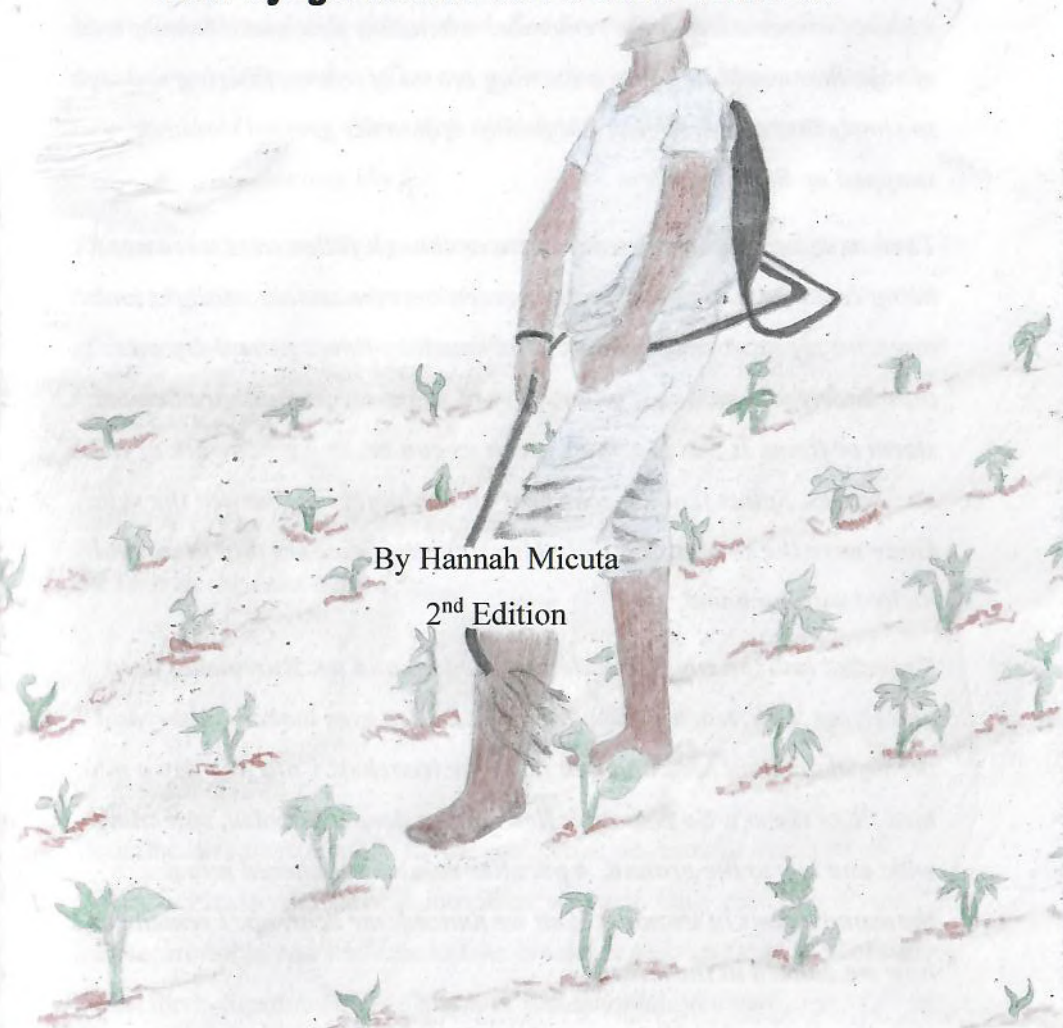
The Sinister Side of Pesticides

How Syngenta Maintains Slow Violence



By Hannah Micuta

2nd Edition

The sun tickled over the landscape, enticing nested creatures awake, putting prowlers to bed and melting frozen sleepy dust from the nooks and crooks of slumber. It had done so for centuries, millennia even, although the colours had changed with time and the heights and depths within. No-one could quite remember when they first met. Memory told of rays that would fall onto a bustling crowd of leaves, filtering through so slowly that any drop that did finally drip to the ground would be snapped up like honeydew.

Then at some point it started to seem as though fallen trees were not being replaced. Large expanses of green became certain, straight and tame, on repeat. Crunchy sheets and squelchy floors turned dry and thin underfoot, making it all too easy to slip away in an unpredictable storm or flood. It was green, as green as can be, in a patchwork of fields and fences. Spires fixed, tracks beat and chimneys pigmented the skies. Gone were the shades of purple-blue and grey; colours that lit up and melted with no name.

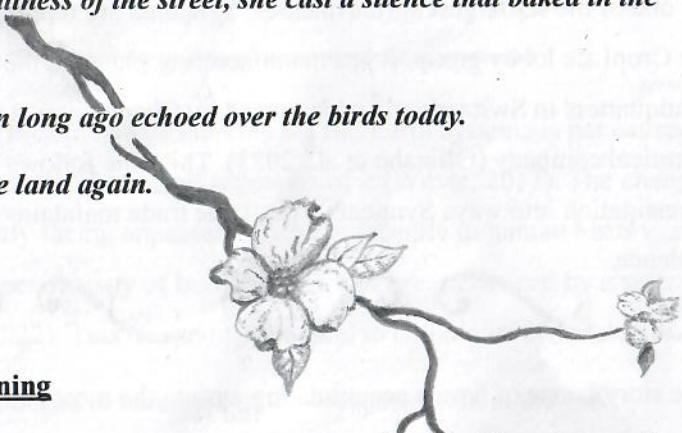
Squeezed into the edges, a little life piled up and up. Burrowing deep and flying high, teaching itself to dive. Dotted eyes looked out beyond the break to plant seed and run from the trenches. Until one day a new bird filled the sky. So smooth it flew and so deep it growled, spreading wide and low to the ground. A peculiar rainbow shattered into a thousand beams in its midst. And we danced, my dear, oh, I remember how we danced in the street.

The next Winter never seemed to end. Though the sun drew longer and no doubt made us warmer, the land did not welcome her return. Thickets once promising sweet berries and gin jutted out witchy fingers and needles prying thin. In the acre, spindly tendrils charred in the earth flaked and fell to the ground. But I remember those wizened trunks from former days (just try, try and wrap your arms around!) and how they held on fast. How they held up high a final few nests, so exposed to the flaming sky.

The sun tickled over the landscape, searching for a fruit to ripen. No rain had fallen on the edges and leaves could not take the heat. Swarms of insects now swept the scene, pillaging all they could eat. And there, in the sombre stillness of the street, she cast a silence that baked in the heat.

Fables spoken long ago echoed over the birds today.

We turn to the land again.



Content warning

This zine discusses suicidal behaviour, genocide, ecocide and acts of violence. Please take steps to look after yourself. Only read this if you feel comfortable and feel free to take breaks or skip sections as necessary. If you have questions on self-harm or feel suicidal, you can visit findahelpline.com to find an international helpline.

Introduction

We are facing ecological breakdown (Hickel et al., 2022). Environmental injustices are already impacting the most marginalised communities in gradual but significant ways (Davies, 2019). It is often a "slow violence" (Nixon, 2011, p.2) that goes unobserved and untreated at the hands of a contested polluter.

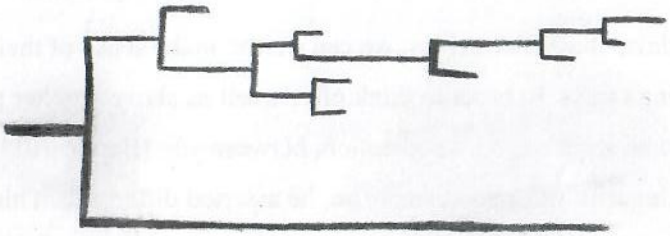
Pesticides are one of the main drivers of insect declines and can significantly impact health (Sánchez-Bayo and Wyckhuys, 2019; Garud et al., 2024). Despite being banned on their own soil, many hazardous pesticides are exported from Global North to Global South countries. These "double standards" (Orellana, 2023, p.7) are exploitative in ways that echo colonialism.

As one of the six largest agribusinesses, Syngenta are represented under the CropLife lobby group. It has manufacturing plants in the UK, headquarters in Switzerland and is owned by ChemChina, a state-owned chemical company (Ollinaho et al., 2023). This zine follows my investigation into ways Syngenta's pesticide trade maintains slow violence.

The story is one of harms accumulating among the most marginalised. It is a story of profits over safety, silencing opposition and playing with the law. A story of colonial logics and history repeating itself. Yet alternative systems are very much alive and possible. So, the final pages provide a few examples of actions that can – and must – be taken, if we are to realise justice (Turhan, 2018).

The Story So Far

For decades, the dominant narrative around food insecurity has claimed that issues can be overcome by intensifying agriculture (Blok, 2018). We are told the cause of our problems lie in overpopulation, inefficient production, and the plague of 'all humanity' (Lewis and Maslin, 2015). However, the world produces enough food to feed 1.5 times the global population. The problem of food insecurity is not one of production, but of maldistribution, environmental damage, conflict and waste (Fakhri, 2024).



Similarly, the breakdown of our climate and Earth systems is not caused by all of 'humanity', but small segments of it (Whyte, 2017). The changes we are currently facing appeared relatively recently in human history, and are tied to a specific way of being human that is experienced by a select few (Wirth, 2022). This inequality is bound to colonialism (Loach, 2023).

As capitalism began to take hold of the Western world in the 16th Century, racial and other categories were invented using 'scientific' methods (Banerjee and Arjaliès, 2021). Carl Linnaeus was a leading figure at this time, establishing the classification system we use today. Yet he is less known for his role in creating racial hierarchies (Kendi, 2023).

Linnaeus' hierarchies put White, masculine, heteronormative and able-bodied humans at the top. Anyone lacking one or more of these characteristics was increasingly rendered 'sub-human' (Springgay and Truman, 2017). Now, history demonstrates that slavery existed before the 16th Century (Morrison, 2000). Yet these hierarchies of 'human-ness' validated oppression and control (Shiva, 2016). They provided colonisers with a justification for enslaving those considered 'sub-human', and transforming landscapes into plantations (Tsing, 2015). With this control, it became possible to fuel unsustainable and high-consumption lifestyles in countries like Britain (Davis et al., 2019).

If we scrutinise these hierarchies, we can start to make sense of their underpinning logics. In order to think of yourself as above another person, there has to be a difference, a separation, between you (Barad, 2011). Through Linnaeus' efforts to categorise, he asserted difference. This exemplifies what scholars call 'Othering' (see glossary), and it fuelled the subordination of other beings to which we are connected (Whyte, 2017).

