Agroecology and the metropolitan biopolitics of food in Cape Town and Johannesburg

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Abstract
As urban food systems erode the ecological foundations of society, researchers advocate multi-level and adaptive governance to promote transitions toward sustainability. Agroecological discourse proposes transition to resilient, localized, and democratic city–region food systems, but neoliberal interpretations subvert radical aspirations. In the South African metropoles of Johannesburg and Cape Town, the governance terrain entails a concentrated industrial food system providing large, impoverished populations with unhealthy food derived from monocultures and transported along global value chains. Governing these urban food systems toward agroecological transition requires engagement with state governance mechanisms and rationalities. Considering state capabilities to promote agroecological transitions, the paper shows that fragmented institutional structures, policy patchworks, intersecting logics of control, and divergent ideologies constitute an ambiguous governance terrain posing major hurdles to transition. For metropolitan states to muster the will and assemble means for deep transformation of food systems and dominant state rationalities, a compelling alternative narrative must emerge. This requires persistent strategic engagement between officials and agroecological movements. To cultivate fertile political ground for seeds of deep, just transitions to take root, agroecology movements must grasp the nettle of metropolitan state capabilities.

1 | INTRODUCTION

Cities, as nodes of resource extraction, fossil fuel combustion, capital accumulation, and refuges for poor, deagrarianized populations demanding high volumes of affordable food are both cause and consequence of the metabolic rift approaching its zenith in neoliberal capitalism. Neoliberal urbanisms and the industrial food systems that sustain them drive multiple environmental, societal, and health crises, requiring urgent transitions toward sustainability (Sonnino et al., 2014; Willett et al., 2019; Tornaghi & DeHaene, 2020). While agroecology and food sovereignty discourses champion particularly radical transitions (Bernstein, 2014; De Keyser et al., 2018; Satar & Cherry, 2019), urban food security researchers interpret these problems as food systems failures requiring systemic governance strategies (Smit, 2016; Haysom, 2015; Moragues-Faus & Morgan, 2015; Parsons & Hawkes, 2018; Pereira & Drimie, 2016; Pereira & Ruysenaar, 2012; Sonnino, 2009; Wiskerke, 2016). Impulses toward systemic food governance have emerged in the South African cities of Johannesburg...
Large, dense urban populations and clustered food processing, distribution, retail, and waste disposal activities make cities key sites for agroecological transition, crystallized in the notion of city-region food systems. Governance implications for African metropoles are however unclear (Battersby & Watson, 2019).

This paper frames governance for agroecological transitions as an expansion of reflexive biopolitics mitigating the harmful consequences of modernity. I explore governance capabilities for agroecological transition as an assemblage of mechanisms to promote popular well-being (Foucault, 2007; Collier, 2009; Collier & Lakoff, 2015) as interdependent with ecosystem integrity. Biopolitical mechanisms to influence population conduct include institutions, policies, regulations, and programs. These recursively shape and are informed by rationalities of state, so-called governmentalities (Lemke, 2007), which also inform and legitimize how states unevenly promote well-being, thereby entrenching inequalities (Li, 2007).

This framing means three things for agroecological food systems governance. Firstly, it is essential to consider the populations and territories governed. Secondly, it is important to describe the configuration of instruments of power by which the metropolitan state governs food systems, and the extent to which these instruments can promote agroecological transitions. Thirdly, repurposing and establishing instruments depends on how agroecological principles articulate with existing rationalities to galvanize the will to transform urban food systems (Akinwumi, 2013; Li, 2007). This boils down to one overarching research question: To what extent can South African metropolitan states leverage technical means and strategic will to promote agroecological transitions?

## 2 MATERIALS AND METHODS

To inform this analysis, I review literature concerning urban food security, agroecology, urban food governance, South African state formation, and relevant policy documents (Table 1). Adopting an action–research approach, I draw on 15 interviews with officials in the CoJ and CoCT and the provinces of Gauteng and the Western Cape between 2017 and 2020, on 16 multiple-stakeholder dialogues convened by the Western Cape and Gauteng Communities of Practice on food governance and on participant observation in food governance workgroups. Themes explored in the interviews include policy innovation, state rationalities, statecraft, understandings of food security and food systems, and perceived feasibility of regulation promoting transitions. Ethics approval was granted by the University of the Western Cape Human Sciences Research Ethics Committee. I begin by exploring agroecology and metropolitan food systems conceptually, then sketch the metropolitan populations and food systems. Subsequently, I review state means and strategic intentionality by describing institutions, policies, and governmentalities. In concluding, I consider the implications for agroecological transitions.

## 3 RESULTS AND DISCUSSION

### 3.1 Imagining agroecological urban food systems

Food systems encompass the processes, agents, and relationships involved in food production, processing, distribution, sale, and disposal (Ericksen et al., 2009; Ingram, 2011). Systemic approaches propose multiple-level, adaptive governance aligning policies and institutional mandates to leverage feedbacks for multiple benefits (Candel, 2014; Smit, 2016; Pereira & Drimie, 2016; Pereira & Ruyse-naar, 2012; Parsons & Hawkes, 2018; Sonnino, 2009; Moragues-Faus & Morgan, 2015; Wiskerke, 2016). Noting national-scale bias, urban food security researchers argue for urban-scale food systems analysis and governance (Battersby, 2016; Battersby & Watson, 2019; Crush & Frayne, 2011; Haysom, 2015; Smit, 2016). To be sustainable, urban food systems must protect ecosystems while providing universal access to sufficient healthy food through inclusive economies that enable agency, create jobs, reduce inequalities, and ensure equitable value distribution (Bricas, 2019).

