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THINKING SPACE ESSAY

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Beyond the farm gate: global networks and the remaking of Australia's coastal horticulture regions

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ABSTRACT

Australia's coastal horticultural regions are being reshaped through their deepening integration into global production networks (GPNs). Focusing on the north-eastern coastal strip (NECS), we explain how global market, financial, labour, intellectual property (IP) and environmental governance networks (presented as five network types) intersect with territorially specific conditions – including climate, land markets, regulatory frameworks, water systems and multifunctional rural transitions – to produce uneven regional development trajectories. Through case studies of mandarins in the North Burnett, macadamia investment in Bundaberg, labour mobility programs across various sites, proprietary berry genetics in Coffs Harbour, and reef-related environmental regulation in Far North Queensland, we show that global forces do not simply *impact upon* rural regions but *co-constitute* them. Each of the five networks generate distinctive forms of value creation, contestations and governance outcomes. The analysis demonstrates that Australia's horticultural regions are increasingly governed through polycentric systems in which globally networked actors influence territorial change. We argue that understanding contemporary rural governance requires recognising how regional futures are shaped through these multi-scalar, mutually constitutive processes.

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Introduction: the paradox of place in globally networked regions

In April 2025, the re-elected Trump administration announced sweeping tariff increases targeting countries with large trade surpluses with the United States, including Australia. Within weeks, Australian mandarin growers faced a 10% baseline tariff on exports to the usually reliable US market, with Citrus Australia CEO Nathan Hancock stating that

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This article has been corrected with minor changes. These changes do not impact the academic content of the article.

Australian citrus growers were 'caught in the crossfire of trade politics' (Collen 2025). By November 2025, certain food products became exempt from these tariffs, which was good news for citrus farmers, and even better news for cattle farmers, with beef exports to the US valued at more than $4 billion in 2024. This instability in the global trading system followed earlier Australia–China trade tensions related to COVID-19, which is still unsettled. As China is Australia's largest horticultural export destination, and as tensions between China and the US continue to have consequences for Australia, an essential reality is highlighted: Australia's horticultural regions are profoundly shaped by forces operating at transnational scales.

Stand on the edge of a macadamia orchard in Bundaberg or a berry farm in Coffs Harbour, and the landscape may appear quintessentially local – rolling fields and hills, sleepy regional town centres, farm-gate sales and the persistence of family-owned farms that have anchored community identities for generations. Yet these same spaces are fundamentally shaped by a range of transnational forces: geopolitical trade tensions reshaping market access; farm gate prices determined by changing consumer trends in Shanghai and Seoul; pension funds headquartered in Ottawa and New York acquiring thousands of hectares of farmland; seasonal workers arriving from Vanuatu and Indonesia under migrant labour schemes; and Californian berry companies branding products for sale in Sydney supermarkets.

Australian geography has long grappled with understanding rural regions in the context of intensifying globalisation (Pritchard and McManus 2000), often through frameworks that emphasise the effects of global integration, or what Woods (2007) referred to as the 'global countryside'. We argue here for an analytical framework that simultaneously accounts for global *and* territorial influences as fundamental for understanding contemporary processes of agrarian change in rural Australia. The impacts of the integration of Australia's horticultural regions into global *markets* have been profound, but horticultural production in these regions is also embedded within transnational *finance*, *labour*, *proprietary ownership* and *environmental governance* networks. Understanding processes of regional rural change requires a genuinely multiscalar approach that moves beyond a unidirectional understanding of global effects – that is, how rural regions are reconstituted by global forces – towards an integrated framework that recognises how global production networks (GPNs) and regions are mutually constitutive. This is referred to as the GPN-territory nexus.

More particularly, we are interested in understanding how contemporary rural change, and the governance of rurality, is affected by global networking in regions that are simultaneously experiencing a multifunctional rural transition (Holmes 2006). In such a transition, agricultural production increasingly coexists – and competes – with other land uses (especially amenity and conservation). Amenity-led migration is transforming coastal landscapes, with 'sea changers' and 'tree changers' driving land fragmentation and inflating property values beyond agricultural returns. Increasing vulnerability to household-level food insecurity in 'food bowl' regions points to tensions between equitable local food access and global food systems. Environmental regulations protecting the World Heritage-listed Great Barrier Reef impose stringent controls on nutrient inputs, whilst Indigenous native title challenges assumptions about who holds territorial authority. Tourism operations, residential subdivisions, conservation reserves, and working farms now occupy adjacent parcels

within the same catchments, creating what Argent, Smailes, and Griffin (2007) termed the 'amenity complex' – a contested terrain where different visions of rural futures collide. This multifunctional character is not merely background context for understanding horticultural development; it fundamentally shapes how global production networks operate in these regions, determining land availability, labour market conditions, regulatory environments and community acceptance of agricultural intensification.

