC 09-133 and Konczak's 2010 paper. Bush foods here are a nutrient-dense garnish layer and the halophytes add mineral salts; none adds protein, oil or starch. VERIFIED (ScienceDaily 2007; AgriFutures) INFERRED
- Where to buy: Daleys (mail order), Tucker Bush through nurseries, Tilba Nursery, and Eurobodalla Regional Botanic Garden Friends plant sales. VERIFIED (listings)

Water and wastewater

- The planned 480 kL of tanks against a July to September trough of about 160 mm and winter rain falling 21 to 35 per cent by 2090: enough for roughly 2.5 to 5 ha of drip-irrigated summer vegetables at 1 to 2 mm a day for 60 days only if spring rain refills them. Arithmetic, not design; a water balance comes first. INFERRED (BoM; NARCliM2.0 ILLSHOAL)
- The council-approved wastewater system: recycled water to orchard, nut and cooked-vegetable crops by subsurface or drip, never to salad or berry crops eaten raw, unless the approval conditions explicitly permit more. The approval document governs. VERIFIED (NSW Health policy 2000) INFERRED

What this site cannot supply and must draw from the network

- Pulses, grain and the processing kit: from the tablelands and the lab. Cold-chill fruit and nuts (hazelnut, chestnut, walnut, most apples): from the tablelands. Seed base store: from the lab, with Kianga as a candidate duplicate site once stand-alone power runs. INFERRED
- Kianga must stand alone for 14 days before any of that counts, as the food security plan (Part B) sets out.



Illustration, not a design of any site.

C7 · THE GROWING NETWORK

The family-scale template

How to read the tables

- Yields in the three tables are planning figures from the Adelaide and Sydney vegetable studies and southern NSW broadacre trials. The areas are the first-year starting point, refined each season by the network's own measurements. VERIFIED (Csortan 2020; McDougall 2019; GRDC 2016; NSW DPIRD 2024) INFERRED
- The template is for five person-equivalents; children eat less and the man more, and the grandmother's protein is set at 1.2 g/kg. INFERRED

Region 1: Young Street (courtyard plus Commons share plus lab)

Crop	Area m^2	Expected yield kg/yr	Nutrient role	Label
Mixed vegetables, courtyard wicking beds	15	37 to 75	Vitamin C, folate, calcium (bok choy, kale)	INFERRED (Csortan 2020)
Mixed vegetables, Commons share	50	125 to 250	Vegetables to the ADG 160 kg per person	INFERRED
Potato, Commons	20	40 to 80	Energy	ASSUMED
Broad bean, green and dry, Commons	20	4 to 6 dry	Protein (25 per cent)	VERIFIED (GRDC yield) INFERRED
Berries (raspberry, currant)	10	not measured	Vitamin C, antioxidants	GAP
Apple and plum, espaliered	15	15 to 30	Fruit	ASSUMED
Mushrooms on logs	5	not quantified	Flavour, some protein; not B12	GAP (Milkwood)

Crop	Area m^2	Expected yield kg/yr	Nutrient role	Label
Sprouts, household	1	not measured	Protein-dense greens in winter	GAP
Total	about 136	220 to 440	Covers 30 to 60 per cent of family vegetables and fruit, under 5 per cent of protein	INFERRED

Region 2: Bungendore farm (the family's field and orchard share)

Crop	Area m^2	Expected yield kg/yr	Nutrient role	Label
Faba bean	500	100 to 150 dry	Protein backbone, iron, zinc	VERIFIED (GRDC 2 to 3 t/ha) INFERRED
Field pea	150	30 to 45 dry	Protein	VERIFIED (Wagga 3.22 t/ha, scaled down) INFERRED
Narrow-leaf lupin	250	40 to 60 dry	Protein (35 per cent); allergen	INFERRED
Oats and wheat	2,000	400 to 800 dry	Energy, 55 kg protein; threshing needed	ASSUMED (2 to 4 t/ha) GAP
Potato, onion, pumpkin, garlic	150	300 to 600	Energy, root cellar	ASSUMED
Sunflower (oil and seed)	200	not measured	Oil, zinc, vitamin E	GAP
Hazelnut (50 trees)	1,200	130 to 180 kernel from year 8	Fat, some protein; Varroa-proof	VERIFIED (handbook) INFERRED
Chestnut and walnut (10 trees)	400	not measured	Starch and fat	GAP
Apple, pear, plum, quince	400	400 to 800	Fruit; paid pollination	ASSUMED
Olive (10 trees, basin edge only)	300	nil until year 14	Oil	VERIFIED (Homeleigh bearing age) GAP
Total	about 5,550 (0.56 ha)		Closes the family's protein, energy, nut and fruit budget except oil	INFERRED

