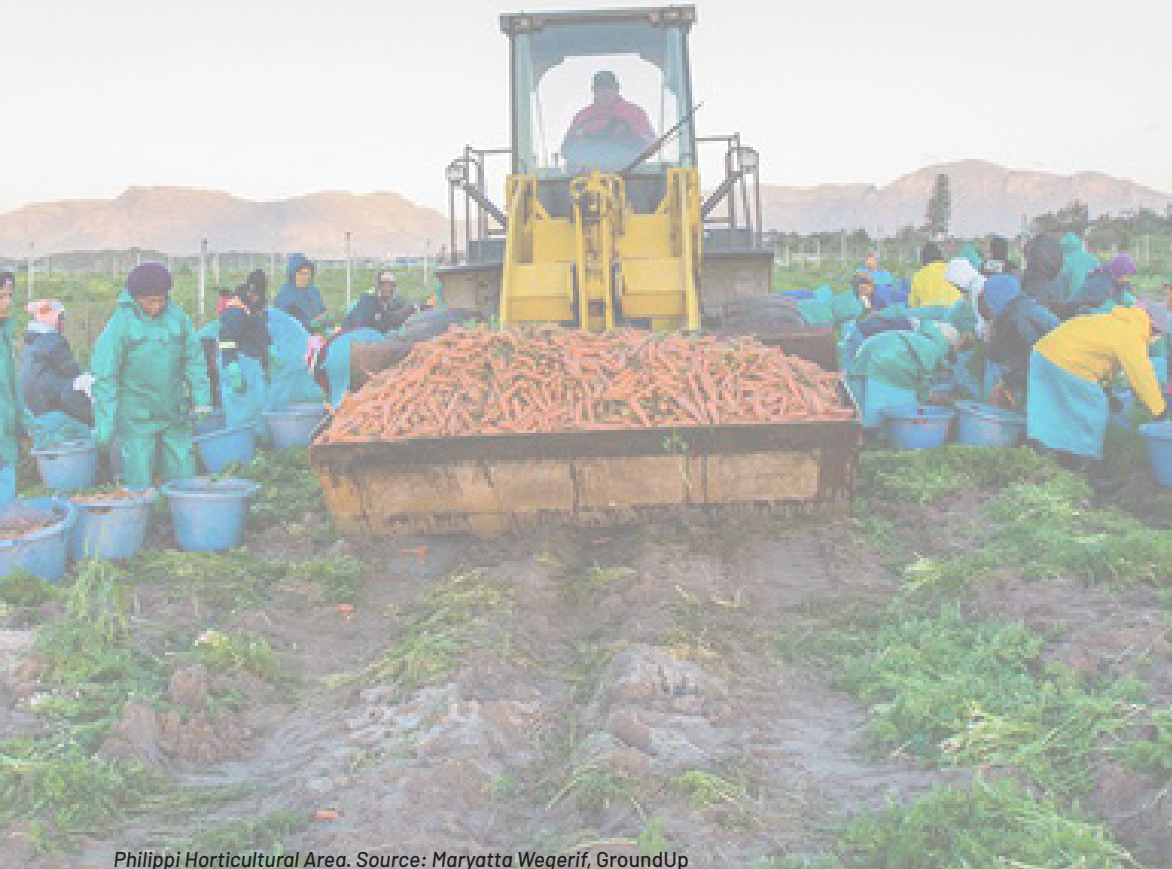
Reparative futurities

South African food production and the climate crisis

– By Matthew Wingfield

The industrialised food system has both contributed to and will in turn be affected by the climate crisis. In South Africa, as is true globally, the way in which food production has intersected with processes of industrialisation and the green revolution has not only shaped how we relate to food production, but to nature more fundamentally. MATTHEW WINGFIELD explores the emergent possibilities of reimagining and reconstituting how food is produced, based on his case study situated in an agricultural zone on the outskirts of Cape Town called Philippi. It explores alternative ways of interacting with environmental resources that can forge "just" climate futures.