Nature, too, was Othered, becoming compartmentalised into resources to be exploited (Mies and Shiva, 2014). This colonisation of nature dissolved understandings of the relationship between all things. Thus, what emanated from racial categories spread into classifications of nature and was used to justify genocide and ecocide (de Nardin Budó and Garcia, 2025). As Ailton Krenak (2020, p.16) notes;

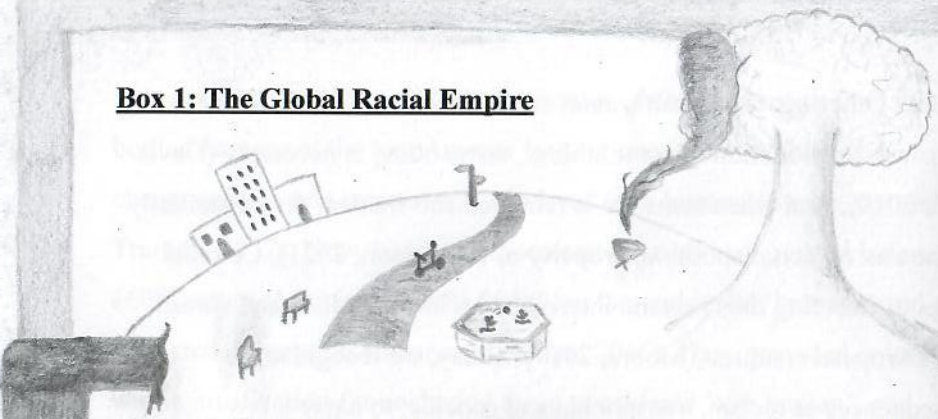
> [W]e became alienated from this organism of which we are a part, the Earth.

Without Othering, capitalism cannot survive (Sultana, 2022). To deliver on growth, exploitation of some 'thing', some other, is necessary (Davis et al., 2019). And when someone is rendered sub-human, they essentially become an object; disposable, property of (Dhamoon, 2021). Colonial logics of Othering thus became intertwined with capitalism and spread with European conquest (Moore, 2017). Today, we recognise the consequences as racism, transphobia and ecocide, to name a few oppressive systems (Táíwò, 2022). The term "racial capitalism" (Robinson, 1983, p.2) is commonly used to reflect how the two are interconnected (Bhambra, 2014).

For Olúfẹmi Táíwò (2022), however, the term 'racial capitalism' is inadequate at capturing how colonial logics can be internalised, affecting societal norms and perceptions of the self. Instead, Táíwò (2022, p.10) proposes the term "Global Racial Empire" to understand the world.

In this zine, I use the term 'Global Racial Empire' not to dismiss other forms of Othering like sexism, but to take race as the starting point for understanding the power relationships that define the world's classification systems today (see Box 1) (de Nardin Budó and Garcia, 2025).

Box 1: The Global Racial Empire



The term 'Global Racial Empire' captures how racial categories initially fuelled colonial expansion. Through internalisation, coloniality became a matrix of power. The logic of hierarchy was exercised in the control over nature, gender, knowledge and other categories (Mignolo and Walsh, 2018).

As former colonies gained independence in the mid-20th Century, calls for wealth redistribution and reparations for historical exploitation were not met (Nkrumah, 1965; Getachew, 2019). Nation-states were therefore inequitably integrated into the world economic order (Kendi, 2023).

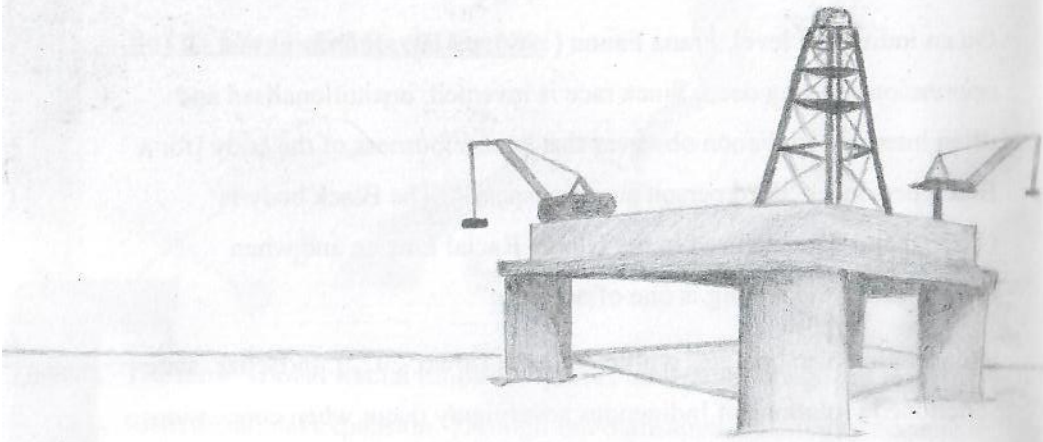
Colonial power, however, has become more complex over time. Previously, wealth was described as accumulating in the Global North. Today it can be more accurately understood as concentrated among elites and transnational corporations (TNCs), often headquartered in the Global North (Táíwò, 2022). Vandana Shiva (2016) recognises this neo-colonialism in the monopoly that agribusinesses hold over seed patents, and the dependency this builds among agricultural workers, especially in the Global South. In the climate justice sphere, this is compounded by fossil fuel interests portraying the climate crisis as inevitable or offering false solutions to delay divestment from oil and gas (Sultana, 2023; Tsui, 2023).

On an individual level, Franz Fanon (1986, p.110) reminds us that oppression can ring deep. Since race is invented, institutionalised and often internalised; Fanon observes that "consciousness of the body [for a Black person] is 'third person consciousness'". The Black body is Othered and dehumanised in the Global Racial Empire and when internalised, "the feeling is one of negation".

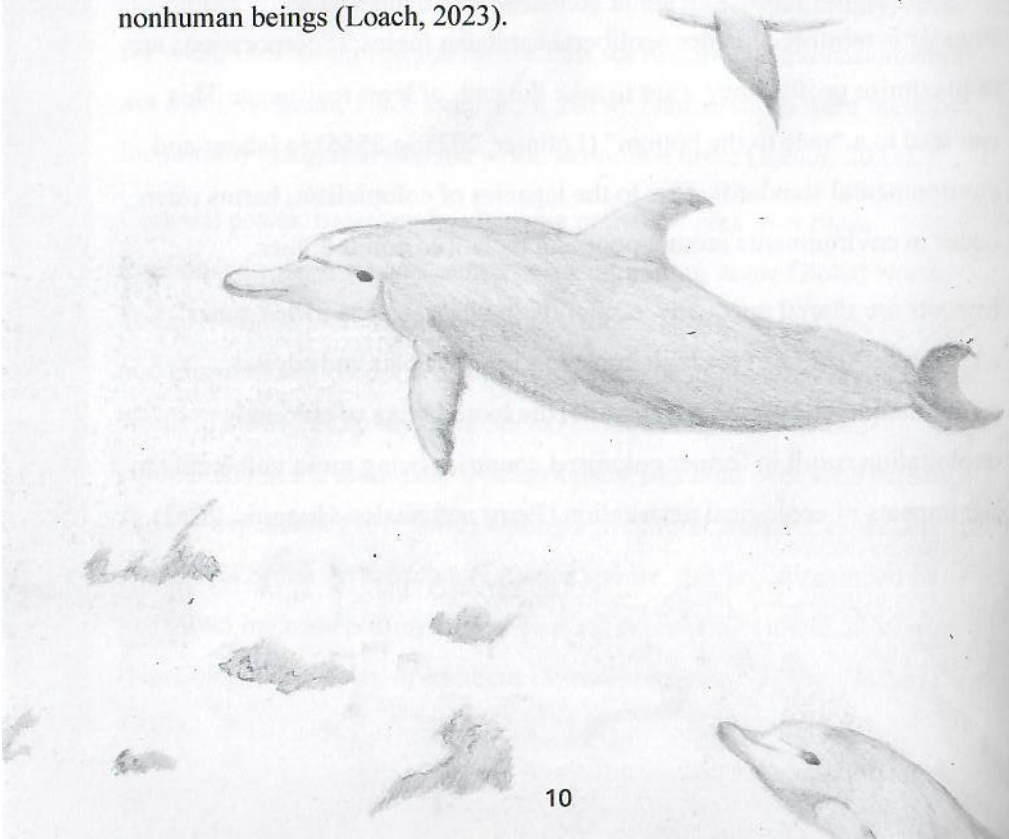
Colonisation also operates within nations (Táíwò, 2022). In Belize, state-sanctioned violations of Indigenous sovereignty occur when concessions for logging are granted on Mayan ancestral lands (Penados et al., 2023). There is also "occlusion" (Urt, 2016, p.865), where Indigenous Peoples who actively resist colonisation are silenced and forced to comply with the laws of the country that their territory falls in.

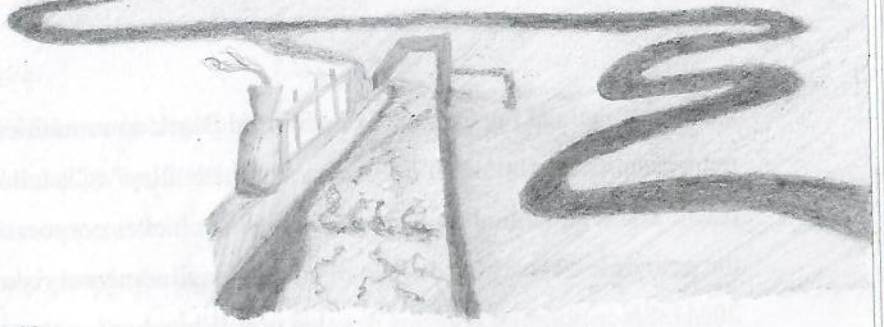
Plunder is reinforced under neoliberal capitalist logics. If corporations are to maximise profits, they want to take the path of least resistance. This can lead to a "race to the bottom" (Latimer, 2021, p.2556) in labour and environmental standards. Due to the legacies of colonialism, harms often occur in environments around poor and racialised communities.

Impacts are shared unequally, accumulating in "racial sacrifice zones" (Achiume, 2022, p.3) for high-consumption lifestyles and capital accumulation elsewhere. Meanwhile, the looted scars of colonial exploitation result in former colonised countries being more vulnerable to the impacts of ecological devastation (Perry and Sealey-Huggins, 2023).



Through the lens of the Global Racial Empire, connections between different forms of oppression become clear. There can be no environmental justice without racial justice, food justice and justice for nonhuman beings (Loach, 2023).