Our research focuses on the north-eastern coastal strip (NECS) of Australia, and specifically the regions of Cairns, Bundaberg-Burnett, the NSW Northern Rivers and Coffs Harbour, where horticultural production (bananas, macadamias, mandarins, blueberries and sweet potatoes, among others) is booming. Humid tropical and subtropical climates with fertile river valleys establish the NECS as a national hub for fruit, nut and vegetable production (Figure 1). Over the past two decades, many parts of the NECS have undergone rapid transformation. Areas traditionally used for sugarcane or dairy are being repurposed for horticulture, often in places with simultaneously high amenity demands that generate potential for land-use conflict. The multifunctional character of these landscapes creates distinctive regional conditions and tensions that shape how global production networks can operate and evolve. Such tensions are at the heart of the GPN-territory nexus.

The GPN-territory nexus: conceptualising globally networked regional change

Global production network (GPN) theory offers an approach for understanding geographically dispersed economic activities in the contemporary global economy – and how these are coordinated and governed by lead firms that extract value through strategic control over key network nodes (Coe 2021). Yet much GPN scholarship treats territory as a somewhat static backdrop – a location where network activities occur rather than an active force shaping network evolution. Conversely, regional development scholarship often inadequately recognises the transnational dimensions of contemporary agricultural change, treating 'globalisation' as an external force acting upon regions rather than understanding how regions are constituted through their selective and contested integration into global networks.

The concept of the GPN-territory nexus addresses this gap by recognising that GPNs and territorial characteristics are mutually constitutive. In Australian coastal horticulture, this mutual constitution creates highly networked territories – places whose developmental trajectories emerge from the intersection of territorial characteristics (climate, soil, water, labour markets, socio-cultural characteristics, regulatory frameworks, land tenure systems) with network positioning (investment flows, labour mobility, market access, production network governance).

Understanding coastal horticulture through this lens reveals tensions and contradictions that simpler 'local-versus-global' or 'impacts of globalisation' frameworks obscure. As noted above, Australian geography has contributed substantially to conceptualising such transformations. Argent and Tonts (2015), for instance, explicitly integrated multifunctionality with the 'global countryside' – focusing on Australia's productivist heartland regions (west of the dividing range). Building on such