Philippi Horticultural Area. Source: Maryatta Wegerif, GroundUp

Introduction

With the continued increase in the world population, which totalled eight billion on 15 November 2022 (United Nations, 2022), food supply and food security are increasingly pertinent global issues. With the concomitant burgeoning urbanisation, and the overarching context of climate change, the underlying dynamics of food production (where and how food is grown) are likely to become key concerns for governments across the world. In South Africa's Western Cape province, the dynamics of food production bring together dominant forms of analysis that speak to the broader history of the region and country. From dependence on a racially specific form of cheap labour to the continued benefit of privileged land ownership, agriculture in South Africa is dominated by historically grounded practices. Food production and its dependence on natural resources, such as soil and water, can no longer be solely read through a Malthusian lens that considers the competing dynamics of resources and growing populations (Malthus, 1798). This article offers a critical engagement with the hegemonic industrial agricultural model and a rethinking of this model through centring a slow, reparative and environmentally beneficial formulation of farming. This brings into conversation forms of historical injustice, and the socially and environmentally reparative practices that can reposition agriculture in a time when it is under intense pressure from all sectors. This article uses a case study from the Western Cape to think through the emergent possibilities of agriculture from a particular site, which has applicability across the country and globally.

This case study maps the historical formation of the industrial agricultural model. It argues that, rather than merely critiquing the role that agriculture has played in the climate crisis, it can also be repositioned to initiate alternative relations with nature and concludes with a discussion that highlights the importance of seeing soil and water not as entities to use and exploit, but rather to develop mutually beneficial relationalities with.

Industrial agriculture and its (destructive) futures

South African agriculture has largely been shaped by racially aligned privileged land ownership and management, propped up by "subsidised credit, state supplies of inputs and controlled marketing since the 1930s" (Hall & Cliffe, 2009:4). Such financial support provided by the apartheid state faced a range of cutbacks in the 1980s and 1990s as South Africa moved toward a politically democratic dispensation in 1994. The post-apartheid government, through its ambitious project of redress, paid particular attention to land ownership and control after almost a century[1] of repressive legislation and violent dispossession (Walker, 2008; Hall, 2014; Ngcukaitobi, 2021). The untethered hopes laid upon the post-apartheid state around land ownership and the overhaul of the political economy of land brushed up against significant and systemic administrative, bureaucratic and economic restraints (Walker, 2008), leaving the form of the agricultural sector largely unchanged. Not only was the agricultural sector grossly unjust through the lens of land ownership, but the model and scale of farming, shaped through the mechanisation and rationalities put forward through the "Green Revolution" (Patel, 2013), led to the exploitation of both labour and land (read soil and water).

As Mather envisaged in the wake of the post-apartheid transition, "a new culture of democracy in South Africa will lead to the reformulation of environmental policies and the development of a more vibrant and all-encompassing environmental consciousness"

(1996:41). Almost three decades after this hopeful prognosis, South African agriculture by and large is dependent on the exploitation of human and environmental resources to address local and international demands for produce. Not only have labour conditions failed to transcend their historically exploitative conditions (Levine, 2013; Hart & Aliber, 2012; Cousins, 2019), but the environmental and ecological limits of the industrial agricultural model are well documented (Satgar, 2011; Hetherington, 2020). With the South African government's focus on creating a class of "Black" emerging commercial farmers (Hall, 2004), it has also bought into a framework which "envisions a more capital-intensive approach to agriculture involving supply chains, increasingly large producers, agro-processors, expanding international markets, and farming with intensive – and often expensive – inorganic fertilisers, pesticides and seeds" (Moseley, 2017:187). When read in a context of increasing food insecurity, with 2% of South Africans having inadequate access to food (Statistics South Africa, 2023), high unemployment, and the positioning of industrial agriculture as one of the core contributing industries to climate change (Trisos *et al.*, 2022), not only the "who" but the "how" of food production in South Africa requires urgent attention. As Patel (2013) urges "Climate change has already been deployed as an alibi for the spread of the New Green Revolution" (Patel, 2013:51) which takes seriously the political ecology[2] of food production, and offers fertile ground for the reexamination of historically grounded farming models across the world, and in South Africa more specifically.