Systems perspectives present common ground with agroecological thinking, originally conceived as farming practices mimicking nature by cycling nutrients, maintaining biodiversity, building soil, and enhancing beneficial synergies. However, agroecology is not only a farming practice but also a transdisciplinary science grounded in valorization and refinement of local and traditional knowledge as well as a political movement (Gliessman, 2018). Broad consensus converges on 13 core principles including recycling, input reduction, soil health, animal health, biodiversity, synergy, economic

### Core Ideas

- Metropoles in the Global South are sites of struggle for agroecological transition.
- South African cities entail large, impoverished, food insecure populations.
- Hybrid metropolitan food systems are dominated by a corporate–industrial core.
- Deep, just transitions depend on state will and means to govern food systems.
- Agroecology must engage the incoherent metropolitan will and means for transition.
| Food system domain | Policy| Lead institution | Agroecological transition intervention opportunities |
|--------------------|-------|-----------------|---------------------------------------------------|
| All                | Integrated Food Security Strategy; National Food and Nutrition Security Policy; National School Nutrition Programme (2004) | National Department of Agriculture, Forestry and Fisheries (DAFF) | Establish a formal urban food security mandate; promote agroecological practices; develop standards and guidelines for preferential procurement |
| Production         | Strategy for the Prevention and Control of Obesity 2016 | National Department of Health | Promote adoption of whole, plant-based diets and discourage consumption of ultra-processed, obesogenic food and meat. |
| Production         | Subdivision of Agricultural Land Act 70 of 1970; AgriBEE | DAFF | Enable subdivision and sale of peri-urban agricultural land for smallholder farming; support development of African small-scale farming |
| Production         | National Norms and Standards for Environmental Health (NNSEH); Foodstuffs, Cosmetics and Disinfectants Act 1972; | National Department of Health | Reclassify dangerous agrochemicals and ultraprocessed foods as health hazards and mandate progressive elimination |
| All                | Gauteng 20-Year Food Security Plan (2014) | Gauteng Department of Agriculture and Rural Development | Promote small-scale agroecological farming and primary processing; support solidarity economy through co-operative development |
| All                | Gauteng Anti-Poverty Strategy (2019) | Gauteng Department of Social Development | Promote agroecological urban farming; Early Childhood Development feeding programmes |
| All                | Gauteng Economic Development Strategy; Gauteng Township Economy Revitalisation Strategy (2014) | – | Promote linkages between agroecological production, small-scale processing and informal food retail |
| All                | Western Cape Draft Strategic Framework for Food Security (2017) | WC Department of the Premier (WCDotP) | Promote a systemic approach to agroecological transition and inclusive food economies |
| All                | The Western Cape Draft Strategic Framework (2019) | WC Department of the Premier (WCDotP) | Position agroecological transitions as part of the transversal food security issue |
| All                | OneCape 2040 Strategy; Western Cape Strategic Framework (2020); | Transversal / All | Promote broadscale agroecological food systems transition |
| All                | Integrated development plans | All | Mandate establishment of participatory and transversal food governance institutions; revision policies and by-laws; develop food system transition strategies |
| All                | Service delivery and budget implementation plans | All | Set effective targets, budgets and resources for transition interventions. |

(Continues)
| Food system domain | Policy | Lead institution | Agroecological transition intervention opportunities |
|--------------------|--------|----------------|---------------------------------------------------|
| –                  | CoJ Food Resilience Policy; CoCT Food Systems Program 2020; CoCT Food Gardens Policy in Support of Poverty Alleviation and Reduction 2008 | CoJ & CoCT Social Development | Promote agroecological food systems transitions |
| –                  | CoCT Resilience Strategy (2019) | All; Resilience Unit, Corporate Services | Promote agroecology in food systems programme |
| –                  | Cape Town Social Development Strategy (2012); CoJ Expanded Social Package | Human Development; CoCT Disaster Risk Management; CoCT Social Development and Early Childhood Development | Monitor food security status; Promote access to food relief and livelihood development opportunities in small-scale food production, processing and retail |
| All                | CoCT Climate Change Policy 2017; CoCT Draft Climate Change Strategy 2020; CoJ Climate Change Adaptation Plan | CoJ & CoCT Environmental Management | Shorten supply chains; promote agroecological production; protect biodiversity and indigenous crops; reduce waste to landfill; enhance nutrient cycling to local production; promote carbon sequestration, ecosystem services and climate change mitigation via agroecology |
| All; food environments; Production | CoJ and CoCT Municipal Spatial Development Frameworks (MSDF); CoCT Urban Design Policy 2013; Cape Town Zoning Scheme; CoCT Development Planning By-Law; CoJ Municipal Planning By-law, 2016 | CoCT Development Management; Municipal planning tribunals | Designate zones for food production, processing and distribution infrastructure (e.g., local markets); Develop zoning for urban agriculture; include food in definitions of safety and in informal economic activity; make spatial planning provisions for food production and public space retail; ensure inclusion of food trader amenities in shopping centre development plans; cluster food production, processing and distribution and retail infrastructure |
| –                  | Provincial Land Use Planning Ordinance (LUPO); Western Cape Land Use Planning Act 2014; Gauteng Planning and Development Bill 2012 | WC Department of Environmental Affairs and Development Planning; Gauteng Planning Commission, Office of the Premier; GP Human Settlements | Protect agricultural land from corporate retail or luxury housing development; promote agroecological production |
| –                  | CoCT Immovable Property By-law 2015; CoCT Immovable Property Asset Management Policy 2015 | CoCT Property Management; Joburg Property Company (JPC) | Release unutilized, undeveloped land for usufruct cultivation or local food markets; generate revenue; devolve administration and space allocation to local food providers’ organisations |