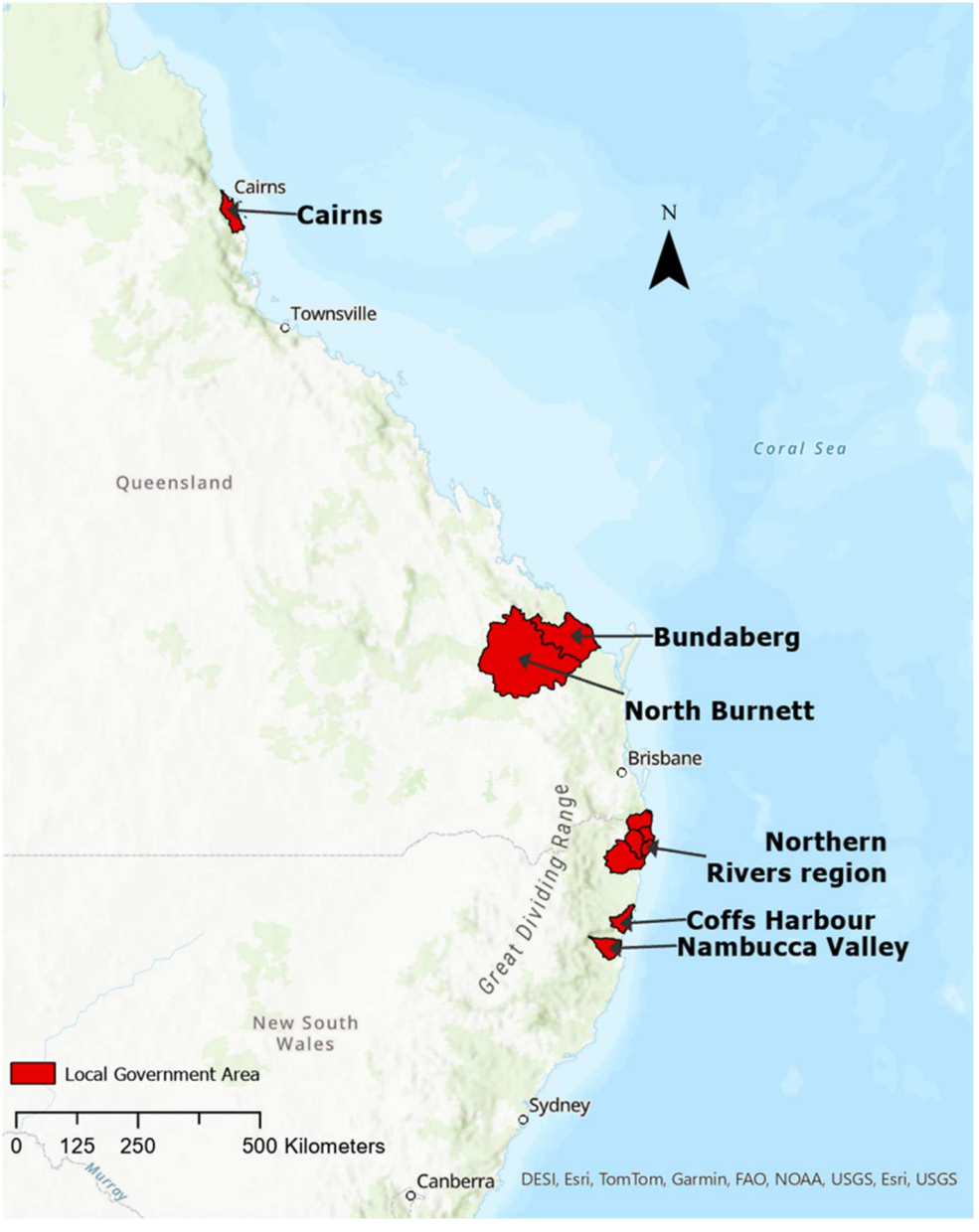

Figure 1. Study sites in the north-east coastal strip of Australia (Map credit: Rebecca Cross).

foundations, we examine five transnational dimensions through which GPNs are simultaneously shaped by and reshape Australia's coastal horticultural regions: *markets*, *finance*, *labour*, *proprietary ownership* and *environmental governance*. We demonstrate how each dimension operates through specific territorial characteristics rather than generic 'global forces'. Intersections between production networks and territorial dynamics generate varied mosaics and development trajectories across the NECS,

revealing how similar global forces produce divergent outcomes when filtered through place-specific conditions.

Market restructuring and counter-seasonal production: mandarins in the North Burnett

The North Burnett region of Queensland exemplifies how the development of new markets in Asia intersects with distinctive territorial characteristics to transform an agricultural region. In this otherwise dry landscape dominated by cattle grazing, surrounding the towns of Mundubbera and Gayndah, some 2000 hectares of citrus orchards hug the mid-reaches of the Burnett River. These farms are estimated to be responsible for 38 per cent of national mandarin production with a farm-gate value of 147 million AUD (ABS 2022). Despite being just a 2-hour drive away from the multifunctional coastal strip of Hervey Bay and the Sunshine Coast, this is a strongly productivist region, where a third of the workforce is employed in agriculture (ABS 2025).

A dramatic expansion in mandarin production has occurred since the early 2010s, driven primarily by counter-seasonal export opportunities to Asian markets along with continued exports to New Zealand and the US (Figure 2). Growers in the Burnett recall this export re-adjustment as transformative, prior to which 'everything was on the domestic market'. Geographical separateness from coastal amenity economies created a distinctive development pathway as Asian middle-class consumption