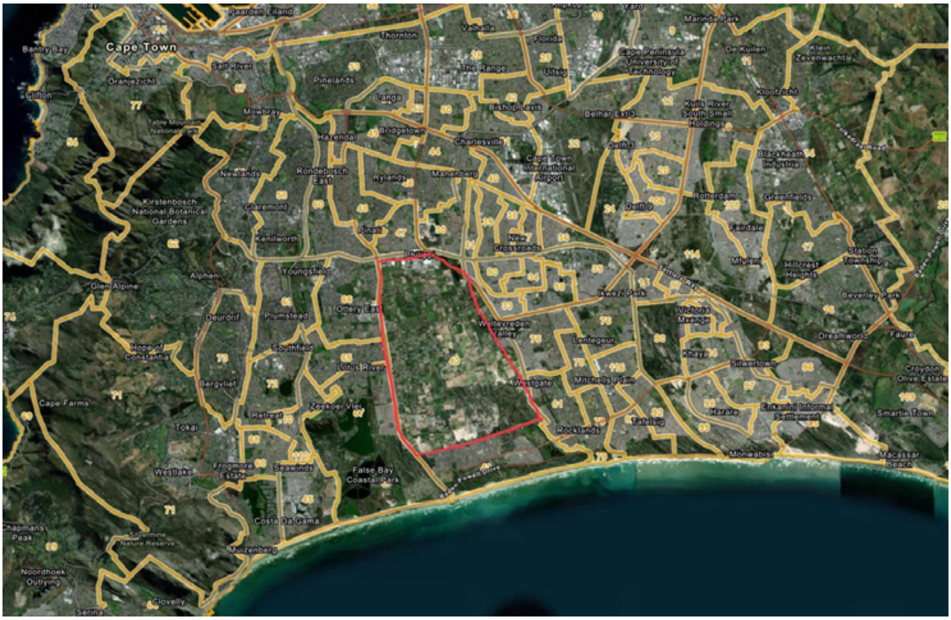
The widespread dependence on inorganic fertilisers cuts across small-scale and commercial agriculture in South Africa (Rother *et al.*, 2008). South Africa is one of the largest importers of pesticides in Africa (Quinn *et al.*, 2011) which has profound impacts both on the mode of agriculture production and the environment more broadly. Not only do such inorganic materials have widespread impacts on farm workers, who are largely framed as expendable and replaceable (Bolt, 2015; Kotsila & Argüelles, 2024), but on both the soil and water that they come in contact with. Through a political ecology lens, the effects of pesticide use cannot be isolated to humans, but to the soil and water on which agriculture and livelihoods are dependent. Imbued with the transformational responsiveness that the climate crisis puts on the agricultural sector, this article highlights how an agroecological model can act as a pathway for agriculture to contribute to "just" climate futures that respond to the exploitation of both Black bodies and the environment it relies upon.

To situate this argument, ethnographic research in an agriculturally zoned area on the outskirts of Cape Town named the Philippi Horticultural Area (PHA) will be drawn upon. From 2020-2023, I conducted interviews with key informants in the PHA, while also conducting extensive participant observation, mainly with an agroecological farming and activist group called the PHA Food and Farming Campaign (PHA Campaign). The analysis that follows is largely focused on the power dynamics that shape an emerging farmer's experience, ranging from economic to knowledge/dominant practices.

The PHA (Figure 1) is located 30km from the Cape Town central business district and has been farmed since the mid-1800s. The area was initially farmed by German immigrants, arriving then as indentured labourers, whose descendants still have a significant presence in the area (Rabe, 2008). A report commissioned by the Western Cape Department of Agriculture has shown how historical access to land for farming makes up the current political economy of the area, with all of the "commercial"

and "big commercial" farmers in the area being white (Western Cape Department of Agriculture, 2018). The area, spanning just over 3000ha in the late 1980s, is now under 2000ha (Western Cape Department of Agriculture, 2018:21). Arable land has increasingly been moved into the control of a handful of farmers who depend on increasing the scale of their operations to ensure financial viability Such expansion is closely intertwined with a reliance on pesticides and inorganic fertilisers which have contaminated the underground water (see Bessire, 2022) and Cape Flats Aquifer (CFA) on which most if not all of the commercial farmers are dependent for irrigation (Western Cape Department of Agriculture, 2018). The restrictive economic and policy landscape in which both commercial and small-scale farmers are embedded restricts the agency of farmers to "farm with nature", and enmeshes them in the "neoliberal food security order" (Clapp & Moseley, 2020). The practices of a small-scale agroecological farming group in the PHA, PHA Campaign, offer a range of alternative possibilities and act as a useful case study to reimagine the agricultural industry.