(Continues)
| Food system domain                  | Policya                                                                 | Lead institutiona                                                                 | Agroecological transition intervention opportunities                                                                                                                                                                                                                           |
|------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contracting and preferential       | CoCT Supply chain management policy 2008, Amended 2011, 2013, 2017; CoJ Supply Chain Management Policy 2007;                | CoCT & CoJ Supply Chain Management Departments                                   | Develop protected markets for local produce; shorten supply chains; discourage procurement of ultraprocessed and promote procurement of fresh, whole food; promote solidarity economy supply to state institutions                                                                                                                                 |
| procurement                        |                                                                         |                                                                                  |                                                                                                                                                                                                                                                                           |
| Production                         | CoCT Animals by-law; CoCT Rural Management Framework 2002; CoJ Metropolitan Open Spaces Policy 2004; CoJ Integrated Environmental Management Policy 2005 | CoCT Environmental Management; CoJ Environmental Planning and Management; Joburg City Parks; CoCT Recreation and Parks Department | Support local small livestock production enterprises; promote use of open spaces for agroecological production via allotments in parks and railway reserves; promote biodiversity through seed exchange networks; enable collective management of land allocation                                                                                                                                       |
| Production, processing, retail     | CoJ GDS; CoJ Economic Development Policy and Strategy Framework; CoJ Youth Cooperatives Programme; CoCT Economic Growth Strategy; CoCT Investment Incentive Policy; CoCT Transit-Oriented Development Strategic Framework Policy 2016 | CoJ Economic Development; CoCT Enterprise and Investment; CoCT & CoJ Finance Departments | Promote diverse, small food enterprises; develop solidarity economy; shorten value chains; discourage large- and promote small-scale processing and retail; promote local food markets; Provide investment incentives for small-scale food processing, distribution and retail through grants, subsidies, rebates, reduced service costs; ring-fence revenues raised from food-related rates and fines to subsidize agroecological transition |
| Processing; Retail and Service     | CoJ Public Health Policy; CoCT Environmental Health By-law 2003;                                                         | CoJ Environmental Health; CoCT Health                                               | Reduce red tape for small food processing and retail enterprises; discourage production and sale of ultraprocessed food, especially near public facilities; discourage use of harmful agrochemicals or food additives in food production and processing                                                                                                                                 |
| Retail                             | CoJ Market by-law                                                       | CoJ Fresh Produce Market; Cape Town Market                                         | Establish local farmers’ markets; incentivize local production through assistance, rebates and service discounts                                                                                                                                                                                                                     |
| Retail Advertising                 | CoJ & CoCT Outdoor Advertising and Signage by-law                                                                       | CoCT & CoJ Development Planning and Urban Management                              | Discourage advertising of ultraprocessed and meat-based food and sugary beverages through levies or fines; reduce fees for advertising of whole, locally-produced and fresh food; promote plant-based diets; generate ringfenced revenue for transition                                                                                                                                   |
### Table 1 (Continued)

| Food system domain | Policy | Load institution | Agroecological Transition intervention opportunities |
|--------------------|--------|------------------|-------------------------------------------------|
| Informal Retail    | CoCT Law enforcement; CoJ Metro Police | CoCT, City of Cape Town; CoJ, City of Johannesburg | Reduce red tape for fresh produce street traders; enable participatory design and co-governance of trading spaces; improve waste management; discourage advertising and sale of ultraprocessed food and corporate food enterprises; generate ringfenced revenue |
| Waste              | CoCT Environmental Management; CoJ Environmental Planning and Management | CoCT, City of Cape Town; CoJ, City of Johannesburg | Reduce food and packaging waste; support urban waste pickers; increase landfill gate fees to generate ringfenced revenue for transition; promote distributed organic waste treatment (e.g. composting, biodigester, mulch); enable nutrient cycling to small producers through discounts or subsidies |

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Gliessman (2016) posits five stages of agroecological transitions, beginning with improved resource efficiencies, and progressing via substitution of conventional with agroecological processes, broadscale agroecosystems redesign, reconnecting producers and consumers, ultimately ushering in a new global food system that is localized, democratic, and just; however, the role of cities is not clear. Divergent ideological positions, ranging from neoliberal (market-led) through reformist (aid-oriented) and progressive (empowerment-seeking) to radical (enabling redistribution) inform how this transition is imagined (Holt-Gimenez & Shattuck, 2011).

Radical agroecology is most sharply articulated by the food sovereignty movement. Challenging the emphasis on industrial production and trade that dominates food security discourse, it interprets hunger and malnutrition as a consequence of food inequality. It holds the corporate food regime responsible for driving dietary transitions, eroding peasant livelihoods and disrupting ecosystems and therefore asserts people’s right to govern food systems (De Keyser et al., 2018; Bernstein, 2014; McMichael, 2005; Satgar & Cherry, 2019). However, food sovereignty narratives remain unclear on how a resurgent peasantry (portrayed as capitalism’s other) could reliably produce and supply adequate surplus to sustain large, nonfarming urban populations without global trade (Bernstein, 2014; Tornaghi & DeHaene, 2020).

Food sovereignty, as articulated by the South African Food Sovereignty Campaign, proposes a deep, just transition developing solutions ‘from below.’ It aims to reduce food inequality by cultivating prefigurative pathways—“radical practices that build components of a desired future in the present” (Tornaghi & DeHaene, 2020)—in the interstices of capitalism, growing a distributed solidarity economy that decommodifies and recommons food systems. Though grounded in local agential practices including cooperatives, collectively owned seed banks, peoples’ markets, and peer learning, the campaign aims to develop broad networks and alliances (Satgar & Cherry, 2019; Bennie & Satgoor, 2018; Williams & Satgar, 2019).