Region 3: Kianga (two seasons)

Crop	Area m^2	Expected yield kg/yr	Nutrient role	Label
Mixed vegetables, two seasons	40	200 to 400	Vegetables; winter greens fresh	INFERRED (McDougall 5.94 kg/m^2 upper bound)
Sweet potato and potato	40	80 to 160	Energy, beta-carotene	ASSUMED (potato analogue) GAP

Crop	Area m^2	Expected yield kg/yr	Nutrient role	Label
Cowpea and common bean, dry	200	8 to 20 dry	Protein; a fraction of need	VERIFIED (DPI 0.4 to 1.0 t/ha)
Soybean trial	50	not measured	Calcium-set tofu input if it ripens	GAP
Citrus (6 trees)	100	not measured	Winter vitamin C	GAP
Avocado (Bacon, Zutano, Hass)	100	not measured	Fat, folate	GAP
Macadamia (on site)	200	not measured	Fat; needs the cracker	GAP
Olive (on site)	150	not measured	Oil	GAP
Fig, banana (sheltered), low-chill apple, berries	100	not measured	Fruit	GAP
Warrigal greens, saltbush, pigface, lilly pilly edge	50	not measured	Micronutrients, fire edge	GAP
Seaweed, beach-cast, household	0	under 20 kg a day wet; dose by weight	Iodine; mulch	VERIFIED (DPI 2014 rule)
Total	about 1,030		Covers vegetables, tubers, fruit, oil and iodine; under 10 per cent of pulses	INFERRED

- Network sum for the family: about 0.73 ha across the three regions, of which 0.56 ha is tablelands field and orchard, consistent with the 0.36 to 0.62 ha tablelands budget in section C2 plus coastal and basin beds that double the vegetable and fruit cover. INFERRED



Illustration, not a design of any site.

C8 · THE GROWING NETWORK

Year one to year three programme

Timing

- Year one is a setting-up year: soil tests, logs, trials and seed; the first protein crop is the faba bean sown in April 2027 and harvested in December 2027; the first nuts arrive in 2030 at the earliest. INFERRED
- The farm's sowing window is April to May, so the farm layout and operator are set early in year one to keep Region 2 on time. INFERRED (section B9)

Year one (summer 2026/27 to spring 2027)

Season	Region 1	Region 2	Region 3	Measured	Decision point
Summer 2026/27	Soil test; two demonstration wicking beds; buckwheat and amaranth trial; seed jars	Farm fact sheet; soil test; order faba, pea, lupin seed; fence the trial block	Census and harvest log of the 32 plants; sweet potato and cowpea in November; fruit fly nets; seaweed letter	Bed area, kg, hours from week one	First small grant lodged
Autumn 2027	Garlic in March; broad bean, kale, bok choy; first harvests logged	Lime and phosphorus to test; faba bean 20 April to 15 May in two dates; field pea; lupin; 50 m^2 lentil and chickpea plots; oats	Sweet potato and cowpea weighed; second-season brassicas and roots; Bacon avocado	kg per m^2 and hours per crop	Which coastal pulse, if any, continues
Winter 2027	Standing greens; potato from June; mushroom logs cut and inoculated	Hazelnut with pollinisers, chestnut, walnut and apple on the upper slope under net; hives under a Varroa plan	Citrus and Zutano weighed; windbreak planted; water balance; wastewater approval conditions applied	Tree numbers; water balance	Dam sized to the harvestable right

Season	Region 1	Region 2	Region 3	Measured	Decision point
Spring 2027	Polytunnel up; Commons layout with frost drainage; flowering strips	Quinoa trial sown November; sunflower, pumpkin, potato; hand-pollination roster	Establishment irrigation; second sweet potato and cowpea; soybean trial mid November	Pollination and frost dates logged	Whether quinoa and soybean continue

Year two (summer 2027/28 to spring 2028)

Season	Region 1	Region 2	Region 3	Measured	Decision point
Summer 2027/28	First full Commons season; courtyard beds at 20 homes	Faba bean, pea, lupin harvested and weighed; hand threshing; sealed bins; lentil and chickpea result	Second-season beds; fruit fly baiting; seaweed iodine test	First protein kg; cost per kg	Year three faba bean area set from measured yield
Autumn 2028	First apple and plum; preserving (freeze, dry, ferment; no low-acid canning)	Second pulse sowing on the measured area; oats on pulse ground	Sweet potato and cowpea at scale; seed grow-outs; tablelands dry goods arrive	Share of the 185 kg of pulses grown	Whether the coast keeps dry pulses or switches to green beans
Winter 2028	Lab first tranche: seed bank, root cellar, mushroom room; Food Authority notification	Tree block maintenance; second hive	Citrus; duplicate seed store if stand-alone power runs; fire drill	Nutrient coverage by food group	Where the duplicate store lives
Spring 2028	Metered water and energy per bed; second quinoa trial	Sunflower pressed; hemp licence decision	Banana, finger lime and Davidson plum in shelter	Oil kg per m^2	Buy the cracker and dehuller or defer