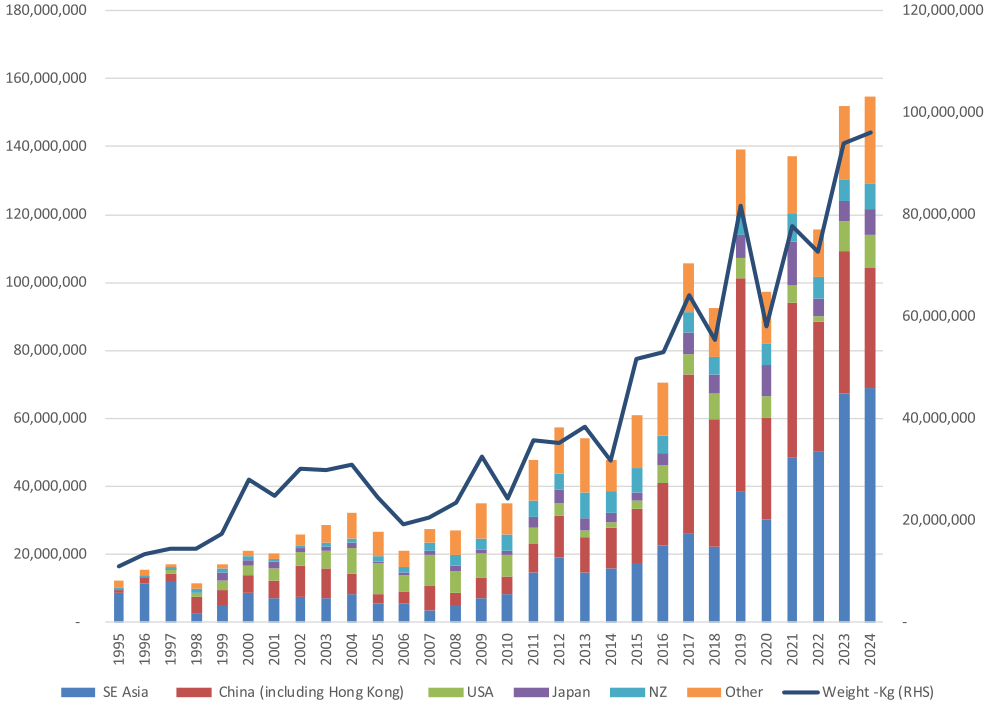

Figure 2. Growth in Australian mandarin exports (1995–2024, in USD). Data source: UNCOMTRADE.

reconfigured production, reflecting what Argent (2017) identified as the uneven integration of resource peripheries into new global commodity chains.

Indeed, Asian export markets have fundamentally reshaped both production practices and regional demographics in North Burnett. Chinese and Thai buyers favour easy-peeling mandarins with intense sweetness and smooth skin, driving varietal selection toward Imperial, Murcott and Afourer cultivars suited to Asian palatability. Visual perfection is paramount, with one grower noting that 'in China, everything needs to be perfect, like it's come out of a factory', necessitating intensive pest control and careful harvest timing. Chemical residue compliance creates additional complexity, as these vary with market destination. Cosmetic perfection requirements have also intensified labour demands, making the region dependent on the Pacific Australia Labour Mobility (PALM) scheme, with one grower estimating that more than 800 migrant workers arrive in the town during peak harvest – nearly matching Mundubbera's permanent township population of 1,100. The transformation reflects broader tensions between global market imperatives and territorial social cohesion, with seasonal labour simultaneously enabling economic viability while changing established community structures.

Despite Chinese markets driving growth, the relationship has also proved volatile. Exports to China plummeted in 2020 due to Chinese government sanctions being imposed on Australian fruit (in retaliation to Australia's endorsement of an inquiry into the origins of COVID-19). The General Administration of Customs China (GACC) stopped updating or renewing lists of Australian citrus orchards, packhouses and treatment facilities approved for export to China, effectively freezing or slowing the trade – and only resumed listings in 2023. Australia's mandarin exports to China stagnated as a result, and exporters began diversifying towards Southeast Asia and a range of Middle Eastern buyers. This market diversification – one established packer spoke of exports to 35 destinations – reflects deliberate risk management following the Chinese experience whilst maintaining Asia-centricity, but it complicates farm management.

The North Burnett's distinctive territorial characteristics – particularly its counter-seasonal harvest timing and water dependencies – fundamentally shape regional integration into Asian markets. The inland subtropical location produces a May–August harvest window, counter to China's November–February domestic peak. However, orchards depend on river pumping and water flows in the Burnett are impeded by a series of weirs, creating tensions around water allocations. Water extraction licences, river flow variability and competing agricultural demands create uncertainties shaping investment calculus, whilst Indigenous native title determinations challenge productivist-oriented water governance. The increasing complexity of water security intersects with market quality demands, as water stress can cause fruit splitting, poor colour development and undersized produce.

The result is a production system where global market integration operates through distinctive territorial realities of counter-seasonal production windows, river-dependent irrigation, migrant labour schemes and climatic conditions. Thus, the North Burnett's emergence as a mandarin production region cannot be understood through either market forces or territorial characteristics alone, but only through their intersection within globally networked horticultural systems.

Institutional investment and the financialisation of farmland

While market integration is perhaps the most obvious manifestation of the way in which NECS landscapes are globally networked, other equally important modes of global integration also reshape regional rural governance – such as the large-scale entry of institutional investors into farmland ownership. Between 2016 and 2024, institutional investors acquired more than 13,000 hectares for macadamia plantation development, about half the total nut-bearing area in 2023 (Pritchard et al. 2025). Canadian pension funds like PSP Investments and Manulife, and investment funds like Climate Asset Management (a fund exclusively dedicated to natural capital investments and backed by London-based HSBC) have collectively invested hundreds of millions of dollars into converting predominantly sugarcane producing land to macadamia cultivation in coastal Queensland.

These investments reflect broader processes of farmland financialisation – the creation of agricultural land as an asset class suitable for portfolio investment by pension funds, sovereign wealth funds and institutional investors (Fairbairn 2020). In Australia, this has involved the redefinition of finance's role in agriculture, with institutional capital increasingly seeking direct exposure to farmland returns rather than confining itself to traditional lending relationships (Larder, Sippel, and Argent 2018). This represents a fundamental departure from twentieth-century patterns in which large corporations generally avoided direct ownership of farmland, preferring to extract value through control of inputs, processing, or retail rather than production itself. Instead, the 'persistence of family farming' that agrarian political economists once identified as characteristic of agriculture is giving way to new ownership models driven by the logics of global financial markets.