These transformative ambitions contrast with mainstream interpretations of agroecology reflected by the recent draft of The Food and Agriculture Organization Committee on World Food Security Policy Recommendation on Agroecology (Committee on World Food Security, 2020) and the High Level Panel of Experts (HLPE) on Food Security and Nutrition (2019). As agroecology gains greater recognition, it is increasingly subject to contestation and co-optation, stifling aspirations for deep, just transition as agroecological
techniques and discourse are appropriated to shore up and legitimizing the corporate food regime under the banner of sustainable intensification and climate-smart agriculture (Giraldo & Rosset, 2017; Alonso-Fradejas et al., 2020). Agroecological urbanisms therefore imply far more than a greenwashing of the corporate food regime, nor does a reappraisal of the urban poor seem feasible. Instead, agroecological transitions require decoupling food systems from the extractive carbon economy, re-embedding them in equitable social relations, and promoting dietary shifts demanding reliable supply of minimally processed, plant-based foods to large urban populations (Willet et al., 2019).

Key aspects of agroecological urbanisms converge in the city–region food systems (CRFS) imaginary, aligning urban food systems thinking with agroecology, while embedding it within networks of regional resource flows (Wiskerke, 2016). City–region food systems discourse emphasizes localization, demanding increased reliance on local food production, nutrient cycling, enhanced biodiversity, improved urban–rural linkages, and reduced dependence on remotely produced food. City–region food systems discourse is infused with resilience narratives (Vermeulen et al., 2012; Bene et al., 2016) in which urban agriculture plays a central role, purportedly lowering and stabilizing food prices, thus increasing the resilience of livelihoods and food supply, while reduced processing and packaging mitigate environmental impacts and enhance access to healthy food (Wiskerke, 2010). However, the CRFS discourse lends itself to technical interpretations of agroecology, neglecting deeper sociopolitical aspirations to dismantle the underlying structural and epistemic logic of capitalist urbanisms including speculative land markets, commodification of food, and the logics of substitution. The CRFS discourse moreover neglects cross-scale linkages, the role of city regions in driving regional transitions and local governance capabilities (Battersby & Watson, 2019). Food sovereignty movements hold an ambiguous stance toward the state, on the one hand critiquing it as a servant of corporate food regime expansion and on the other demanding that it protect small farmers (Bernstein, 2014). Though prefigurative practices are thought key to building practical alternatives and utopian visions ‘from below’ (Tornaghi & Dehaene, 2020; Bennie & Satgoor, 2018) the state plays a key role in structuring the fields of power that frame transitions (Williams & Satgar, 2019).

### 3.2 Charting the South African metropolitan food governance terrain

Before shedding light on metropolitan state capabilities to promote agroecological transitions, it is necessary to outline the governance terrain that the populations and food systems of these metropoles present.

#### 3.2.1 Territory and population

As hubs of commerce and industry, the two metros are nodes of resource extraction, consumption, waste generation and capital accumulation, comprising large, rapidly growing populations inhabiting spatially fragmented settlements with high levels of informality. Following influx from rural areas in the immediate post-Apartheid years, both metros have experienced significant endogenous growth: CoCT grew from ~2.9 million in 2001 to ~3.7 million in 2011; CoJ grew from ~3.2 to ~4.4 million, an increase of 29 and 37%, respectively (Statistics South Africa, 2017; Davidson, 2016). Demand for state services, particularly housing, power, water and sanitation, waste, and transport infrastructure, is consequently growing, but spatial planning legacies and governance pose persistent service delivery challenges and limited resources such as space, water, and jobs are contested (Davidson, 2016; Sinclair-Smith & Turok, 2012; Turok & Borel-Saladin, 2014). Jobless deagrarianization and neoliberal economic policy compounded by persistent spatial inequality have contributed to high levels of poverty in both metros. In 2011, 21% of the CoJ population lived below the poverty line, 19% in CoCT. Gini coefficients for both cities are high (CoJ 0.63; CoCT 0.62), reflecting deep inequalities structured by intersectionalities of race, class, ethnicity, and gender with extremely wealthy, largely white elite enclaves spatially segregated from large dormitory settlements housing the poor African majority. Millions of people in CoCT and CoJ (57 and 58%, respectively) experience food insecurity (Battersby et al., 2014; Kroll et al., 2017). Based on an allocation of ~35% of incomes for a basic food basket, approximately half of Cape Town and Johannesburg households earn incomes inadequate to access healthy food. As price elasticities in southern Africa are higher for beverages, meat, and vegetables than for staples, consumers reduce these foods first to cope with poverty (Bureau for Food and Agricultural Policy, 2019; Battersby et al., 2015; Colen et al., 2018). Constrained by poverty, rising food prices and adverse foodscapes, urbanites therefore subsist on highly processed, unhealthy foods (mainly bread, maize meal, oil, sugar, and processed meat) and consume little fresh food. The slow violence this systemic food inequality inflicts on the most vulnerable is revealed by swelling obesity rates (34% among men and 66% among women in urban Gauteng Province, 44 and 73% respectively in the Western Cape) and childhood stunting affecting about one in four children (Muzigaba et al., 2016; Statistics South Africa, 2017).

#### 3.2.2 Food systems and environments

Poor consumers get food from hybrid retail environments composed of roadside traders, small shops, and malls
clustering fast food and supermarket retail (Even-Zahav & Kelly, 2016; Skinner & Haysom, 2016). Many consumers source fruit and vegetables from roadside traders and supermarkets, staples mainly from informal shops and expanding supermarket networks (Battersby et al., 2014; Kroll et al., 2019; Peyton et al., 2015).