Year three (summer 2028/29 to spring 2029)

Season	Region 1	Region 2	Region 3	Measured	Decision point
Summer 2028/29	Courtyards at 40 homes; kg-per-hour table published	Third pulse harvest; first grain threshed; lupin kept or dropped	Macadamia cracked; cowpea at the measured area	kg per site, share of diet, hours per kg	First annual network report
Autumn and winter 2029	Bush food plantings	First apple crop with paid pollination	Olive pressing; licensed seaweed on the ledger	Cost per kg against the Southern Harvest box	Scale, hold or stop each crop line
Spring 2029	Replication pack: beds, rules, data, costs	Rotation locked for five years	Second avocado and citrus block if yields justify	Network share of a plant-based family diet	Year four to six targets set and published

- Decision rule across all three years: any crop whose measured cost per kilogram exceeds the Southern Harvest box price on a full-cost basis after two seasons is grown only for seed, resilience or learning, and the plan says so. INFERRED (Part B rule)

What the network tests first

The five numbers that matter most

- The protein and energy budget rests on five numbers the network measures for itself: tablelands faba bean yield on the farm, tablelands oat or wheat yield, hazelnut yield on a frost-prone site, coastal sweet potato yield and coastal cowpea grain yield at garden scale. Each is a year-one trial. INFERRED

Yields to measure locally, in order of consequence

1. Faba bean, field pea and lupin at Bungendore: no tablelands trial; GRDC's 2 to 3 t/ha is for Wagga, Junee and Lockhart. VERIFIED (GRDC 2016) GAP
2. Oats, wheat and barley on the Southern Tablelands: the NSW DPI Winter Crop Variety Sowing Guide is the starting reference. GAP
3. Potato, pumpkin, onion, garlic, carrot, beetroot, brassicas and sweet corn per square metre: no Australian home figure found. GAP
4. Hazelnut and chestnut per tree on frost-prone ground; walnut yields anywhere local. GAP
5. Sweet potato, taro, yacon, cowpea, soybean and pigeon pea grain on the far south coast. GAP
6. Olive oil yield and extraction rate at both sites; macadamia yield at Kianga. GAP
7. Quinoa outside irrigated Leeton; amaranth and buckwheat anywhere in Australia. GAP
8. Mushroom yield per log or bed. GAP

The trials the network runs in year one

- Tablelands: lentil, chickpea, lupin and soybean plots of 50 m^2 each beside a 500 m^2 faba bean reference strip, sown in two dates, with canopy temperature logged so the GRDC degree-hour thresholds can be applied, and bird and hail loss recorded separately from yield. INFERRED (GRDC 2020)
- Coast: taro in a wet corner, yacon on a raised bed, pigeon pea at 5 to 6 plants per m^2, and upland rice on 20 m^2, each weighed, beside the sweet potato and cowpea reference plots. INFERRED (CSIRO 1980; NT DPI)
- Quinoa in both regions: November sowing in the basin and at Bungendore, and a late-December sowing at Kianga if water allows, Kruso White, with saponin washing and bird loss measured. INFERRED (The Land 2020)
- Bush foods: a 50 m^2 block at each site of the species listed in sections C4 to C6, with survival through the first winter and first summer recorded, and samples sent for composition analysis so local composition figures exist. INFERRED
- Cost per kilogram metering: every trial carries bed area, hours, seed cost, water (metered), inputs and harvest weight, reported in the five-field frame, so the first annual report gives kg per m^2, kg per hour and dollars per kg for every crop line against the Southern Harvest box price. INFERRED (McDougall method)

Rules to confirm before scaling up

- NSW DPI movement conditions for fruit fly and other pests between the coast and the tablelands.
- The harvestable right for the Bungendore dam.
- Batemans Marine Park rules and the current NSW DPI personal collection limit for beach-cast seaweed.
- The NSW Food Authority position on sprouts, pressed oil and low-acid canning on the exchange.
- The Kianga wastewater approval conditions on food crops.

FIRST STEPS AND CONTACT

What happens first

Stage 0 runs inside existing buildings for under $15,000. It gives every site real numbers before any capital is spent.

1. Count and survey residents, and start a 14-day rolling food reserve at each site.
2. Cook one shared meal a week from the store, and open a weekly growers' table.
3. Open a 30-account pilot on the village exchange and log every hour and every harvest.
4. Soil test every growing site and plant the year-one crop trials.
5. Publish what is measured, every year.