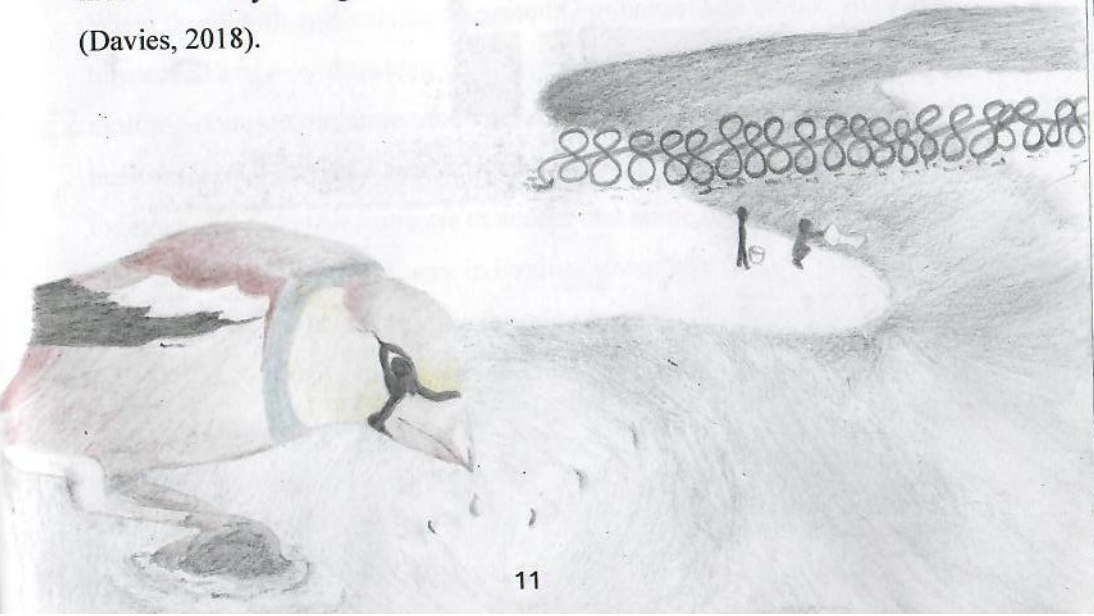


Slow Violence

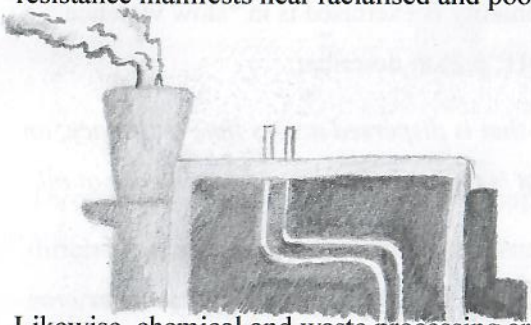
One sinister way in which coloniality is exercised is in "slow violence"; a term coined by Rob Nixon (2011, p.2) to describe;

> *[D]elayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all.*

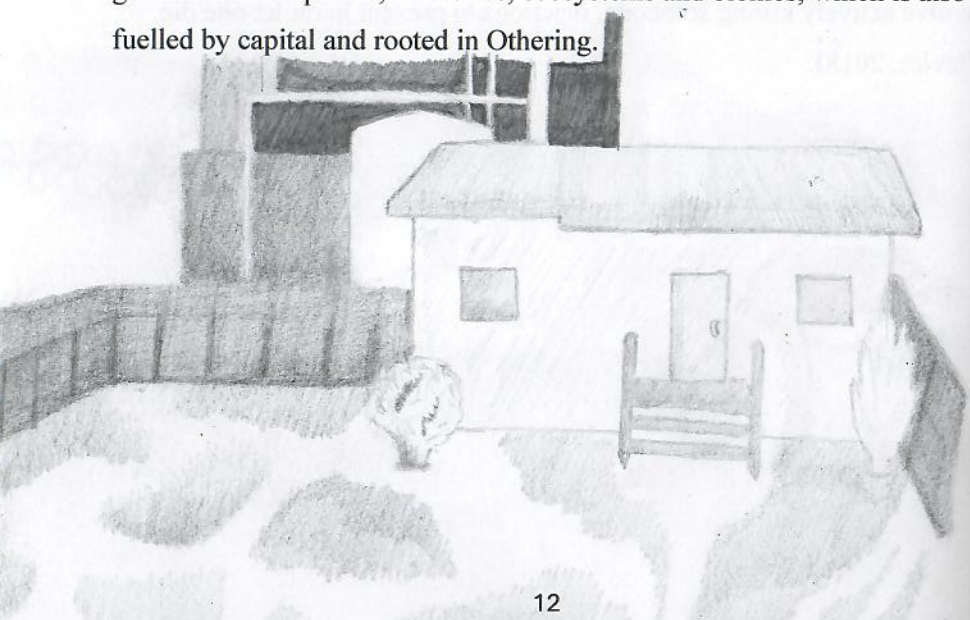
While violence is widely perceived as immediate and visible, slow violence is gradual (DeFalco, 2021). Its harms can accumulate from different forces and cause death over long periods of time, making it difficult to assign blame (Mbembe, 2001; 2003). It is sometimes useful to use the distinction made by Thom Davies (2018) between making and letting one die. Davies (2018) says that while slow violence does not involve actively killing someone, inactions to prevent harm let one die. (Davies, 2018).



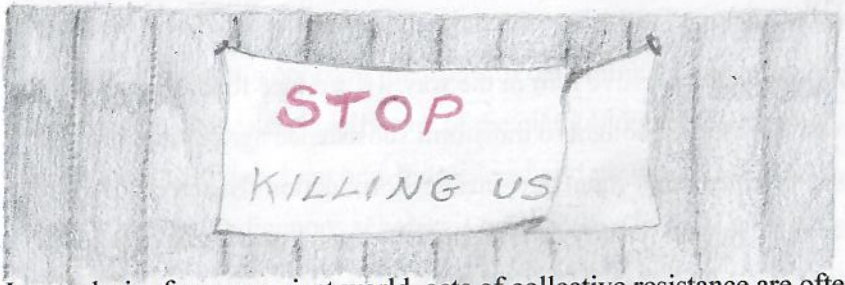
Examples include the exposure of poor and Black communities to petrochemical pollution in Louisiana's "cancer alley" (Castellón, 2021, p.15). The race to the bottom under capitalism incites corporations to take the path of least resistance when managing environmental risks (Latimer, 2021). Since colonial legacies devalue non-White bodies, the path of least resistance manifests near racialised and poor communities (Davies, 2019).



Likewise, chemical and waste processing are often offshored to the Global South (Gonzalez, 2024). In a similar way, slow violence affects nonhuman beings in the form of what is called "drip ecocide" (de Nardin Budó and Garcia, 2025, p.5). The term describes the imperceptible and gradual loss of species, territories, ecosystems and biomes, which is also fuelled by capital and rooted in Othering.



While slow violence is largely described as invisible, it is very real to those impacted (Davies, 2019). To ignore their observations of harm would be to enact epistemic violence; silencing and making assumptions about the very people facing oppression (Spivak, 1988). If we say that slow violence always goes unseen, we risk reinforcing the idea that some people's stories do not count (Davies, 2019).



In our desire for a more just world, acts of collective resistance are often celebrated. However, it is important to note that "resigned activism" (Davies, 2018, p.1543) and immobilisation in the face of injustice is also common. This is not through lack of care or laziness, but often in response to the sheer pervasiveness and uncertainty of everyday hazards. When faced with systemic oppression, meaningful legal action is unlikely to succeed and may threaten life. Some people could be experiencing multiple issues at the same time, including caring responsibilities, limited healthcare, and a lack of access to healthy food. These factors compound together and can push someone to accept that some things are beyond their capacity to control. Every individual's response to slow violence is unique. As we build and explore this zine together, it is worth taking note of Zoe Todd's (2016) advice to challenge our biases, listen, and try to understand each experience.

Why Pesticides?

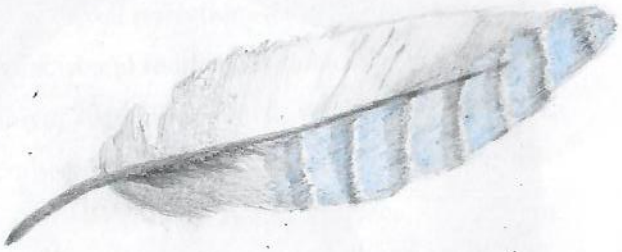
Pesticides are used as means for control, aiming to exterminate beings considered problematic. They include herbicides, insecticides and fungicides (Eddleston, et al., 2022). Beyond their impact on 'pests', most pesticides impact non-target organisms (NTOs). Among humans, the impacts are often concentrated around the most marginalised (Navas, 2023).

WWII marked a decisive turn in the way we produce food. The so-called 'Green Revolution' sought to transform subsistence agriculture into export-oriented, high-input agri-business production (Bauerly, 2016). Since then, human fertility rates, especially sperm quality, have fallen sharply. The most cited offender is pesticide use (Mehrpour et al., 2014; Giulioni et al., 2022). Many pesticides can interfere with our hormones and are known as endocrine-disrupting chemicals (EDCs) (Reeve, 2021). Pesticides also degrade soil ecosystems, with impacts on soil productivity and the very food we are trying to grow (IPES-Food 2017).

It is already recognised that pesticides contribute to slow violence and drip ecocide (de Nardin Budó and Garcia, 2025). This zine follows my investigation into the ways in which a major agribusiness, Syngenta, contributes to slow violence through its pesticide trade. Details on the methods used can be found by scanning the QR code at the end of this zine.

A Little Bit About Me (The Author)

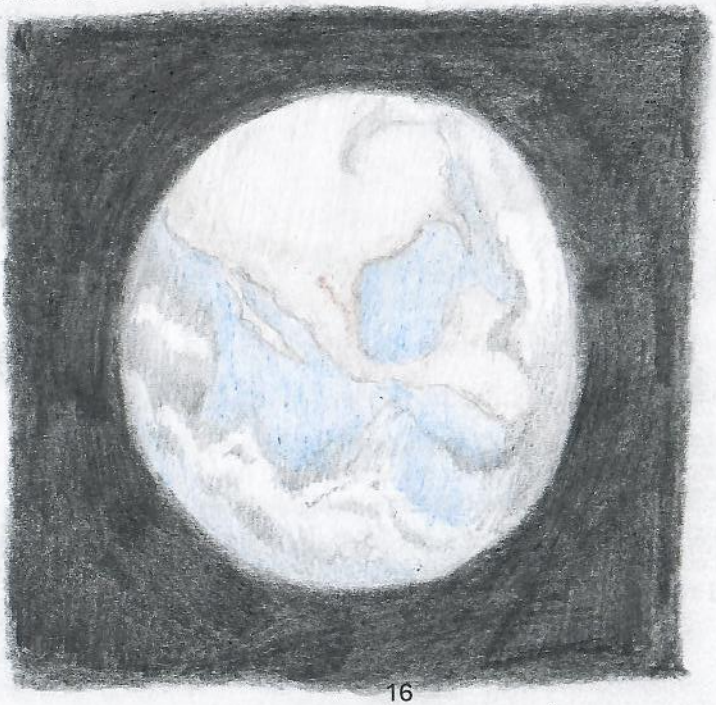
Born and raised in Reading, UK, I am far removed from the more direct pesticide harms explored in this investigation. I am a White British, cis-het, young woman from a middle-class background, which grants me a relative degree of security in our current world. Although, I do navigate with neurodivergence and mental health difficulties. My identity grants me certain privileges when investigating this topic, but I may at the same time obscure and misrepresent the truths of communities that I don't identify with. This is especially true of the many Indigenous Peoples I talk about in this zine. I am non-Indigenous[1] and though I have read the works of several Indigenous scholars, I have always lived in a Western culture and I am yet to truly experience the customs, culture and practices of any one Indigenous cosmology. Even now, I risk condensing multiplicity into one broad term, 'Indigenous', paying only tokenistic respect to different Indigenous Peoples from the Māori in Aotearoa/New Zealand to the Sámi of Sápmi/Lapland.



[1] Using the term 'non-Indigenous' implies a binary between 'Indigenous' and 'non-Indigenous' people that ignores the overlaps and flows between them (Todd, 2016; Olsen, 2017). Yet I use the distinction to highlight my positionality as a student brought up under Eurocentric teachings. It requires me to unlearn internalised colonial logics and reflects my relative privilege as a British citizen with limited awareness of threats to Indigenous sovereignty (Spivak, 1990; Urt, 2016).

Without directly engaging with the people and places I am talking about, I risk misrepresenting their truths. However, given the injustices that prevail, I do not see stepping away as generative. Instead, it is important to recognise what privileges we have and leverage them to drive change (Eizadirad et al., 2024). My relatively secure position as a White British woman offers me the prospect of reaching certain UK audiences and catalysing change where other people may have limited access. So, this is my attempt to approach the topic with care and solidarity, urged by a shared motivation for justice.