Retailers are supplied by concentrated upstream value chains regulated by complex contractual arrangements and standards and financed by global capital. This food industry derives most inputs from industrial monocultures. Mechanization, automation, and smart supply-chain management generate dwindling, insecure, and poorly paid jobs. Much food produced in the hinterland is exported, as are food products manufactured in the metropoles, driving regional transition toward corporate food systems (Hall & Cousins, 2015). Seeds, fertilizers, machinery, and feedstock flow through global supply chains. Retailers source fresh produce through agents or directly from large municipal fresh produce markets—in excess of 880,000 t of fresh food in 2015–2016 (R4.7 billion) were sold in the CoJ fresh produce market, while more than 170,000 t (R787 million) were sold in the Epping Market in Cape Town (Department of Agriculture, Forestry and Fisheries, 2017). These are supplied by agribusinesses that can meet corporate buying agents’ requirements. Corporate-dominated food governance is undemocratic and opaque (Greenberg, 2010; 2017). Housing backlogs, rapid urban expansion, and speculation make land a scarce, highly contested resource. Backyards in poor townships are often filled with shacks, making space for food production is a contested resource. Backyards in poor townships are often filled with shacks, making space for food production is scarce. Nevertheless, microscale urban agriculture appears to be widespread in poor areas, feeding into local, distributed networks (Hope-Baillie, 2017). Although contributions to food security, livelihoods, and social benefits are contested (Battersby & Marshak, 2014; Frayne et al., 2014; Malan, 2015), the technical feasibility of urban agriculture is not at issue here; instead, this prevalence suggests that, given adequate political support, urban agriculture presents fertile ground for transition to far greater local production and distribution. Various nongovernmental organizations support urban agriculture in both metros, and the Izindaba Zokudla farmers network in Soweto has developed a farmer-led innovation and knowledge coproduction space (Malan, 2015). Communities of practice on food governance have been established in both metros, providing a forum for knowledge coproduction (Adelle et al., 2020), but participation from below remains challenging because of technical, financial, and language barriers. The South African Food Sovereignty campaign has cultivated a network of urban farmers and organizations spanning both metros and has initiated mobilization politics including bread marches and symbolic politics including a peoples’ food sovereignty act and a peoples’ tribunal to develop popular legitimacy and achieve transformative systemic impact ‘from below’ (Bennie & Satgoor, 2018). In response to deepening hunger following the Covid-19 lockdown, organizations in both metros have intensified urban agriculture and developed networks for mobilization and knowledge sharing. Prefigurative practices for agroecological transition thus exist in both metros.

In summary, metropolitan residents depend on a hybrid food system dominated by ‘Big Food,’ which extends its reach through informal channels to supply even remote neighborhoods with food. This is overwhelmingly composed of staples and ultraprocessed products with attendant negative health, social, and ecological consequences. While urban agriculture is widespread in urban interstices, to reliably supply significant volumes of food, far more land would need to be unlocked for cultivation. This represents the antithesis of agroecology, indicating that, despite the existence of prefigurative impulses, agroecological transitions face significant hurdles.

What then of the instruments of power with which the state could bring about this momentous shift? To what extent do governance arrangements in the city regions of CoJ and CoCT present fertile ground for agroecological transitions and what might these look like? Would they be limited to neoliberal self-regulation of corporate food processing and retail to reduce and reclaim waste, enhance efficiencies, and encourage substitution with “junk” agroecological produce? Will they remain confined to reformist extension of food aid and urban agriculture starter packs? Might progressive transformation take root, relocating and shortening value chains, cycling reclaimed nutrients to urban farms, improving access of small-scale producers to large tracts of land and productive resources, and enhancing participation by diverse small, distributed enterprises in food processing, distribution and retail? Or could deeply democratic governance arrangements emerge, permitting radical prefigurative pathways ‘from below’ to flourish, sowing the seeds for postcapitalist food systems rooted in a solidarity economy?

### 3.3 Institutional hierarchy and fragmentation

Metropolitan institutions in CoJ and CoCT are large, complex, siloed bureaucracies governing multiple subregions (Pieterse, 2007; Govender & Reddy, 2015; Naidoo, 2015; Table 1). Food security mandates are held by National and provincial departments of agriculture, forestry, and fishery. Locally, food security mandates are isolated in poorly resourced units in departments low in the institutional hierarchy facing budget and personnel constraints and political uncertainty. They pursue competing priorities and multiple complex portfolios (Interview CoJ2; Interview CoJ1; See Table 2). Overlapping mandates and tensions between province and metro constrain multiple-level governance (Interview CoJ1; Interview WC2; See Table 2).
Food governance functions are implemented by various state agencies and state-owned enterprises (Table 1, column 3). In the CoJ, the metropolitan trading company manages informal retail markets while the state-owned City Deep Market and the privatized Epping Fresh Produce Market in CoCT govern fresh produce wholesale. Agents in both markets are regulated by the national Agricultural Produce Agents’ Council. Other food governance mandates are scattered across departments, including development and planning, economic development, health, Joburg Property Company, and the CoCT property management department. Environmental health inspectors under the departments of health regulate food control, primarily ensuring hygiene. Police, peace, and traffic officers enforce street trading policies through the lens of crime prevention. By contrast, Development Planning Departments review development applications for malls and shopping centers, which, after construction, are largely beyond state purview.

The Joburg Development Agency shapes transit-oriented development projects, while food environments in public transport nodes are governed by various agencies including the Passenger Rail Agency of South Africa through local subsidiaries CoCT Metrorail and MiCity, Joburg Metrobus, Rea Vaya, and the Gautrain. Minibus taxi associations resist regulatory interference. For these agencies, agroecological concerns are peripheral (Interview CoCT2; Interview CoCT3; See Table 2).

Waste management departments responsible for food and packaging waste outsource operations to private-sector service providers and state-owned enterprises. Informal waste pickers operate on the margins of this waste economy. In view of limited enforcement capabilities, these departments rely on voluntary self-regulation. Cost implications of duplicate logistics required by separate waste streams limit nutrient cycling (Interview CoCT1; See Table 2). Water and sanitation departments provide services essential for food processing, retail, preparation, and service. The Cape Town port and the CoJ City Deep dry port facilities conduct millions of tons of food trade, but are governed by National institutions, placing a key lever to localize food value chains beyond local government remit.