WATCH

Feeding the Villages, the film: youtu.be/QiEAewc7znw

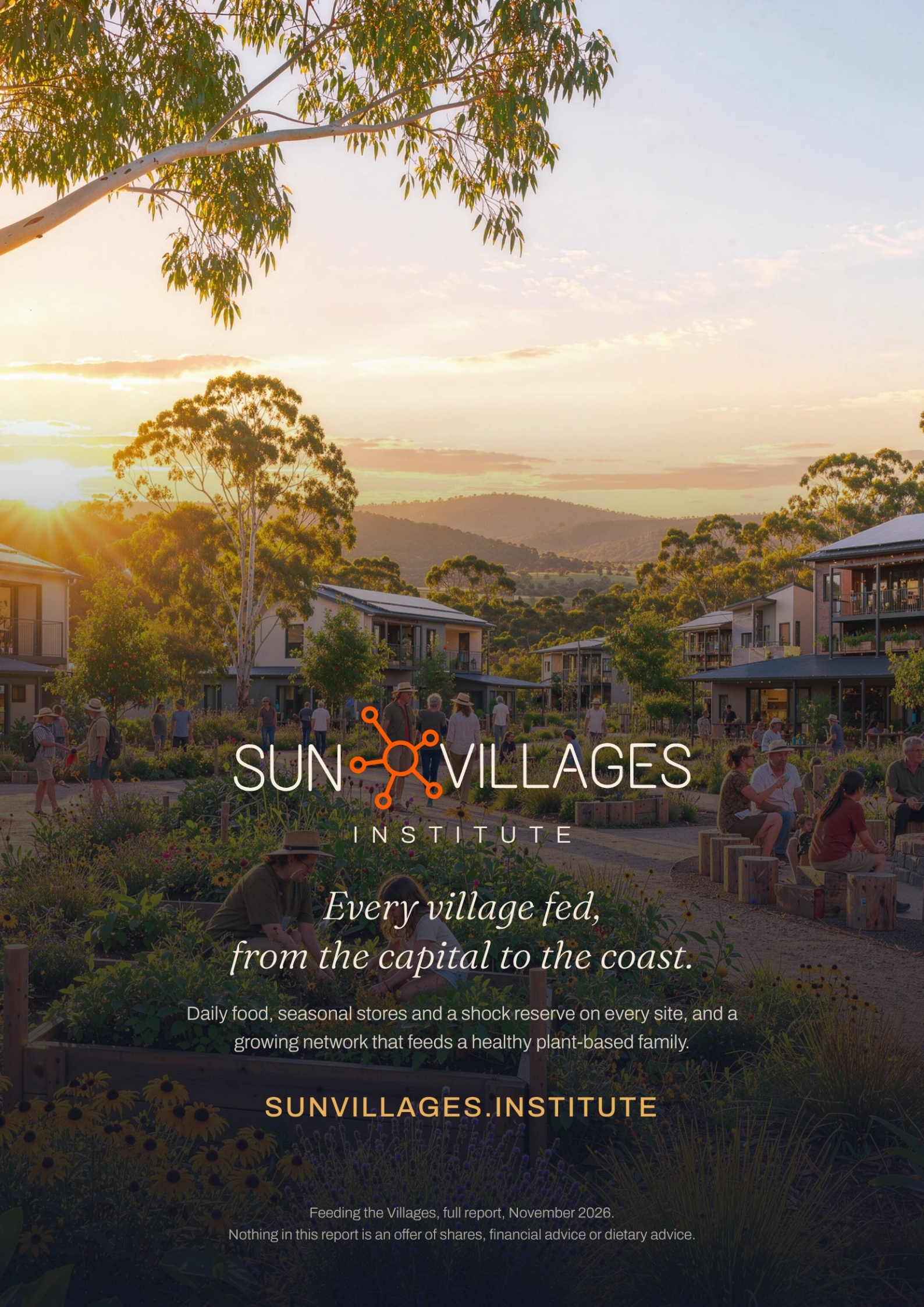
How the village exchange works: youtu.be/rmPKgXynEV4

CONTACT

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Important information. This report sets out the plans of the Sun Villages Institute and the evidence behind them, drawn from public sources read on 3 and 4 November 2026. Plans, costs, timing and partners may change. Organisations named in this report are not partners of the Institute unless the report says so. Nothing in this report is an offer of shares or financial advice, and nothing in it is dietary or medical advice. Images are illustrations, not designs of any site, except the Narooma aerial, which is real drone footage.



SUN VILLAGES

INSTITUTE

Every village fed,
from the capital to the coast.

Daily food, seasonal stores and a shock reserve on every site, and a growing network that feeds a healthy plant-based family.

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Feeding the Villages, full report, November 2026.
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