Investment in Australia activates discourses about political stability and 'safe haven' assets among fund managers in North America and Europe. As tree crops, macadamia plantations can generate balance sheet capital appreciation during pre-maturity years even before producing revenue, making them suitable for the 'patient capital' preferences of institutional investors. Investors furthermore link these plantations to carbon sequestration and environmental, social, and governance (ESG) objectives (including narratives about supporting an Indigenous crop), creating additional justifications for pension funds – where ethical investors hold significant sway (Alda 2021).

Territorial characteristics shape investment patterns through land availability and pricing. Institutional investors have concentrated acquisitions in the broader Bundaberg region, where large-scale sugarcane properties offer landholdings at prices below those in more amenity-driven regions like the Northern Rivers of NSW – where land prices reflect residential rather than agricultural values. The result is starkly different regional trajectories. Twenty years ago, the Northern Rivers region was at the centre of national macadamia production, dominated by smaller holdings operated as lifestyle properties or what some locals called 'super farms' (that is, funded from superannuation savings). It has since been sidelined by larger-scale production in Bundaberg.

Critically, institutional investments are often structured through 'own-lease out' arrangements that reflect the temporal and spatial logics of financialisation (Ouma 2020). Institutional investors acquire land primarily for anticipated long-term capital appreciation rather than annual agricultural income. They then lease farm

management to specialised companies, creating regularised income streams that smooth the inherent volatility of agricultural production. The own-lease model has catalysed the emergence of farm management companies as pivotal actors within the macadamia sector (Pritchard et al. 2025). This model reflects the geographical reality that investment funds are spatially removed from farm operations, typically headquartered in global financial centres far from coastal Queensland, but are significantly influencing development trajectories in selected rural regions that align with their investment needs.

International labour schemes and the remaking of regional demographics

The global integration of coastal horticulture through market networks and capital flows has generated (and indeed has been facilitated by) corresponding transformations in labour arrangements, fundamentally reshaping regional demographics. These changes exemplify the GPN-territory nexus at work: global production network requirements for flexible, cost-competitive labour intersect with Australia's migration policy settings and the territorial characteristics of specific horticultural regions to produce distinctive local outcomes. The horticultural boom of recent decades has been enabled by policy reforms that channelled temporary overseas workers into agricultural sectors. The Working Holiday Maker (WHM) program, originally designed as a cultural exchange, has been gradually converted since the mid-2000s into a de facto temporary labour scheme for workers from Asia and the Pacific (Barry, Iaquinto, and Azeredo 2024). More recently, the Pacific Australia Labour Mobility (PALM) scheme has become integral to industry operations, representing a shift toward structured, longer-term engagement with workers from Pacific Island nations and Timor-Leste.

By 2025, PALM workers had become a regular presence in horticultural regions, fundamentally remaking regional social fabrics. These labour schemes create structured pathways through which migrant workers become incorporated into production systems organised around assumptions of migrant labour availability. In small townships like Mundubbera, seasonal workers arriving for the mandarin harvest are a very visible cultural presence, with one North Burnett councillor resident lamenting that there's a 'division between us and them … [with locals feeling] intimidated by them because of their size … there hasn't been that integration into our community'. In Bundaberg, kava stores operate alongside historic country pubs, Tongan church services take place in declining industrial areas, new Asian grocery stores flourish, and Indonesian teams compete in community futsal competitions. Social and cultural change is taking place despite a widespread feeling that these migrants are 'just here to work'.

The territorial embedding of these labour networks operates unevenly across the NECS. As described by Argent and Tonts (2015, 153): 'migrant workers' experiences of employment and social and cultural life will likely be … spatially differentiated'. Regional housing affordability crises, driven by coastal amenity values and tourist accommodation demand, make conventional rental housing unavailable to farm workers at wage levels the industry will bear. In parts of Bundaberg and North Burnett, workers are housed in purpose-built accommodation complexes managed by farm management or labour-hire companies, often in caravan parks or on-farm, creating spatially concentrated Pacific Islander communities. Workers can live in relative isolation from

established township populations, shopping via employer-arranged transport and socialising primarily within their own cultural networks. This pattern reproduces historical precedents of segregated agricultural labour in Queensland, such as South Sea Islander 'Kanaka' labour in nineteenth-century sugar plantations (Petrou and Connell 2023) – and risks creating vulnerable enclave communities (Cockayne et al. 2024).