Departmental cluster coordination mechanisms appear dysfunctional, and planning cycles across provincial and local government are disjointed, resulting in misaligned budgets and implementation targets (Interview CoJ2; Interview GP2; WC1; See Table 2). An informal interdepartmental food systems workgroup is emerging in CoCT (Interview CoCT4; See Table 2) and the hunger crisis caused by COVID-19 lockdown has sparked the development of civil-society food workgroups in both cities. However, neither metro currently has formal platforms enabling coherent or democratic food governance.

3.4 Policy patchwork

Metropolitan food policy, though constitutionally mandated, is shaped by national and provincial food security policies, namely the Integrated Food Security Strategy of South Africa (Republic of South Africa, 2002) and the National Policy on Food and Nutrition Security (Republic of South Africa, 2013a) as well as the National Development Plan (Republic of South Africa, 2012) and Spatial Planning and Land Use Management Act (2013b)—all oriented toward increasing agricultural production and processing (Pereira & Ruysenaar, 2012; Pereira & Drimie, 2016). Trade and industry policy promotes agricultural export and the food processing industry and facilitates import of ultra-processed goods (Thow et al., 2018). Although the local state holds many food-related mandates, national policy provides no explicit mandate for urban food governance, making allocation of budgets and resources difficult.

Provincial strategies and policies further shape the metropolitan policy landscape. The Gauteng 20-Year Food Security Plan (Gauteng Provincial Government, 2013), informed by rural, agricultural paradigms, neglects local structural and spatial drivers of food insecurity and misses the role the city region plays in regional food system transitions. Interventions primarily encourage smallholder farmers to participate in mainstream agricultural value chains by forming cooperatives. The plan proposes an “advisory group of experts” composed of provincial government and civil society representatives. The Gauteng Social Anti-Poverty Development Strategic Plan (Gauteng Provincial Government, 2020) proposes food aid, food banks, and community development and promotes local food production as part of its poverty alleviation and sustainable livelihoods program with a particular emphasis on vulnerable children.

### TABLE 2 Interview codes and descriptions

| Interview code | Respondent description |
|----------------|------------------------|
| CoJ1           | Official, City of Joburg |
| CoJ2           | Official, City of Joburg |
| UJ             | Researcher UJ          |
| GP1            | Official, Gauteng Province |
| GP2            | Official, Gauteng Province |
| CoCT1          | Official, City of Cape Town |
| CoCT2          | Official, City of Cape Town |
| CoCT3          | Official, City of Cape Town |
| CoCT4          | Official, City of Cape Town |
| WC1            | Official, Western Cape Province |
| WC2            | Official, Western Cape Province |
| WC3            | Official, Western Cape Province |
| CoCT5          | Official, City of Cape Town |
The Western Cape Draft Strategic Framework for Food Security (Western Cape Government, 2016) explicitly addresses food systems, asserts the need for data to inform policy, and is guided by a whole-of-society approach. It considers not only the intersection with existing mandates but also identifies policy gaps. The framework explicitly engages with structural and spatial determinants as well as sustainable resource-use issues and recognizes the interplay between formal and informal food economies. The Western Cape Draft Strategic Framework (Western Cape Government, 2019) identifies food security as a cross-cutting issue but proposed solutions remain agricultural and it is unclear how this is to be taken up in the focus areas identified.

Both cities are signatories to the Milan Urban Food Policy Pact (2015), which promotes actions aligned with agroecological transitions. Several strategy documents shape metropolitan food policy terrains. The CoJ Food Resilience Strategy (City of Johannesburg Metropolitan Municipality, 2012b), the CoCT Urban Agriculture Policy (City of Cape Town Metropolitan Municipality, 2007), and the CoCT Food Gardens Policy in Support of Poverty Alleviation and Reduction (City of Cape Town Metropolitan Municipality, 2013b) primarily promote urban agriculture and food aid to indigent households and schools (Smit, 2016; de Visser, 2019; Kroll & Rudolph, 2016). The Joburg 2040: Growth and Development Strategy (City of Johannesburg Metropolitan Municipality, 2012a) identifies the overarching goals of resilience, sustainability, and livability, aiming for poverty eradication, inclusive economic growth, sustainable human settlements and resource use, social inclusion and good governance. It promotes a progressive transition to decentralized regional food production systems by designating land for food production, incentivizing “small-scale growers to provide […] fresh produce for the urban food system”, collaborating “with large food retailers, distributors and manufacturers to create localised systems” and aligning efforts with “national governments to minimise the negative impact of food cartels and retail oligopolies – and to develop and provide protected food markets and productive supply chains.” (City of Johannesburg Metropolitan Municipality, 2013) Food is recognized as a public health determinant, and the city commits to supporting the informal economy to alleviate poverty. The Joburg Green Economy Strategy (City of Johannesburg Metropolitan Municipality, 2013) addresses food insecurity through urban agriculture and proposes the development of a decentralized regional food production system, promoting agroecological farming to increase climate change resilience. The Joburg Integrated Waste Management Plan (City of Johannesburg Metropolitan Municipality, 2011) adopts waste management hierarchy principles advocating waste reduction, reuse, recycling, and recovery, with disposal as the last resort, relying on voluntary self-regulation and outsourcing.