FIGURE 1: The City of Cape Town's ward designations with the PHA (Ward 43) outlined in red



Reparative socio-ecological praxis

In this context policymakers and governments alike want to "solve" the climate crisis and the agricultural question through a techno-scientific lens, through "salvational" technologies (Hulme, 2014). While the critique of a techno-fetishistic future of agriculture might be branded as "antiscience zealotry" (Borlaug, 2000), such dichotomous framings offer little utility. Rather, this article thinks with the forms of socio-environment relations that can be fostered at such a critical juncture. As environmental anthropologist Kristina Lyons has asked of agriculture in Columbia: "How do soil – what may or may not be conceived of as an object called "soil" – harbor the irreparable wounds and tracks of

violence and germinations of transformative proposals and alternative dreams? (Lyons, 2020:5)

The PHA Campaign, with its origins in state-guided agricultural development which embeds one in an expansionist and inputs-driven model, saw the limitations of such a system due to the 2008 global financial recession (Wingfield, 2022). Chairperson of the PHA Campaign Nazeer Sonday framed the transition to agroecological farming in an interview:

> *So, I had the idea, that if I had greenhouse production that gave six times the yield, then I would just do greenhouse. But it didn't work out that way. … So, I started farming in 2006 and then in 2008 I wasn't doing very well, I was producing a ton of tomatoes a week on the 8-month cycle a year, but I wasn't making enough money. Another reason why it collapsed was because the hydroponic system is very resource intensive, so we have to buy lots of fertiliser, pesticides and that kind of stuff to keep the system going. Remember there was a financial crash in 2008. So, [prices of] all commodities went through the roof, including fertiliser. So, my fertiliser went from R100 per bag to R300 per bag. But at the other end, that price remains the same. And all my other costs remain the same. So, I was not making money. (Sonday, 2021, personal communication)*

Sonday's experience almost two decades ago was not isolated or singular. The global recession led to the "food price crisis of 2007–08 [which] cemented the central role of the private sector in directing global agricultural supply chains based on specialized, industrial food production for global market" (Clapp & Moseley, 2020:1398). These events brought a temporary destabilisation of the political economy of agriculture, specifically for emerging farmers like Sonday, who did not have the capital to manage sharp variations in input costs. This prompted Sonday to reconceptualise how he wanted to farm; by turning his focus to agroecological farming methods, his starting point was the repairing of the soil of his 1ha plot.

Moving away from pesticides and inorganic fertilisers, the agroecological farming model is not used as a set technical model which dictates permitted practices, but rather as a more fundamental political ecological shift in the agricultural mode of production. As Sonday moved away from state-subsidised greenhouse production, his journey of being forcibly removed from the area due to the repressive apartheid legislation of the Group Areas Act of 1950 invoked the discourse of repairing both the soil and reconciling the journey back to a place from which he was removed. When read within the context of the climate crisis, agroecological agriculture can be positioned to respond to the wide array of challenges presented. As Sonday highlighted through his focus on the soil:

> *We [the PHA Campaign] understood that there is a carbon sequestration value when you put in plants and your farm in a particular way, you put in compost and use no-till, keep the roots in the soil, and build soil organic carbon. What became clearer, is that there is a nutrient cycle that comes off the farm and comes onto the farm. When a cabbage leaves the farm, it gets eaten and some of those leaves go into the landfill and cause greenhouse gas emissions, in particular methane. This area is well placed to bring those nutrients back into the system where we can compost them and put them back in the soil. (Sonday, 2021, interview with author)*

The process of repair concerning soil and the process of decomposition in the making of compost (Lyons, 2016), remains a time-consuming and patience-oriented

praxis. As Sonday argues above, building soil organic carbon to the level that increases the productivity of the land, stands in direct opposition to the dependence on using inorganic fertilisers and pesticides. This form of knowledge has been marginalised and lost over generations, which is a need the broader PHA Campaign aims to address (Sonday, interview with author). By intentionally positioning his farm as one that is deeply imbricated in the process of repairing the soil, and permitting the conditions for the breakdown of organic "waste" into compost (Figure 2), Sonday subverts the hegemonic political ecology of agriculture in the PHA, and by doing so, offers pathways of repositioning the mode of agriculture for both historically-privileged land owners and Black emerging farmers.

Figure 2: Mounds of decomposing compost at the PHA Campaign's farm
Source: Matthew Wingfield

The generation of food waste, often seen as a symptom of the wastefulness of the middle class (Aschemann-Witzel *et al.*, 2019), also has its origins in the aesthetics of commercial food production, which deems "ugly food" as discardable (de Hooge, 2022). When read through an agroecological lens, this "waste" is repositioned as an essential input into the process of making compost, to the degree where small-scale farmers struggle to secure access to sufficient organic waste for their farming operation (Afonso & Imbassahy, 2023). Again, rather than looking to an array of salvational technologies to solve isolated issues, environmentally attuned agricultural practice displays its wide-ranging adaptability in a world of "wicked problems". Therefore, waste management as a process of removing organic waste from the household and thus making it invisible, is intentionally made visible by the (value) chains that reinscribe this waste as a valuable commodity. The PHA Campaign, like other similarly aligned groups, has set its focus on establishing localised organic waste networks, which move away from solely the purchasing of compost from distributors at an often-unaffordable price, to enmeshing itself within a slow, deliberate and reparative praxis. Agroecological farming also "decenters the human" which Tsing (2018) suggests is emblematic of the multispecies ontological turn. As Barlow & Drew argue "[composting] as an elemental and multi-species practice that requires close attention to matter, moisture, heat and time … extends care and attention beyond the human" (Barlow & Drew, 2021:12). The PHA Campaign therefore positions itself in relation to a slower, more ecologically attuned