The territorial context further differentiates outcomes through farm scale and regional characteristics. In contrast to the Bundaberg-Burnett region, smaller-scale operators in the Northern Rivers of NSW often lack capital for appropriate accommodation infrastructure – due to the high demand for tourism-related accommodation, land fragmentation and residential prices limiting farm consolidation. As a result, such regions increasingly struggle to access PALM workers, creating competitive disadvantages for horticulture relative to larger operations, further resulting in divergent regional trajectories. This GPN-territory nexus reveals fundamental tensions in the contemporary restructuring of Australian agriculture. The persistent regional unemployment in these same areas, particularly among young people and Indigenous Australians, raises troubling questions about structural mismatches that international labour schemes simultaneously address and obscure.

Proprietary genetics, branding and value capture

While only 3 per cent of Australia's berries find their way to international markets (Hort Innovation 2024), this significantly under-represents the global connections involved. The emergence of proprietary rights (in the form of plant genetics and globally recognised branding) represents a fourth dimension through which GPNs intersect with Australian horticultural regions. There has been a dramatic increase in the domestic consumption of berries, especially blueberries, over the last 15 years. This is linked to a very effective global marketing campaign led by Driscoll's, a California-based berry company, which has successfully created an identity for blueberries as a 'superfood' due to their apparent health benefits. Driscoll's entered the Australian blueberry production network through a 2010 strategic partnership with the Costa Group, a leading grower, packer and marketer of fresh fruit and vegetables in Australia and beyond. After a period of being listed on the Australian Stock Exchange, Costa has been privately owned since 2024 by Driscoll's, an American private equity firm, and a Canadian pension fund, reiterating the influence of international financial actors highlighted earlier. Consumers purchasing Driscoll's-branded berries in Australian supermarkets are most likely buying fruit grown in and around the Coffs Harbour region in NSW, a production epicentre, but within a network governed by a Californian corporation.

The Driscoll's-Costa partnership has become a dominant force in Australian berry production through licensing arrangements with growers who produce under the Driscoll's brand using proprietary varietals. From its US base, Driscoll's develops the varieties of blackberries, raspberries and strawberries sold in Australia, while the blueberries are developed by Costa at its 300 ha farm at Corindi, north of Coffs Harbour, which is said to be the largest bank of blueberry genetic material in Australia and produces one or two new commercial quality varieties each year. In total, Costa has more than 780 ha of berry farms across New South Wales, Queensland, Tasmania and Western Australia, the produce of which is sold under the Driscoll's banner.

Costa's international arm, in turn, owns farms in Morocco, China and Laos where it grows its own varieties, as well as licensing its varieties internationally to third party growers and through joint ventures. These relationships allow Driscoll's and Costa to exert control that extends well beyond their directly owned farms through ownership of plant genetics, specifying production practices, coordinating supply to retailers, and capturing value through brand premiums and licensing fees. The link between genetics and marketing is particularly important, with Driscoll's-Costa able to extract value both through selling the initial seedlings to farmers and by charging a flat fee royalty on the crop sold under the Driscoll's label.

Driscoll's, however, is not the only lead firm active in Australia. Mountain Blue is a family-run company based in the Northern Rivers region of NSW with a world-renowned R&D program producing sought-after varieties and performing a similar role in competition with the Driscoll's-Costa alliance. As with Costa, the breeding programme is central to its success, led by industry icon Ridley Bell from their nursery in Lindendale (in the Northern Rivers). Eureka, perhaps their most well-known variety, has been sold as a premium brand exclusively through Coles supermarkets for the past decade. Mountain Blue's varieties are licensed to 34 countries, through international partners such as Hortifrut (Chile) and Family Tree Farms (USA). Mountain Blue also has its own raspberry varieties and is trialling varieties of strawberry and blackberry. A large majority of Australia's approximately 300 often small and family-owned berry farms are reliant on either Mountain Blue or Driscoll's-Costa for their varieties and marketing. In Coffs Harbour, the Oz Group grower cooperative, which has over 160 members, many of whom are former banana growers and part of a large local Australian-Punjabi grower community, switched to Mountain Blue when a 10-year exclusive contract with Driscoll's ended in 2025, shifting the power balance in the Australian industry towards the former. Together, the breeding operations of Driscoll's-Costa, Mountain Blue and OZblu (based in Western Australia, and with berries grown in 11 other countries) led the International Blueberry Organization to comment in its 2024 Report that 'Australia is home to three of the leading low chill blueberry breeding companies that have helped fuel the exponential rise in low- and no-chill genetics around the world' (IBO 2024). In this way – and with relatively modest production and export levels by global standards – Australia, and Coffs Harbour in particular, have emerged as key nodes of innovation and value extraction in blueberry global production networks.