The Cape Town City Development Strategy (City of Cape Town Metropolitan Municipality, 2012) recognizes food as part of the sustainability challenge of the food-energy-water nexus. It references the OneCape 2040 Strategy (Western Cape Government, 2012), which proposes transition to a sustainable economy which is eco-friendly, inclusive, and resilient. It proposes “doing different things” by supporting urban agriculture projects and sourcing 80% of food locally but fails to articulate the political aspirations of agroecology. The Cape Town Economic Growth Strategy (City of Cape Town Metropolitan Municipality, 2013a) pursues global competitiveness, infrastructure development, inclusive economic growth, trade, and environmental sustainability, acknowledging informality but remaining silent on food or agroecology. The Cape Town Social Development Strategy (City of Cape Town Metropolitan Municipality, 2019b) aims to address poverty by supporting the informal economy through skills development and via short-term employment with the Expanded Public Works Programme (EPWP). The Joburg Expanded Social Package (City of Johannesburg Metropolitan Municipality, 2008) offers various degrees of social support subsidies, as well as uptake into the city’s job pathways program, but entails no agroecological elements. The Cape Town Metropolitan Spatial Development Framework (City of Cape Town Metropolitan Municipality, 2018) frames food security agriculturally, mandating protection of agricultural land from development. The Joburg Spatial Development Framework (City of Johannesburg Metropolitan Municipality, 2016) interprets food security as a function of food production located beyond the urban development boundary.

The CoCT Resilience Strategy (City of Cape Town Metropolitan Municipality, 2019a) adopts a food systems lens, acknowledges inadequate food systems governance and data, and notes vulnerability to disruptions. This enabled development of a food systems program to improve “access to affordable and nutritious food for Capetonians, particularly those living in vulnerable communities, using high quality data and focused interventions.” It aims to research “feasibility, gaps and resourcing requirements […] and [working] with societal partners and other spheres of government to agree on a vision and strategy for food in Cape Town; [consolidating] research to identify relevant practical interventions that City should be taking […] and [improving] disaster responses […] for a number of shock scenarios.” The “Live Well Challenge” aims to reduce noncommunicable diseases through healthier eating and active lifestyles.

Strategies are enacted through a plethora of policies and bylaws that shape various elements of the food system (Table 1). Restrictive informal trading policies neglect the sector’s role in providing food (Rogerson, 2016; Kamete, 2013; Skinner & Haysom, 2016), reflecting no agroecological considerations. Several other bylaws indirectly shape food economies yet none consider agroecological perspectives;
they are primarily concerned with hygiene and business practices.

Spatial planning instruments could be repurposed to promote agroecological transition including spatial development frameworks, urban development plans, area trading plans, and environmental impact assessments. Metropolitan state structure, its internal systems of accountability, and day-to-day workings are shaped by the Municipal Systems Act (Republic of South Africa, 2000) and the Municipal Finance Management Act (Republic of South Africa, 2003), which mandate regular revision of integrated development plans outlining programs and projects with associated targets and performance indicators.

Strategies reveal agroecological considerations, and spatial planning instruments could be realigned. However, these are framed in ways that entrench top-down management and avoid engagement with the structures and logic of capitalism, while by-laws, economic and spatial planning favor corporations. Policy innovation involves complex review processes and competition for scarce budgets frequently adjudicated by officials with limited expertise concerning food or agroecology. Instead, development, interpretation and implementation of policies is mediated by metropolitan governmentalities.

### 3.5 Ambiguous logics of control

Metropolitan state function is shaped by ambiguous logics of control where New Public Management (NPM), neopatrimonialism and vanguardist conquest of political power intersect (Brunette et al., 2014; Chipkin & Meny-Gibert, 2011). Dominant NPM emphasizes stringent planning, budgeting, outsourcing, control and accountability through integrated development plans, service delivery and budget implementation plans, key performance indicators, and audits. Fiscal competition dominates policy deliberations. These rationalities inculcate a preference for easily quantified activities and outcomes (Chipkin & Meny-Gibert, 2011; Naidoo, 2015; Interview CoJ1, see Table 2), entrench departmental silos, and create a climate of anxiety around allegations of corruption, discouraging transversal programing and collaboration (Pieterse, 2009; Chipkin, 2012; Interview CoJ1; Interview CoJ2; Interview WC1; Interview WC3, see Table 2). Competitive tendering imposes onerous registration and formalization requirements favoring large incumbents while excluding small, informal enterprises (Interview GP1, see Table 2).

Public land is allocated for local production on a case-by-case basis by officials anxious to retain control over public assets, excluding small, informal food producers and preventing commoning and security of tenure (Malan, 2015; Interview CoCT5, see Table 2). Formal systems are overlaid with informal neopatrimonial logics subjecting access to state resources to favors and loyalty, affecting the procurement of food and production inputs, as well as the distribution of food aid (Hyslop, 2005; Lodge, 2014; Interview UJ3, see Table 2). Vanguardist strategies expose cadres to conflicted loyalties when formal processes contend with party–political agendas (Beresford, 2015; Chipkin, 2012; Kelsall, 2012). Opaque funding arrangements subject party politics to powerful economic interests. These logics are further complicated by tensions between transient political appointees pursuing party careers and officials delivering services (Govender & Reddy, 2015; Pieterse, 2007; Interview CoJ2, see Table 2).

### 3.6 Ideological tensions and problem framing

Multiple ideologies concerning the purpose of the state and of food systems inform the strategic intent to transform metropolitan food systems (Akinwumi, 2013; Pereira & Drimie, 2016; Haysom, 2015; Thow et al., 2018).

Dominant neoliberal ideology in both metros promotes free-market delivery of food as a commodity, relying on voluntary self-regulation, and discouraging interference with capital interests (Busch, 2009; May, 2017; Interviews CoCT2, see Table 2). Dependence of the metropolitan treasury on electricity, rates, taxes, and investment poses incentives to attract corporate food processing and retail, indirectly promoting production, sale, and consumption of ultraprocessed food. The resulting occlusion of agroecological concerns is reflected by the erosion of the Philippi Horticultural Area in Cape Town (Battersby et al., 2014), the eviction of informal traders from downtown CoJ (Rogerson, 2016; Kamete, 2013), erosion of farmland in the Philippi Horticultural Area, and promotion of shopping mall expansion (Battersby, 2017). Modernist urban management narratives portray street trade as discouraging investment while seeing mall developments as investment catalysts (Kamete, 2013; Battersby, 2017; Interview CoCT3, see Table 2). Access to land for cultivation and space for local food markets is therefore constrained and food environments shaped predominantly by capital interests.