agricultural practice, grounded in an alternative way of conceiving how one interacts with "waste", while further challenging the reliance on inorganic inputs.

Hydropolitical futures

The PHA Campaign's agricultural project has not only moved away from inorganic fertilisers and pesticides to establish a rich nutrient cycle but also to protect the groundwater on which the agriculture in the PHA is dependent. The positioning of groundwater in relation to agriculture has only been increasingly politicised due to the context of the climate crisis (Wingfield, 2024). This article through the lens of political ecology looks rather at the related contamination of underground water resources. Among issues of the rezoning of large tracts of the PHA from agricultural to mixed-use development, and other non-agricultural industries peppered across the farming area, the use of inorganic fertilisers and pesticides is diagnosed as one of the key threats to the viability of the PHA as the "vegetable pantry" of the Western Cape (Western Cape Department of Agriculture, 2018).

Global narratives of food insecurity and water variability (flooding and scarcity) in relation to the extractive logics that frame industrialised, profit-oriented and ecologically destructive agriculture find grounding in the PHA in various ways. Commercial farmers in the PHA make sense of their model of farming concerning its heritage in the area, or in relation to increasing food insecurity. Accordingly, as Ballestero argues, "As underground figures, aquifers are also commonly approached through extractivist parameters" (2023:271). Such relationalities to water resources are longstanding but stand to be destabilised by the current context of the climate crisis. The contamination and overuse of water resources are positioned as secondary concerns to the immediacy of food insecurity, both in South Africa and across the world (Damonte & Boelens, 2019). However, arguments by Nixon (2011) and Hecht (2023), among others, bring attention to how the slow, imperceptible forms of contamination of water resources are made visible by their relation to the poor and working-class who are most likely to inhabit "toxic geographies" (Davies, 2019). Contamination and overuse, as argued above regarding soil, have impacts that span the temporality of the current moment.

Possible reparative futurities

Through the context of the climate crisis, agriculture, its use and abuse of environmental resources, and its role as one of the highest emitting industries globally continues to hold a precarious position within society. In the polarising discourse brought about by the climate crisis, agriculture is seen either as emblematic of the limitations of modernity and natural resource governance or as a paragon of how technical innovation can circumvent even planetary catastrophe. Moving away from such false dichotomies, this article has reframed food production and offered a perspective that can reposition agriculture at a time when it faces its more robust opposition. As Clapp & Moseley argued through the disruptions of the food system due to the Covid pandemic, "the crisis has revealed enormous vulnerabilities in the global food system" (2020:1411). While localised symptoms of the climate crisis are likely to do the same, they also provide the opportunity to rethink the relationship between agriculture and the environmental resources it depends on.

Drawing on an agroecological framework, the PHA Campaign has been able to reposition the way its model of food production relates to the well-being of the soil and water resources it depends on. Such practices are not to be taken as merely aspirational

or critiqued as impractical; such counter-hegemonic praxis allows us to directly address the remnants of both the colonial and apartheid regimes while taking seriously the connectivities between human and the more-than-human (Altieri & Nicholls, 2020). Furthermore, the work done by the PHA Campaign offers insight into how one can rework dominant agricultural practices, even in spaces that are deeply enmeshed in the industrialised agricultural model. As climatic conditions become increasingly unpredictable, the agroecological model, with its politics situated through discourses of climate justice, offers a viable alternative, across Africa and globally. NA94

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ENDNOTES

1 This limited historicisation of the violent dispossession of land in South Africa is developed in relation to the 1913 "Native Land Act", which has been used by the South African government as a cut-off date to land claims that can be articulated through the land reform process.

2 This article, while not providing the scope for a comprehensive engagement with the genealogy and textures of the concept of "political ecology" uses the term to consider the state of natural resources, pushing back against soil and water being positioned as a backdrop to agricultural analysis.

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