While I have tried to challenge my assumptions, remember to take what you read with a pinch of salt. Question how I have built up my conclusions, note my sources and look into the suggested further readings to find some of the authors who have inspired and guided my learning.



Seeking Solidarity

Allyship, Leanne Betasamosake Simpson (2017, p.100) says, is not realised "unless white [people] are willing to divest themselves of the power of being white". If I am to commit to decolonial practice, I must unlearn certain ways of thinking. This requires vulnerability and openness to questioning how I think (Springgay and Truman, 2017). I also need to give serious attention and space to the truths of marginalised communities who experience silencing in the West (Sundberg, 2014; Todd, 2016).

To grapple with this, I have sought to contextualise the stories being shared, without naming individuals in a way that could put them at risk. All of the sources used for the investigation are secondary, meaning that I have not collected any data myself, nor obtained consent for anyone's words to be included in this specific zine. So, every name you read is a pseudonym, unless that person authored the article themselves.

I have also included some personal reflections and sought to learn from several anti-colonial, anti-racist and Indigenous thinkers (Kimmerer, 2013; Sundberg, 2014; Shiva, 2016; Todd, 2016; Whyte, 2017; Sultana, 2023). Someone I frequently return to is Ailton Krenak (2020), an Indigenous leader of the Krenak People in Brazil who face threats from pesticides, land grabs and industrial agriculture. Since his thoughts have guided much of the zine, Box 2 gives an overview of the Krenak cosmology, in the hope that it will help to ground understandings and reduce the likelihood of anyone, myself included, cherry-picking Ailton Krenak's teachings to fit our own purposes.

Box 2: Krenak Cosmology

The Krenak People recognise a reciprocal relationship with water, the land and all living beings. For instance, the Doce River, known as *Watu* in their language, is recognised as the ancestral grandfather of the Krenaks. It is a living and wise entity with whom there is a sacred connection of kinship. *Watu*, like all nature, is imbued with spirit, agency and rights – it is not a mere resource to be exploited. A river has the "right to flow" (Naknanuk, 2024, 20:00), just as a you and I have a right to life. There is no concept of 'owning' nature, but rather a recognition that harm to the river is harm to the community itself.

The knowledge that we are all deeply connected is embedded within Krenak cosmology. The critical threats that our species are currently imposing on our environments stem from a specific idea that human beings are separate from nature; once we begin to believe in our minds that we are different and can commodify other beings, it is not long before they are physically harmed. As Ailton Krenak (cited in Conectas, 2021, para 1) says, "[t]he climate crisis has been foretold by native peoples from the outset". The human-induced disasters that we currently face are not 'natural', but rooted in a colonial mindset[2].

[2] This understanding is shared with other Indigenous communities. Among several Native American communities, there are stories of *Windigo*, a cannibalistic spirit that can transform a person into a selfish, murderous being (Smallman, 2015). Robin Wall Kimmerer (2013) uses the wisdom gained from stories of *Windigo* to explain how the desire for money can encourage people towards destruction and injustice.

Nevertheless, the future is not locked in. Ailton Krenak reminds us that everything is always in constant creation (Campos, 2025). Alternative futures exist and will become possible once we realise that "being is more important than having" (cited in Sordi, 2024).

To enable alternative futures, we need to transform the way we interact with each other. It will require a radical change in how and why we act (Steffen et al., 2011; Loach, 2023). The word 'radical' comes from the Latin, *radicalis*, meaning 'root' (Oxford English Dictionary, 2025). Radical change simply means to change something at its roots (Davis, 1990). Too often the phrase is used to spread fear and keep the status quo. However, if we are to avert our current crises and (re)build[3] more sustainable habits from the root, radical change is exactly we need.

[3] I have bracketed the 're' in 'rebuild' to highlight how alternative systems that may be community-oriented, low-input and prioritise care can be unfamiliar to people who, like me, live where disconnection and industrial agriculture dominate. Yet the principles are not new and have been practiced by communities across the globe for centuries (Krenak, 2020; Fernandes, 2025).

Findings

The investigation found 9 ways that Syngenta maintains slow violence. They cover stories from Yavatmal in India, to Mato Grasso in Brazil, to Louisiana in the US and beyond. Here we paint the picture by discussing each one in turn.

Harms to Human Health

Syngenta has an array of pesticide products, each containing at least one of the 120 active pesticide ingredients it manufactures (Public Eye, 2025). Almost 40% of Syngenta's bestsellers are considered to be highly hazardous pesticides (HHPs) by the Pesticide Action Network (PAN). This is shown in Figure 1 (Dowler, 2020b).

HHPs are defined as pesticides that pose "particularly high levels of acute or chronic hazards to health or the environment" (FAO and WHO, 2014, p.vi). They include products using paraquat, of which "one sip can kill" (EPA, 2025b, para 20). Even products that are not HHPs can be irritants and/or neurotoxic (Lewis et al., 2016). A significant proportion of Syngenta's business model is therefore based on selling hazardous substances (Public Eye, 2025). Closer analysis indicates slow violence in these harms being attritional and/or disproportionately impacting the most marginalised.

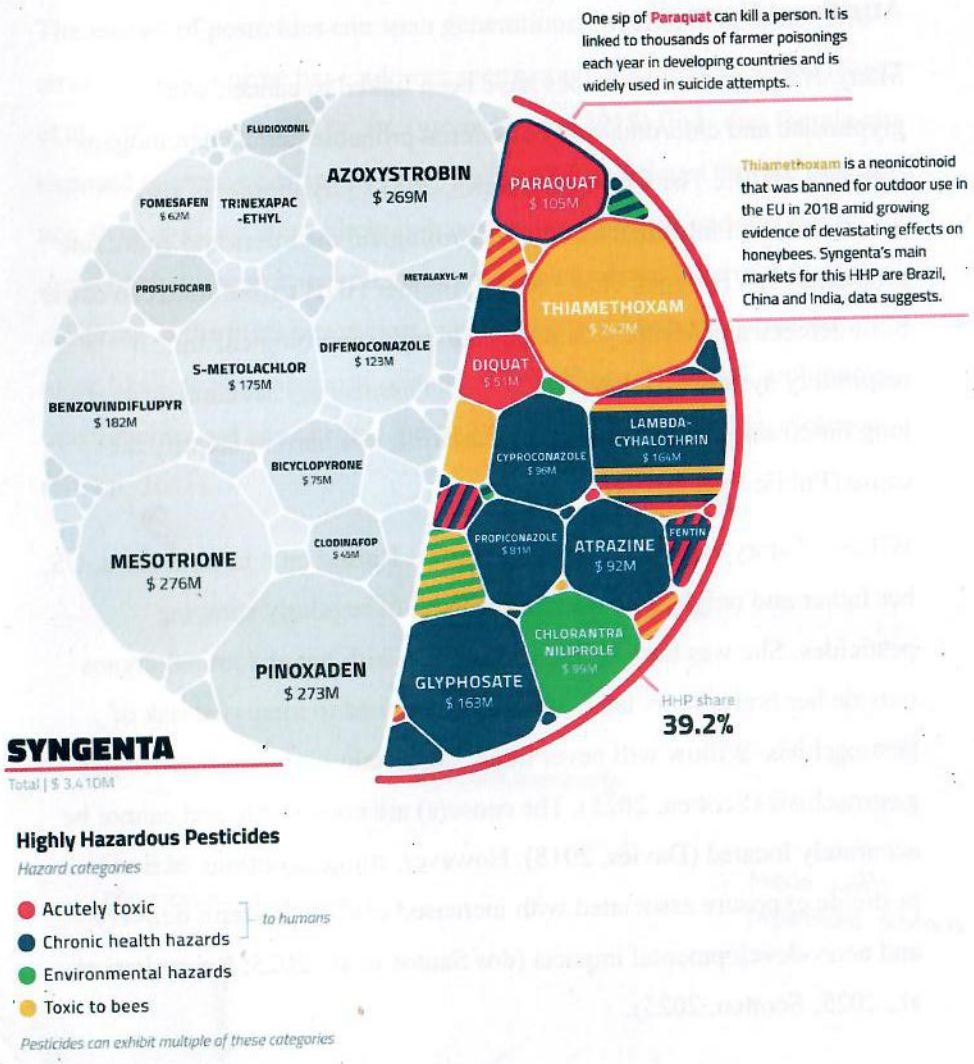
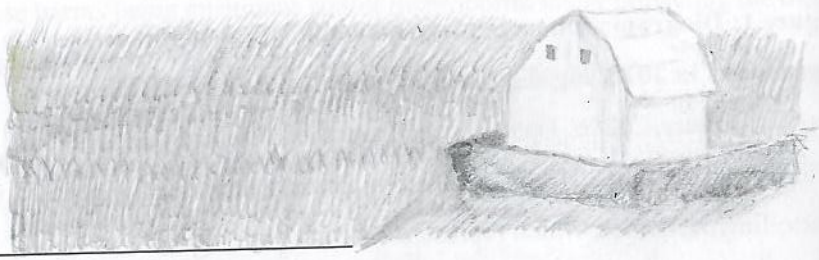


Figure 1: Diagram demonstrating Syngenta's bestselling active ingredients in 2018, highlighting the share made up of HHPs. Source: Dowler, 2020b. Data source: Unearthed/Public Eye analysis of Phillips McDougall, 2018. Note the diagram only includes Syngenta's bestselling pesticides, which represent 34% of total sales.

Attritional Harm

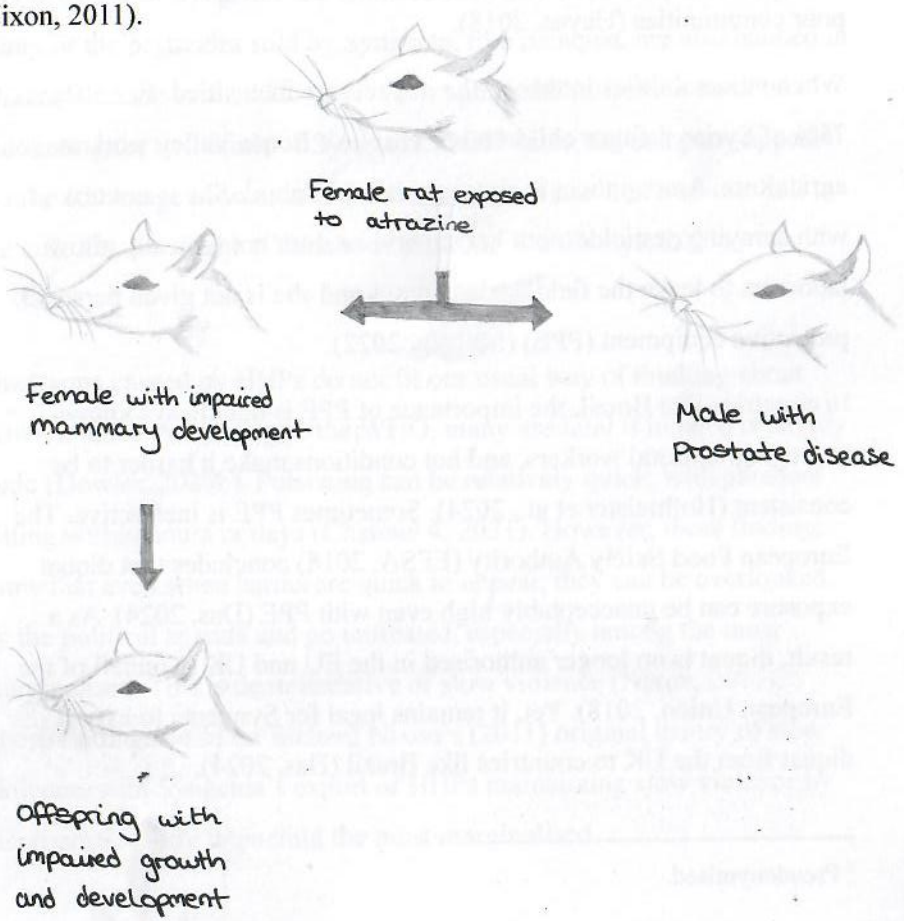
Many of Syngenta's pesticides have been linked to cancer, with glyphosate and chlorothalonil considered probable human carcinogens (Dowler, 2020b; The Costa Rica News, 2023). Glyphosate is also associated with intestinal diseases, neurological disorders and endocrine problems (van Bruggen et al., 2021). Another HHP, carbofuran, can cause birth defects, and severely damage endocrine, neurological and respiratory systems (Gabay, 2023). These harms may accumulate over long timeframes so that when they manifest, it is hard to identify the cause (Public Eye, 2019a).