This proprietary system interacts with territorial characteristics in complex ways. The subtropical Coffs Harbour region, despite being famously home to the Big Banana, is responsible for nearly 50% of the national blueberry production, which contributed around $180 million to the regional economy in 2021. Australia excels at developing new genetic varieties that require fewer winter chilling hours to set fruit, making them viable in subtropical climates that would have been prohibitively warm for traditional cultivars. As a result, blueberries can now be grown year-round in Australia, from tropical Far North Queensland to temperate Tasmania. This genetic innovation has effectively reconfigured the geographical possibilities for blueberry cultivation in Australia and globally, demonstrating how IP and plant breeding intersect with climatic constraints to reshape regional production.

However, the licensing arrangements create dependencies that transcend purely territorial relationships. Growers cannot save and propagate plants, must meet specified

production standards, face regular audits of farming practices, and risk contract termination if performance disappoints. Production decisions about irrigation timing, pest management, harvest schedules, and post-harvest handling also become heavily parameterised by brand holder requirements. This represents a shift from land-based to knowledge-based control within horticultural GPNs, where value capture occurs through IP rents rather than land ownership or processing margins. The territorial specificity of growing conditions remains crucial (soil types, microclimates, water availability all shape production outcomes) but these territorial factors are now mediated through proprietary genetics and brand governance systems that transcend any single place.

For horticultural regions, these dynamics generate tensions around the distribution of value from agricultural innovation. Breeding programmes require long time horizons and substantial R&D investment and were traditionally supported by public research institutions and rural R&D corporation levies (through Hort Innovation) collected from growers. In the case of berries, private breeding programmes are now ascendant, meaning that, when successful varieties generate returns globally, questions arise about whether benefits flow back to the rural regions and farming communities that contributed to their development, or accrue primarily to corporate shareholders and IP licensors. Increasingly, the territorial embeddedness of agricultural research infrastructure (grower trial sites, university research stations, public sector breeding programmes) can contrast sharply with the mobile, global character of IP ownership and licensing returns.

Environmental regulation and contested sustainabilities

A fifth dimension of network integration operates through environmental governance, particularly (in our study) concerning Great Barrier Reef (GBR) water quality. Environmental governance increasingly operates through polycentric systems where multiple authorities exercise partial control across different scales (Morrison et al. 2019). For horticulture, State and Commonwealth governments set regulatory frameworks for water extraction, land clearing and chemical use, while industry peak bodies develop voluntary codes of practice and sustainability certification schemes. Institutional investors impose ESG criteria driven by beneficiary expectations and reputational risk management. Retailers demand supplier compliance with food safety and sustainability standards, and coastal communities mobilise through planning processes and community movements to resist agricultural intensification in high-amenity landscapes.

The NECS encompasses catchments flowing into the GBR, meaning horticultural development is subject to increasingly stringent regulation of sediment load and nutrient and pesticide runoff, particularly under the Queensland Government's Environmentally Relevant Activity (ERA) standards – commonly known as the 'reef regulations'. These regulations reflect broader concerns that land-based runoff and soil erosion associated with intensive agricultural practices constitute major threats to the health of the GBR. These water quality requirements create distinctive territorial constraints across coastal Queensland that directly shape the profitability of horticultural investment decisions. Indeed, the reef regulations are applied highly selectively: macadamias and sweet potatoes are currently exempt, while bananas – alongside sugarcane and grazing – have been specifically targeted. In the Cairns region, where 94% of Australia's bananas are produced, the reef regulations set legally enforceable minimum practice standards for

fertiliser and sediment management, erosion control, and chemical use on banana farms, making banana the only horticultural commodity in Australia subject to legally mandated restriction of fertiliser application.

Environmental governance of Australian horticulture is, moreover, increasingly globalised, as North American investors require compliance to American standards and European retailers demand GLOBALG.A.P certification. Even though bananas are produced almost exclusively for the domestic market with limited foreign investment at the farm level, they too are subjected to global environmental pressures. The reef regulations have been designed, negotiated and implemented in the context of maintaining the environmental integrity of the GBR as a UNESCO World Heritage Area, with UNESCO repeatedly threatening to list the Reef as 'world heritage in danger'. For banana growers around Cairns, production decisions about fertiliser timing, application methods and soil management are thus increasingly determined by the imperative to demonstrate reef protection to an international oversight body.

These governance layers interact with territorial characteristics and political channels to generate regionally specific outcomes. Around Bundaberg, for instance, institutional investors actively promote their macadamia holdings through sustainability narratives emphasising carbon sequestration, biodiversity enhancement and reef protection. These narratives serve multiple functions: satisfying the ESG requirements of pension fund beneficiaries in Canada and Europe; supporting planning applications for agricultural development in environmentally sensitive areas; and differentiating Australian produce in export markets increasingly attentive to sustainability credentials. Moreover, these highly varied modes of environmental governance intersect unevenly with different territories, regulating on-farm environmental practices that vary across commodities due to differences in how they are globally networked.