Reclaimed waste is governed as a private commodity sold for profit (CoCT1, see Table 2). Consequently, urban farmers are unable to access recycled compost affordably (CoEFS FoodGov Workshop) and nutrients from urban waste streams instead cycle back into the landscaping industry. Seeds and seedlings distributed through agriculture programs are derived from corporations. Standardized project implementation emphasizes training, distribution of equipment, and access to wealthy consumer markets. Dependence on ‘corporate social responsibility’ funds discourages transformational discourse among nongovernmental organizations promoting urban agriculture or distributing food.
Social-democratic impulses balance economic growth and global competitiveness with redistributive measures, mitigating the impacts of unemployment and poverty (Seekings & Natrass, 2015). Examples include food aid distribution, social grants, school feeding schemes, EPWP and value-added tax exemption of staple foods. However, such tax exemptions favor monoculturally produced foods, EPWP employment is short-term, while preferential procurement from local small producers is hampered by higher costs, competitive tendering processes, and formalization requirements (Interview GP1, see Table 2).

African national socialist ideology seeks redress of historical inequities by developing an African middle class and bureaucracy. Compounded by neopatrimonial tendencies to award tenders and state positions based on factional loyalties, the associated ambivalence toward skill compromises merit-based appointments and state capabilities (von Holdt, 2010; Lodge, 2014). Within this ideological framing, the struggle for land—and by extension urban agriculture—takes on important performative significance, contesting the political rights of the country’s indigenous people and their descendants (du Toit, 2018).

This muddle of overlapping ideologies favors neoliberal and reformist food governance, presenting a significant hurdle for the adoption of agroecological rationalities by the metropolitan state.

### 3.7 Troubled prospects for agroecological transitions

This governance terrain is complex, ambiguous, riven by tensions, and contested by unequal powers. Metropolitan territories are far-flung, fragmented, and increasingly informal; their rapidly growing populations beset with unemployment and deprivation. Metropolitan food systems are intricate corporate assemblages enmeshed in global networks of capital and commoditites promoting monocultures, industrial food processing, regional and global sourcing, and distribution through networks generating massive food and packaging waste while offering few jobs. These systems incentivize consumption of affordable but harmful food. To transform food systems fundamentally opposed to agroecological principles, a fierce, sustained, and sophisticated struggle is necessary.

What then of the metropolitan state’s means and will to promote agroecological transition? The scan of the metropolitan food system governance terrain reveals a bewildering, complex ecosystem of policies and institutions (Table 1). Despite promising impulses at the strategic level, a patchwork of policies shapes metropolitan food systems and foodscapes in favor of food corporations, thus disadvantaging local, small-scale food enterprises, while economic policies promote regional transition to corporate food systems. Food security institutions are poorly resourced, lacking formal mechanisms for participatory deliberation or transversal alignment. This serves corporate interests by constraining the state’s instruments to institutions mandated with food safety, tokenistic urban agriculture support, and palliative food aid, thus preventing resolute engagement with the structural and ideological underpinnings of food inequality. However, proposed centralized institutions for food governance, such as food policy councils, present opportunities for top-down cooptation by incumbent interests unless they support and protect the emergence of bottom-up, distributed networks.

Ambiguous rationalities of control and accountability undermine capacity, discourage transversal programming, and stifle innovation. Centrist state rationalities struggle to engage with informal, distributed networks because of their fluidity and apparent lack of legitimate representation. Despite decades of research advocacy and emerging consultative processes, metropolitan food security programming relies on barren theories of change. In the face of dominant ideologies promoting capital interests and the low profile of food and ecological issues, the will to promote deep, just transition of metropolitan food systems is weak. This governance terrain favors capital while disadvantaging consumers and smaller food system agents.

While it appears that the state has means (Table 1) and is developing strategic intent to support agroecological transitions, current configurations of state rationalities and instruments of power reflect primarily neoliberal and reformist transition pathways, perhaps with a few progressive elements. Proposals to regulate food processing and retail toward greater efficiency and agroecological substitution are unlikely to gain traction as governments discourage interference in the private sector and agroecological considerations are far removed from the concerns of mandated institutions. Radical demands of agroecology as a movement, such as the recommoning of land, nutrients, seed, and water; food provision based on solidarity economy; or the development of democratic food governance structures fall foul of dominant rationalities that protect capital interests, struggle to come to grips with the distributed, informal nature of such networks and feel threatened by their association with related struggles (Writers CAN, 2020).

However, embedded across various institutions are officials sympathetic to agroecological transitions, and informal networks forming in workgroups and deliberation platforms present opportunities for alliances, transversal coherence, and assimilation of agroecological values. To realign technical means to transform food systems as outlined in Table 1 (column 4) and negotiate the complex and ambiguous governance terrain, the agroecology movement requires skillful, persistent engagement with progressive officials sensitive to the state’s constraints and capabilities as well as effective institutional platforms for inclusive deliberation. However, the food
systems perspective is too narrow; many hurdles to agroecological transition are rooted in enduring structures and rationalities of the state. To galvanize the will to transform not only metropolitan food systems, but the internal structures and mentalities of the metropolitan state requires more than engagement with reflexive officials. Given structural and discursive disincentives, agroecological transitions in the metros of the ‘Global South’ cannot gain momentum without a strong social movement that articulates a compelling socioecological narrative and emboldens politicians to challenge the rapacious rationalities of capitalism shaping not only the food system but the metropolitan state itself. To leverage the structural power of the state for deep, just transitions, proponents of agroecology must develop sophisticated strategies to engage with the incoherent structures, misaligned policies, and ambiguous rationalities of the metropolitan state.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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