Willow's[4] story exemplifies this ambiguity. Raised on a farm in Iowa, US, her father and neighbours were in the habit of regularly spraying pesticides. She was born with gastroschisis, with her abdominal organs outside her body. Years later, atrazine was linked to increased risk of gastroschisis. Willow will never know for certain if atrazine caused her gastroschisis (Scotten, 2025). The cause(s) are contestable and cannot be accurately located (Davies, 2018). However, studies continue to find pesticide exposure associated with increased cancer, pre-term delivery and neurodevelopmental impacts (dos Santos et al., 2025; Rosemiarti et al., 2025; Scotten, 2025).



[4] Pseudonymised.

The impact of pesticides can span generations. Male humans who have atrazine in their urine have a lower sperm count and are less fertile (Swan et al., 2003 ; Hayes, 2018). Dr Tyrone Hayes (2018) finds that female rats exposed to atrazine are more likely to have an abortion. Of those that do not, their sons are more likely to have prostate disease, and daughters more likely to have impaired mammary development. Therefore, offspring in the third generation, who may never encounter atrazine, are more likely to experience impaired growth. These attritional, ambiguous, intergenerational and chronic harms bare the hallmark of slow violence (Nixon, 2011).



Disproportionately Impacting the Most Marginalised

It is understandable that farmworkers and factory workers are among the most exposed to pesticides. Yet in the US, farmworkers are predominantly immigrant and Latinx (Gross, 2024). In California, paraquat application is most concentrated around communities that are Latinx and/or experience poverty. Similarly, Syngenta's atrazine production facility is based in Louisiana's 'cancer alley', where the community is 80% Black/African American. Prostate cancer is 8.4 times higher in this factory, demonstrating how pesticide impacts concentrate around racialised and poor communities (Hayes, 2018).

When vulnerabilities intersect, the impacts are intensified. For instance, 75% of Syrian refugee children in Lebanon's Beqaa Valley work in agriculture. Among them is sixteen-year-old Zahra[5]. She is not tasked with spraying pesticides, but her supervisor does not typically allow labourers to leave the field during sprays and she is not given personal protective equipment (PPE) (Muhsin, 2022).

In countries like Brazil, the importance of PPE is not always known among agricultural workers, and hot conditions make it harder to be consistent (Hofmeister et al., 2024). Sometimes PPE is ineffective. The European Food Safety Authority (EFSA, 2018) concludes that diquat exposure can be unacceptably high even with PPE (Das, 2024). As a result, diquat is no longer authorised in the EU and UK (Council of the European Union, 2018). Yet, it remains legal for Syngenta to export diquat from the UK to countries like Brazil (Das, 2024).

[5] Pseudonymised.

This is true not only for diquat. Chlorothalonil is banned in 32 countries, yet sold by Syngenta to companies across Latin America and Africa (The Costa Rica News, 2023). Thirteen EU-banned pesticides entered Palestinian markets between 2018-2023 from companies like Syngenta (Taweel and Elsobky, 2024). In fact, Syngenta was responsible for 98% of the 8,489 tonnes of active ingredients exported from the UK in 2023 that would be illegal for use on home soil (Dowler and Hofmeister, 2024).

As the owner of Syngenta, the Chinese state also holds responsibility. Many of the pesticides sold by Syngenta, like paraquat, are also banned in China (Ollinaho et al., 2023). With low and middle-income countries accounting for two thirds of Syngenta's HHP sales, the company appears to take advantage of weaker regulations for products that it cannot sell in the UK, EU and China (Ollinaho et al., 2023; Public Eye, 2025).

The harms caused by HHPs do not fit our usual way of thinking about slow violence. According to the WHO, many are fatal if inhaled or highly toxic (Dowler, 2020b). Poisoning can be relatively quick, with paraquat killing within hours or days (Channel 4, 2021). However, these findings show that even when harms are quick to appear, they can be overlooked by the political agenda and go untreated, especially among the most marginalised. This is demonstrative of slow violence (Nixon, 2011). These findings build on Richard Nixon's (2011) original theory of slow violence, with Syngenta's export of HHPs maintaining slow violence by disproportionately impacting the most marginalised.

Harms to Planetary and Nonhuman Health

Nonhuman Beings

By definition, pesticides cause harm to the weeds, insects and other 'pests' they target. My main focus here is on harms to organisms that are not targeted (NTOs). Before moving on, however, it is striking to think about the very concept of a pesticide – to think how disconnected many of us have become to feel that we can pick and choose organisms to exterminate without consequences (Nociti and Blaise, 2024). This is an idea that deserves more scrutiny beyond this zine.

Among NTOs, pollinators like bees have been decimated by pesticides (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2016). A notorious culprit is thiamethoxam, a neonicotinoid that is toxic to bees and banned in the UK, yet exported to countries like Brazil by Syngenta (Dowler, 2020a).

Unfortunately, the extent of pesticide harms to other pollinators like beetles, butterflies and moths is unknown (Franklin and Raine, 2019; Wan et al., 2025). In fact, there are huge gaps in the data (Howard, 2020). It is almost impossible to grasp how many species are threatened by pesticides, if only because scientists are yet to identify and fully describe 86% of species on Earth (Wiens, 2023).

These unknowns can create a false sense of security. Most environmental risk assessments study the impact of individual pesticides on only a few select species. This means the scientific studies used to inform regulations overlook how pesticides may be used in practice. Once applied, pesticides can interact with other chemicals in the environment with unknown effects. Meanwhile, impacts on wider ecological communities and processes are unaccounted for (Zaller, 2020).

Nevertheless, pesticides "threaten pollinator populations" (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES], 2017, p.xii). Harms have been documented among amphibians, earthworms and mycorrhizal fungi (Zaller, 2020; Paetow et al., 2023; Wan et al., 2025). Birds can experience sub-lethal effects meaning that they do not die instantly, but become more susceptible to predators by experiencing impaired feeding, mobility and offspring development (Goebel et al., 2022). Pesticides like glyphosate can also induce changes in soil microbial communities, with mixed implications for plants. Yet, most studies find an increased susceptibility of plants to disease-causing bacteria, leading to their slow death (van Bruggen et al., 2021).

Ecosystem-wide Effects

The effects of pesticides ripple out through the food chain. Birds, fish, bats and other organisms that may not be directly impacted by pesticides can be affected by changes in their food or habitat (Nickel, 2021). Chlorpyrifos threatens endangered species like Pacific salmon and orcas, because orcas prey on salmon (NOAA Fisheries, 2022). Thiamethoxam is linked to bird deaths, partly because it kills the insects they eat (Health Canada, 2021).

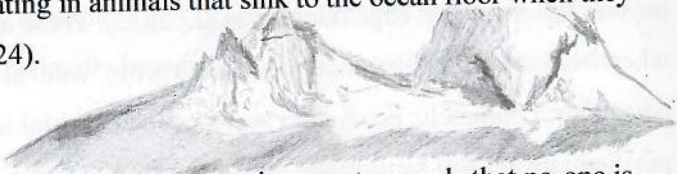
It may seem counter-intuitive, but pesticides usually make pest problems worse. Ecosystems are made up of intricate webs of connection, carefully evolved over long periods of time. Agricultural ecosystems (agroecosystems) are no different, and natural dynamics of recycling, purification and pest control have supported food production since humans first harvested seed. When pesticides diminish natural predators of insects like frogs and parasitic wasps, agriculture loses natural pest control (Zaller, 2020). This means declines in pollinators "could threaten food production" (IPBES, 2017, p.xii).

In lab studies, two of Syngenta's pesticides, paraquat and spinosad, have been shown to reduce earwig populations. Earwigs are natural predators of economically significant pests like aphids (Hanel et al., 2025). In this way, Syngenta's pesticides may exacerbate pest issues and pesticide dependency in the long term (PAN Europe, 2024).

Pesticide impacts can spread far from where they are applied. After spraying, they may be blown onto nearby environments in what is known as 'spray drift' (Zaller, 2020). In one study mimicking how chlorpyrifos is sprayed on soybean crops, the pesticide was found to spread up to 400m beyond the crop field edge (Goebel et al., 2022). These are the areas where we may walk, birds may nest, trees grow 'wild' and all may take in pesticides. Ultimately, ecosystem services such as drinking water purification and soil fertility are diminished. This makes ecosystems, including agroecosystems, less resilient to climate change and even more dependent on inputs like pesticides (Zaller, 2020).

Concerning soil and water, many of Syngenta's pesticides are known contaminants (Dowler, 2020b; van Bruggen et al., 2021). Data from the Brazilian Ministry of Health reveals that 7 pesticides sold by Syngenta are commonly found in Brazilian drinking water, sometimes at levels 10-20 times that allowed in the EU (Public Eye, 2019a). Rainwater samples in Switzerland have been found so heavily contaminated with pesticides like atrazine that if these concentrations were in local water sources, it would be illegal to claim them as suitable for drinking. It is not clear how this contamination occurs, but it is assumed that pesticides evaporate from agricultural fields and become part of rain clouds (Zaller, 2020). When it rains, pesticides can leach deeper in the soil or runoff fields into surface water (Syafrudin et al., 2021).

The impacts of pesticides are far reaching. Traces are found in the fat of penguins in Antarctica, the Andes peaks and deep ice cores in the Alps (Zaller, 2020; Hermanson et al., 2021). Pesticides are also present in the Mariana trench, considered among the most inaccessible and (near) pristine habitats on Earth (Cui et al., 2020). This is likely due to pesticide residues accumulating in animals that sink to the ocean floor when they die (Xie et al., 2024).



Finding pesticides in these extreme environments reveals that no-one is safe. We are, in fact, all part of this organism called Earth (Krenak, 2020). This is reflected in the Bengali concept of *shakti*; a strength or energy transmitted from nature to humans. In Nodi, Bangladesh, people recognise how synthetic inputs like pesticides cause a loss of *shakti*. It becomes *bhejal*, grown through *bhejal* practices carried out in the sole pursuit of profit. As a result, *bhejal* food has less taste and nutrition, and is coupled with growing health problems (Dewan, 2021).