'Sustainability', of course, remains profoundly contested terrain, and what constitutes sustainable agriculture differs markedly across stakeholder perspectives. Institutional investors emphasise carbon metrics, environmental reporting frameworks and alignment with the United Nations' Sustainable Development Goals. Environmental NGOs prioritise biodiversity conservation, chemical reduction and landscape-scale ecological function. Indigenous communities assert rights to care for country and to maintain unregulated river systems and point to how Indigenous land management practices are often incompatible with intensive horticulture. Local residents in multifunctional landscapes resist agricultural expansion that threatens amenity values and exposes them to spray drift, dust and noise nuisances. Farmers, meanwhile, assert a 'right to farm' (a notion enshrined in legislation in New South Wales) and insist that their prior occupation in the landscape legitimises such claims. Multistakeholder coalitions (industry, community groups, farmers) also increasingly seek to participate in food system governance by mobilisation around a shared discourse of 'resilience' to climate-change induced disasters such as flooding (which frequently affects the NECS, most recently Bundaberg in March 2026).

The territorial embedding of environmental governance perhaps becomes most visible in planning conflicts. Proposals for large-scale orchard development in coastal areas generate opposition from established residents concerned about visual amenity, chemical spray drift, noise and heavy vehicle traffic. In the Northern Rivers, planning authorities have increasingly restricted agricultural intensification in areas transitioning toward

residential and amenity functions, effectively foreclosing certain types of horticultural investment regardless of their economic or environmental credentials. In the Bundaberg region, with more nascent amenity values, the agricultural sector retains a stronger social licence to operate – although such tensions are arising there also. While broadly tolerated in the Coffs Harbour region, blueberry production has attracted strong community push-back due to its environmental footprint, as it has moved down the coast into the Nambucca Valley and around Kempsey. These conflicts reflect the multifunctional character of NECS landscapes. Institutional investors and large-scale operators encounter territorial realities, such as entrenched resident opposition, complex planning processes and competing land-use values, which cannot be overcome simply through capital deployment or ESG reporting. Environmental governance thus operates simultaneously as a global network logic (ESG criteria, carbon accounting, sustainability certification, pressures through international treaties) and a territorial constraint (local planning controls, community resistance, place-specific ecological sensitivities).

Conclusion: governance of Australia's rural regions through networked territories

The five dimensions examined above reveal how Australia's coastal horticultural regions are being remade through embedding within multiple, overlapping global production networks. Critically, these are not generic 'impacts' of globalisation operating uniformly across space. Rather, each network type (markets, finance, labour, intellectual property, environmental governance) intersects with specific territorial characteristics to generate regionally differentiated outcomes. Bundaberg's trajectory diverges from the Northern Rivers, and both differ from the North Burnett, Coffs Harbour and Cairns, precisely because institutional investment logics, labour market conditions, counter-seasonal production possibilities, and environmental regulations encounter different land markets, climatic regimes, water resources, and social contexts. The 'global countryside' manifests differently even within the relatively compact geography of the NECS. These networked transformations raise critical questions about governance – who decides the future trajectories of these regions, in whose interests, and through what mechanisms?

This fragmented landscape exemplifies polycentric rural governance, characterised by 'multiple governing authorities at differing scales rather than a monocentric unit', with each unit exercising 'considerable independence to make norms and rules within a specific domain' (Ostrom 2010, 552). Analysis of power within polycentric systems reveals how different actors (firms, state agencies, civil society organisations, communities) exercise influence through multiple governance mechanisms simultaneously – even if their capacity to influence others varies. Recent empirical work in Australia further shows that such arrangements are shaped by power asymmetries and contested knowledge claims, which affect how problems are framed and regulated across scales with implications for environmental integrity (Watkins et al. 2025). Governance of Australia's rural regions is clearly becoming more polycentric, with multiple overlapping authorities exercising partial control over different aspects of production and exchange. While such systems provide greater flexibility and are potentially more resilient than traditional hierarchical systems, they do raise questions about who is responsible for ensuring that regional development serves community and environmental wellbeing.

The shifts documented here have implications beyond Australian coastal horticulture. They suggest that understanding contemporary regional development and governance requires grappling seriously with how places are constituted through their positioning within global networks, whilst recognising that network operations are always mediated through territorial specificities. The concept of the GPN-territory nexus directs analytical attention to these governance questions by insisting that we cannot understand regional development without examining how places are positioned within, and shaped by, global production networks, whilst simultaneously recognising that networks operate through and are constrained by territorial characteristics. This framing pushes beyond treating globalisation as an external force 'impacting' regions, instead recognising regions as constituted through the nature and extent of their integration into wider networks.

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