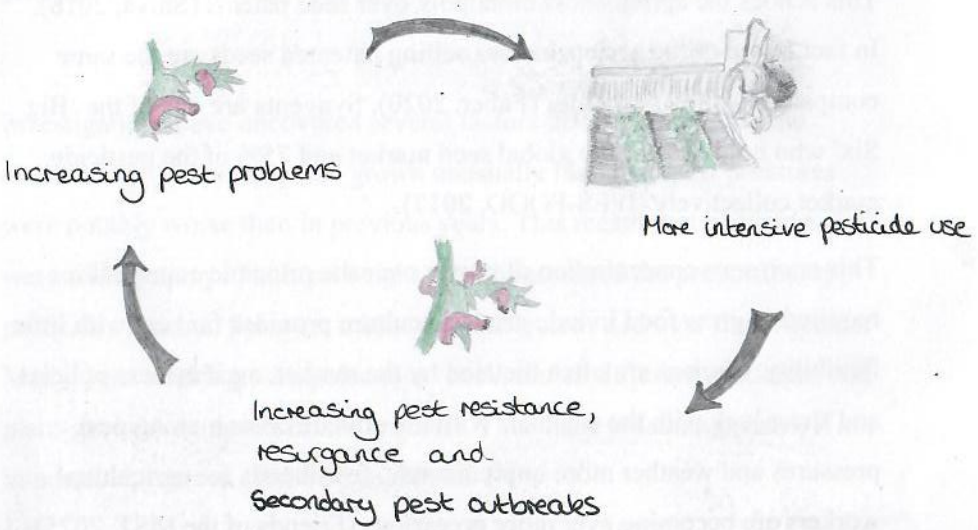
With pesticide residues dispersed so far and wide and deep, having lost their label along the way, the extent of Syngenta's responsibility is difficult to determine. This shows how Syngenta's pesticides contribute to biodiversity loss and drip ecocide. Yet this slow violence can slip through legal systems that require evidence to connect a culprit to their crime (DeFalco, 2021). Its impacts are gradual, almost imperceptible, but nonetheless violent (de Nardin Budó and Garcia, 2025).

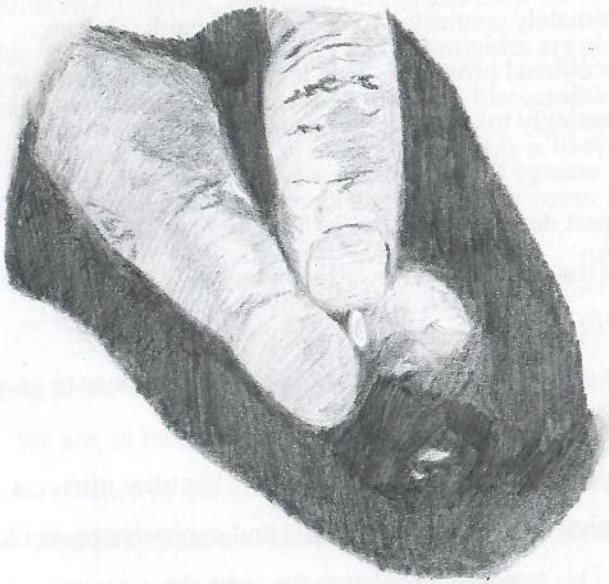
Harms to livelihoods

Human health is intimately connected to ecosystem health (Dewan, 2021). So too are livelihood prospects. This is clearly demonstrated in the cycle of using increasingly toxic pesticides. It is called the pesticide treadmill and it can emerge for three reasons (van den Bosch, 1989);

1. The target pest develops resistance (Mansfield et al., 2023).
2. Removal of the target pest allows secondary pests to take over (Zaller, 2020).
3. Elimination of natural predators allows pest populations to grow (PAN Europe, 2024).

For agricultural workers, the impacts can be severe. Families often get locked into a debt spiral as they buy more toxic and expensive pesticides (Public Eye, 2018). This may not be because the risks are unknown. Rather, "the farmer's life is locked into a loop of exploitation [...] dictated by the state and industry" (Neelima, cited in Public Eye, 2018, para 9).



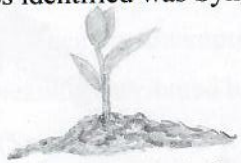


This echoes the agribusiness monopoly over seed patents (Shiva, 2016). In fact, some of the agribusinesses selling patented seeds are the same companies selling pesticides (Faber, 2020). Syngenta are one of the 'Big Six' who hold 60% of the global seed market and 75% of the pesticide market collectively (IPES-FOOD, 2017).

This enormous concentration of power over the principle commodities required to grow food in industrial agriculture provides farmers with little flexibility. Choices are often dictated by the market, agribusiness policies and sheer luck with the weather. With the climate crisis making pest pressures and weather more unpredictable, livelihoods for agricultural workers are becoming ever more precarious (Friends of the MST, 2025).

Perhaps the most stark demonstrations of precarity can be found in the agricultural state of Maharashtra in India. Known in ancient scriptures as "the safest place in the world" (Public Eye, 2018, para 7), Yavatmal lies in the cotton belt of Maharashtra. Today, this state has the highest per capita suicide rate among agricultural workers and farmers. With income heavily dependent on unpredictable yields, expensive inputs and pest pressures, many get caught in a debt spiral and resort to loan sharks. Compounded by the shame of not being able to pay a daughter's dowry or child's education, suicides have become the norm.

In this context, it was months before authorities noticed a spike of poisonings in the city in 2017 (Public Eye, 2018). 800 agricultural workers were admitted to a hospital in Yavatmal between July and October after suffering acute poisoning from spraying pesticides, of which 23 died (European Center for Constitutional and Human Rights [ECCHR], 2022). One of the main pesticides identified was Syngenta's product, Polo (Public Eye, 2018).



Investigations have uncovered several factors that contributed to the disaster. The cotton crop had grown unusually high, and pest pressures were notably worse than in previous years. This meant that pesticides were widely sprayed at head height, which increased the proportion of pesticides inhaled. Sprayers often only had a cloth tied over their mouths. Many were working with poisonous 'cocktails' of different pesticides and plant-growth regulators mixed together. This made poisonings hard, if not impossible, to treat. (Public Eye, 2018).

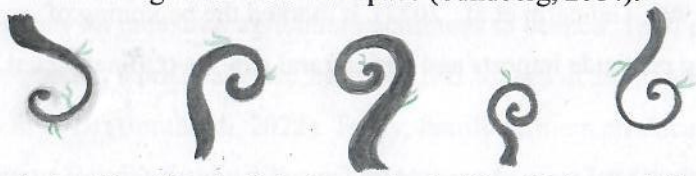
In the aftermath, survivors have been left less able to work (ECCHR, 2020). Widows and children weeding in the fields now struggle to earn a third of what sprayers could (Public Eye, 2018).

The case of Yavatmal reflects a common lack of PPE used or made accessible for those handling pesticides in the Global South (Taweel and Elsobky, 2024). Yet, the case also demonstrates how precarious livelihoods can develop, providing little option but to engage with toxic pesticides in dangerous ways.

Syngenta (2018b) insist they are not to blame. Yet by supplying Polo and contributing to the pesticide treadmill, their pesticides further precarity and help maintain exposure of some of the most marginalised to contexts of slow violence (Environmental Justice Foundation [EJF], 2020).

The pesticide treadmill obliterates the prospect of sustainable livelihoods. However, many people continue to use them, and they shouldn't be demonised for doing so. Public Eye investigators speak to an agricultural pilot in Brazil who sprays pesticides from his plane. He notes that business is doing well, "more pesticides are being sprayed than ever before" (cited in Public Eye, 2019, para 69).

For many people, pesticides can be experienced as a vector for prosperity or social status (Lapegna and Kunin, 2023). There can also be implications for gender equality as pesticides grant women the ability to manage farms alone while their partners migrate for work (Hu and Rahman, 2016). Sitting in a cosy study halfway across the world, it would be easy for me to say point blank that it is wrong to use pesticides. However, pesticides are layered with different meanings based on the contexts in which they are used. Going in with my own agenda could do more harm than good, reinforcing hierarchies and belittling existing knowledge. It reminds me of the need to challenge my assumptions, and be open to understanding how values and meanings attributed to pesticides can change over time and space (Sundberg, 2014).



As a first step, Box 3 looks into the context of Brazil, the world's largest pesticide consumer (Bombardi, 2022). In 2023, the vast majority of Syngenta's banned exports from the UK went to Brazil (Dowler and Hofmeister, 2024). It is therefore worth taking a deep dive into how Brazil came to be an agricultural hub.

Box 3: Spotlight on Brazil

Following oil price shocks in the 1970s, the US encouraged Latin American countries to take out loans (Sims and Romero, 2013). Yet once Brazil opened its economy, high interest and exchange rates made public deficits inevitable (Dalto, 2019; Sims and Romero, 2013). Brazil was hit with a debt crisis and debt relief became essential (Bresser-Pereira, 2022).

Subsequently, Brazil received a Structural Adjustment Plan (SAP) from the IMF (Stuart, 1992). SAPs offered loans and debt restructuring on the condition that countries made reforms to cut state services, open markets further and follow a neoliberal capitalist ideology (Khoury, 2018).

The SAP also pushed for a 'Green Revolution'. Brazil's economy had long focused on exporting primary goods. Now, the country had to focus on exporting products grown under high chemical input monocultures (Stuart, 1992; Gaboardi et al., 2023). It marked the beginning of increasing pesticide imports and agricultural exports (Ollinaho et al., 2023).

Despite the SAP, economic growth was not felt equitably across Brazil. It is now recognised that SAPs exacerbated poverty and unequal extraction from the Global South to the Global North (Bigger and Webber, 2021). In this way, colonial relations were reinscribed under the guise of a global free market – capitalism (Nkrumah, 1965).

In principle, Brazil is an independent sovereign state, just like how we think of the UK. However this view overlooks how countries are inequitably integrated into the world economic order (Táíwò, 2022). Brazilian agriculture is 'locked-in' to a pro-pesticide regime. Stepping away would now threaten the pockets of elites, the structure of Brazil's economy and push the country further into the periphery (Ollinaho et al., 2023).

Recently, Brazil's position has intensified under an ever-tightening relationship with China. The former low-income country is challenging traditional powers and has become central to the agrochemical industry through the purchase of Syngenta; the biggest player in the Brazilian market (Castilho et al. 2022).

Dependency on industrial agriculture continues to deepen. Total pesticide consumption in Brazil has risen from 385,501 tonnes in 2010 to 685,745 tonnes in 2020 (Bombardi, 2022). Today, family farmers produce the majority of Brazil's food while agribusinesses use most land and state support (Sauer and Mészáros, 2017). Soybean is a major export to cattle, pork and fish industries in Europe and China (Torri, 2023). With soybean an exotic grain that most Brazilians don't eat, cultivation uses valuable resources that do not contribute to local food security (Faber, 2020).

For all it is worth, agricultural productivity has increased significantly in Brazil. Yet the increase in profit margins has not brought improvements to workers' living conditions (Friends of the MST, 2025). Rather, harms are experienced for the benefit of European and Chinese consumers, TNCs like Syngenta, and wealthy land owners in Brazil. It is, as Larissa Bombardi (2023, p.1) calls it, "chemical colonialism".

The picture inside Brazil is more complex. There are numerous cases of pesticides being illegally sprayed on peasants, land reform settlers, Indigenous Peoples, like the Guarani-Kaiowá, and Quilombo communities established by escaped slaves from the 1600s onwards (Pinho et al., 2024; Schröder, 2024). In 2024, 17,027 Brazilian families were victims of this chemical warfare, mostly caused by people involved in agribusiness with the intention of expanding the agricultural frontier (Fernandes, 2025).

Without being informed of pesticide risks, Indigenous People may use water from rivers without treatment. In Tirecatinga in the agricultural state of Mato Grosso, empty pesticide containers often end up in rivers. One Indigenous member recalls how people used to collect these containers to use in their own homes. Another Tirecatinga native says (cited in Gabay, 2023, para 27);

> We are not taking any precautions because we have little understanding of how to deal with the issue.

Syngenta (2019a) claim to have trained over 25 million people in the safe handling of their products. Though it appears that Syngenta are yet to acknowledge the specific threats facing Indigenous communities and ensure that necessary precautions are taken.

Out in the farm-encompassed hamlets of Mato Grosso, locals recall the rapid changes they bear witness to (cited in Public Eye, 2019, para 46);

> There, there and there [...] there was forest everywhere. [...].
>
> Our wildlife has disappeared.

Now with only a small strip of trees running along the river bank, fields sprawl over the landscape. 14.5 million hectares of Amazon rainforest have been cut down in the state of Mato Grosso alone in the past 20 years – that's the equivalent of 3.5 times the size of Switzerland (Public Eye, 2019).

In this changing landscape comes a changing climate. It is now hotter and the rain falls for shorter periods.

Pesticides are part-and-parcel to industrial agriculture. Large-scale monocultures would not be viable without them (Boincean, 2024). While intensive methods boost production of key crops like soybean in the short term, they devastate biodiversity and the long-term viability of the soil (Zaler, 2020). So when people talk about the loss of tapirs, anteaters, macaws, jaguars and the expanse of forest around them, their demise cannot be separated from pesticide use.

In the towns, too, the risks are apparent. Pesticides are driving insects to seek refuge in urban areas, where their numbers grow annually. In response, authorities are also turning to pesticides. Public Eye (2019) investigators come across a municipal employee spraying a patch of green with one of Syngenta's products. It contains thiamethoxam and lamda-cyhalothrin. Both are HHPs, the former toxic to bees and the latter known to interfere with hormones (PAN, 2021; Lewis et al., 2016). Public Eye (2019, paras 38-40, original emphasis) report;

> The municipal employee may be aware of [the risks], but he won't be able to remove the protective aluminium foil from the pesticide bottle with his rubber gloves on.
>
> **So he takes off a glove and presses his uncovered thumb into the foil until it breaks. Liquid sprays out. Large patches of his hands and wrists have lost their skin pigment. He tells us that it's because of the 'veneno' the poison.**
>
> He says that naturally he'd rather do something else, but he didn't stay in school long enough and there aren't many other jobs.

The instance reflects how a lack of alternatives can push the most marginalised into circumstances of slow violence. Even if Syngenta (2019a) claim that their products must be used with appropriate PPE, such a defence demonstrates a disconnection with the realities that workers face. Meanwhile, Syngenta lobby for the deregulation of HHPs in Brazil, suggesting that safety for workers is not Syngenta's priority (Bombardi and Changoe, 2022).

Figure 2: Municipal employee preparing to apply pesticides.
Source: Parracho/Reuters in Public Eye, 2019.

I caution here that I am drawing a story from secondary sources, without speaking directly to workers in Brazil. This seriously risks epistemic violence and emphasises a need for future collaboration (Stroud et al., 2024). However, I feel it is important not to dismiss that with a person being pushed into work that puts his health at risk, with a poison that visibly strips his hands, the violence of capitalist and colonial logics appear to have no limit.

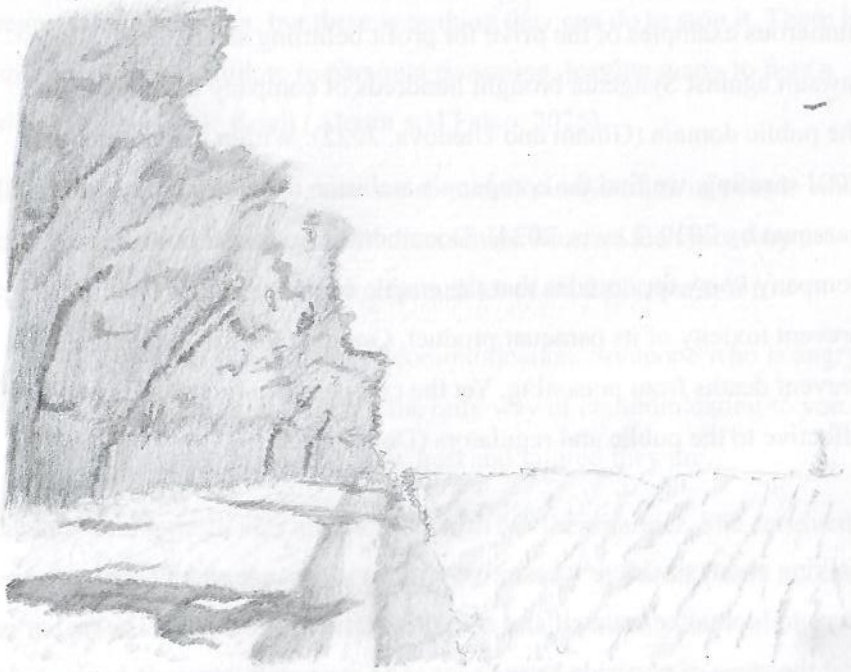
While this reality imposes itself on the margins of Brazil, agribusinesses are sinking into the seat of power. The election of Jair Bolsonaro in 2019 catalysed institutional support for pesticides (Ollinaho et al., 2023). Despite the subsequent election of Luiz Inácio Lula da Silva promising a return to low-input agroecology, a conservative Congress weakens Lula's power (Wenzel, 2024). Agribusinesses are represented in *Bancada Ruralista*, the agribusiness bloc of Congress (Bombardi and Changoe, 2022). They hold around 60% of seats, dominating over the environmental caucus' 10% (Schröder, 2024).

Lula can issue vetoes against bills considered anti-Indigenous or anti-environmental, but the agribusiness caucus continues to push them through (Wenzel, 2024). Recent examples include the Pesticide Bill, which eases restrictions on dangerous pesticides, and the Marco Temporal Bill, which imposes a cutoff date for Indigenous land claims (Schröder, 2024).

The interests of pesticide corporations are represented in powerful lobby groups like CropLife Brasil. Syngenta are also part of SINDIVEG, which has aggressively lobbied for the use of dangerous pesticides like paraquat and glyphosate (Bombardi and Changoe, 2022).

Think tanks like the *Instituto Pensar Agro* (IPA) work in partnership with the agribusiness caucus. Financed by 48 agribusiness associations, the IPA is known to write bills, convene meetings, pay journalists to influence the public debate, and is alleged to spread fake news. For instance, during deliberations of the Marco Temporal Bill, the IPA shared a video falsely claiming that people could lose their homes to Indigenous communities if it was not approved. The IPA's actions demonise Indigenous People, who are increasingly being stripped of their rights (Wenzel, 2024).

All these efforts have paid off for agribusinesses, with pesticide use escalating six-fold in twenty years (DeSmog, 2025).



What emerges from this picture is a pattern of internal colonialism, where impacts on health threaten the very existence of entire marginalised communities and nonhuman beings (Urt, 2016; Gabay, 2023). Wealthy European agribusinesses and Brazilian elites keep gaining political power, while many of those on the frontlines, who may be fighting against pesticides, are being excluded or even criminalised (Bombardi and Changoe, 2022).

Prioritising Profit Over Safety

While Syngenta claim their products can be used safely, there are numerous examples of the drive for profit belittling safety. In 2021, a lawsuit against Syngenta brought hundreds of company documents into the public domain (Gillam and Uteuova, 2022). Within the minutes of a 2001 meeting, we find the company's ambition to sell $1 billion worth of paraquat by 2010 (Lewis, 2024). Documents also reveal how the company knew for decades that the emetic meant to induce vomiting and prevent toxicity of its paraquat product, Gramoxone, did nothing to prevent deaths from poisoning. Yet the company continued to assert it as effective to the public and regulators (DeSmog, 2025).

Talking about suicide is a sensitive topic, and you are encouraged to take steps to look after yourself and skip this section if you need. The reality is that the story of pesticide harms cannot be separated from self-harm, and Syngenta's products are no different.

Every single person has their own story, and there are many different factors that may lead someone to suicide. However, experts believe that highly toxic pesticides have escalated suicide rates because it is easy to take a lethal dose when acting on impulse (Bonvoisin et al., 2020).

When the Green Revolution brought agricultural technologies to small-scale farmers, many were unprepared to manage such extreme toxins. Sometimes they are stored in cupboards in houses or gardens, easily within reach (Public Eye, 2018; Hofmeister et al., 2024).

In the small country of Suriname in South America, most suicides are caused by paraquat. Dr Esther Fong often finds people in hospital come to regret taking paraquat, but there is nothing they can do to stop it. There is still no effective antidote to paraquat poisoning, leaving many to face a slow and inevitable death (Alcorn and Falco, 2025).

Dr Michael Eddleston says that we shouldn't always think of people who take pesticides as wanting to kill themselves. Most of the time, they are trying to communicate (cited in Hofmeister et al., 2024, para 49);

> Self-harm is a method of communication. Someone who is angry, stressed, might think it's the only way of communicating to you and to the community how hurt and injured they are.

Jacinta[6] drank pesticides after a fight with her then-partner. She survived, but lives with lifelong complications. She attests, "if I didn't have access to the pesticide cupboard, I wouldn't have tried to kill myself" (cited in Hofmeister et al., 2024, para 58). At 16, Shashikala died after taking Gramoxone. Her father says that "she only wanted to frighten us. She definitely did not want to die" (cited in Channel 4 News, 2021, 09:19).

Dr Eddleston (cited in Hofmeister et al., 2024, para 60) says that formulations of paraquat and diquat are "far too dangerous" in the contexts where they are sold. If they were less potent, survival could allow for support and communication. Indeed, most suicide attempts are not repeated. Many experts agree that one of the most effective ways to save lives is to restrict pesticide access (Bonvoisin et al., 2020).

[6] Pseudonymised.

An overnight ban on pesticides could be devastating for farmers who have become dependent on them. However, planning and preparedness are proven to be effective at helping farmers switch to organic methods (Davis, 2022). In fact, Sri Lanka and China have implemented bans on many HHPs, and seen 70% and 60% reductions in overall suicide mortality respectively (Alcorn and Falco, 2025).

Figure 3: Drawing of Syngenta's paraquat product, Gramoxone.
Source: own illustration, based on SentraTani, 2025.

Internal documents reveal that Syngenta and their predecessors have long been aware of "the suicide problem" (ICI Agrochemicals, 1988, p.9) related to Gramoxone. Yet, Gramoxone comes packaged in bottles that make it look like a soft drink (see Figure 3). With reports of children swallowing Gramoxone, safety does not appear to be the priority (Channel 4 News, 2021; Alcorn and Falco, 2025). Given this context and how pesticides can foster dependency, it is rather shameful to see Syngenta (cited in Channel 4 News, 2021, 08:58, emphasis added) shirk responsibility;

> Almost all modern innovations like cars, trains or buildings can be used for suicide. Society needs to address mental health, not deprive the world of an important [pesticide] technology which *improves human wellbeing.*

Syngenta crafts "the suicide problem" (ICI Agrochemicals, 1988, p.9) into one where blame is placed on mental health and socioeconomic factors. The role of their own products fades into the background.

Figure 4: A farmer, who was poisoned by pesticides, shows the small leaflet of translated warnings attached to Polo's packaging.
Source: Public Eye, 2018.

Similarly, safety is being undermined in Yavatmal. Polo comes packaged with labels written in English and Hindi – not the Marathi language that locals speak (Public Eye, 2019). Figure 4 shows a small leaflet stuck onto Polo's package, which contains information in Marathi and 11 other languages. The Government of Maharashtra's Special Investigations Team (2017, p.17) concludes that the information is "non-legible" and therefore "cannot be comprehended or followed". This is a direct violation of the requirement for "clear and concise labelling" (FAO and WHO, 2014, p.15) under the Code of Conduct of Pesticide Management.

Other marketing tactics make it difficult for Syngenta's toxic products to be taken off the market. In an interview, one shopkeeper in Bangladesh says (Dewan, 2021, p.122);

> Syngenta sells ten products in bulk. [...]. I would be making a loss if I do not sell the harmful ones from Syngenta.

Syngenta must be aware of the contexts where their pesticides are sold, if only from the numerous NGO reports and civil lawsuits against them (Gillam, 2025b; Rupesh, 2024). Yet decisions have been made to continue to sell dangerous pesticides like Polo under circumstances that exacerbate the risks (ECCHR, 2020). The treadmill turns.

How does Syngenta justify this?

Constructing Narratives

As Baskut Tuncak (cited in Dowler, 2020a, para 26), former UN Special Rapporteur on toxics and human rights, says;

> [HHPs] are unsustainable, cannot be used safely, and should have been phased out of use long ago.

Meanwhile, Syngenta constructs narratives of their products and their actions as sustainable, necessary and benevolent, to gloss over this truth.

'Sustainable'

Syngenta's (2022b, p.46) company documents outline plans for "sustainable operations". In fairness to Syngenta (2025a), their website makes several suggestions for low-input solutions to pest management, including crop rotation and encouraging natural predators. Yet these methods are not explained beyond a passing mention. The priority remains firmly on promoting their products. At no point do Syngenta's (2022b) plans consider the need to reduce pesticides. Nor do they consider addressing soil or water pollution, which would implicate pesticides (Dowler, 2020a).

In fact, Syngenta are vague about what they mean by 'sustainability'. A detailed analysis of Syngenta's pesticide portfolio finds no definition of the term (Gleeson, 2023). This gives Syngenta scope to implement a weak definition, where sustainability is always in synergy with business goals, rather than prioritised (Alexander, 2024).

Syngenta (2024, p.12) are committed to "enhanc[ing] biodiversity". Yet, they have no ambitions to reduce the environmental impacts of their own pesticide products (Gleeson, 2023). They are in partnership with The Nature Conservancy and the World Wide Fund for Nature (WWF), working on plans to improve soil health and habitat protection (Syngenta, 2019; DeSmog, 2025). It appears that Syngenta use the buzz-word of 'sustainability' to ensure business interests are not hampered.

In other attempts to show themselves in a good light, Syngenta (2025c, para 8) argue that pesticides like diquat are "essential tools" for Brazilian farmers practicing no-till agriculture, a farming technique that can capture carbon emissions. In addition, diquat can enable farmers to "precisely time [soybean] harvests" (Syngenta, 2025c, para 9) and maximise productivity. Syngenta therefore claim to increase food security while mitigating climate change (Das, 2024). They monopolise on wider understandings of the need for climate action and food security to try to rationalise diquat.

By presenting themselves as sustainable, Syngenta (2024, p.31) buy themselves, in their own words, a "social license to operate". The tactic is commonly used by oil and gas companies when they tout plans for investing in a green transition to renewable energy, despite these investments paling in comparison to their fossil fuel investments (Tsui, 2023). It is a clear case of greenwashing; a positive spin is used to gloss over the risk of poisoning and environmental hazards and instead make the company seem socially acceptable (Minadakis and Vega-Araújo, 2024).

'Necessary'

By defending their products as "essential" for food security, Syngenta (2025c, para 8) portray pesticide harms as unavoidable necessities rather than transgressions of safety and morality. One of the ways they do this is through scaremongering (Ferguson, 2022). For instance, Syngenta (2022a, p.4) quote Norman Bourlaug, "the father of the Green Revolution" for saying "efforts to ban modern pesticides would doom the world to starvation". Similarly, Syngenta's CEO, Erik Fyrwald, has repeatedly claimed that we need to end organic farming to avoid the risk of food shortages (Howard, 2020; DeSmog, 2025).

While food security is important, it does not follow that widespread synthetic pesticide use is necessary. Experts at the Human Rights Council (2017) report that synthetic pesticides are not needed to feed the world.

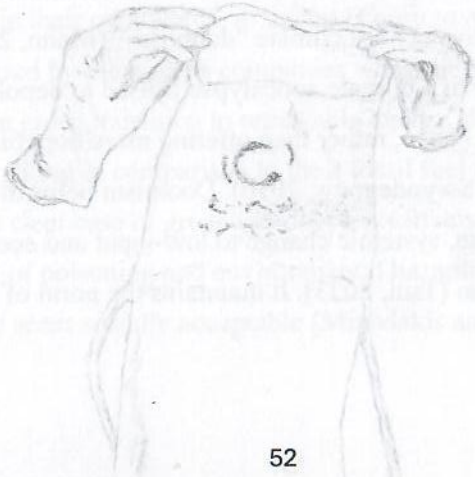
Alternatively, organic initiatives can secure more reliable yields with fewer impacts (FAO, 2016; Delate et al., 2021). Although questions remain about scalability, they offer fruitful alternatives for more sustainable livelihoods (Wilbois and Schmidt, 2019).

Syngenta's tactics seem again to resemble those found in the fossil fuel industry. Their narrative echoes climate "doomism" (Mann, 2021, para 23), where the image of a climate apocalypse is used to depoliticise the narrative of climate change, rather than offering more hopeful – and possible – ways out (Swyndegouw, 2010). Doomism helps to stall climate action and, in this case, systemic change to low-input and ecologically sound food production (Tsui, 2023). It maintains the norm of synthetic pesticides.

'Benevolent'

Syngenta (2023a, p.1) use the tagline, "Helping farmers. Fighting climate change.". This portrays the company as putting their duties towards farmers and the climate at the centre of their business. Other examples include commissioning East Africa's first Crop Protection Development Knowledge Centre in Kenya (Mureithi, 2023; DeSmog, 2025). Syngenta (2019a, p.2) boast providing farmers with "choice" and, since 2014, training "more than 25 million people in the safe use and handling of [their] products".

However, these reports of benevolence overlook how vendors and people caught in the pesticide treadmill are left with little option but to engage with harmful pesticides (Dewan, 2021; Muhsin, 2022). As mentioned previously, the training that Syngenta provide does not appear to be reaching some of the most vulnerable communities in Brazil.



Following the Yavatmal poisonings, Syngenta claimed to have established a mobile health clinic and distributed over 10,000 PPE kits. This was done not out of a sense of needing to make amends, but "because we [Syngenta] care deeply" (Syngenta International, 2018, p.2);

> All of this has been done despite the clear evidence that none of the unfortunate incidents that occurred were the result of the use of Syngenta's Polo insecticide.

Polo continues to be sold in Yavatmal (Todhunter, 2025). Confronted with a lack of state support for ecologically safe reforms, families continue to buy expensive seeds, fertilisers and pesticides (Public Eye, 2019). When Public Eye (2018) visited the community a year after the incident, they found many of the same conditions; people working unprotected and unaware of the dangers. A spokesperson for the farmers reported never having seen a person from Syngenta. It appears that rather than striving to make reparations to those affected, Syngenta are striving to repair their public image through the narrative of benevolence.

Collectively, the narratives they construct portray Syngenta as necessary and ethical in their pesticide conduct, sidelining their contribution to slow violence.

Washing Responsibility

Tied with efforts to portray the company in a positive light, Syngenta attempt to shift the blame off themselves and, sometimes, onto the farmers they claim to care about.

'Safe when…'

In light of recent reporting on diquat and paraquat, it appears that Syngenta (2025c, para 3) are trying a different tack;

> Regarding our own products, Syngenta [recognise] that these can be dangerous if not used in accordance with required protocols and protection, and we place considerable effort into promoting clear direction for use […].

Admitting their products are "dangerous" is a significant change from a company that once asserted Gramoxone to be safe (Gillam, 2025b). Yet their emphasis of safety is merely shifted from the product onto how it is managed. Responsibility is now placed on farmers and authorities.

This shift is yet again reflected in the tactics used by fossil fuel industries and opponents of climate action. Since the weight of evidence of climate change has become irrefutable, most industries are no longer denying climate change but working to delay action by suggesting that their other operations are essential to a smooth transition (Shue, 2023). Here, Syngenta's shift from denial to delay works to postpone a ban on pesticides until proven unsafe.

Syngenta (2019a, p.6) assert that manufacturing banned pesticides like diquat in the UK and Switzerland can ensure "the highest standards of quality, safety and environmental performance". Their logic appears to be that by manufacturing in the Global North, they can mitigate the risks posed to pesticide users. However, diquat is considered too harmful for users regardless of PPE (EFSA, 2018). The risks are often higher in the Global South countries where it is used, since many farmers do not know about the risks and/or have limited access to PPE (Hofmeister et al., 2024). In reality, no matter the quality of the diquat product, it will continue to pose a significant risk to users in all circumstances. So while it is banned in the UK, harms disproportionately impact the Global South, reinforcing colonial dynamics.

Respecting Sovereignty

Regarding how Syngenta (2025c, para 7) view the export of banned chemicals, their stance is clear;

> It is neither exploitative or unethical to provide products where the government and regulatory agencies of the importing country have provided express permission for the import [...].
>
> Syngenta [respect] the sovereignty [...] of the importing country, meets all the international regulatory requirements including Prior Informed Consent and provides stewardship and detailed information in country to promote the safe application by end users.

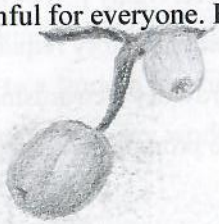
Syngenta rest their entire ethical narrative on adherence to Prior Informed Consent (PIC). Outlined in the Rotterdam Convention (2023), PIC regulations allow HHPs to be exported so long as recipient countries provide informed consent before export. This is how the UK allows pesticides banned domestically to be shipped abroad (Parliamentary Office of Science and Technology, 2021).

At first glance, this approach seems respectful. As Lebanese activist Dr Vardah[7] (cited in Muhsin, 2022, para 51) highlights;

> We are in dire need to preserve food security; we need to even cultivate any piece of land because the cost of import has become high due to the economic crisis.

In this context, it is understandable why ecological and human health may not be considered the priority (Muhsin, 2022). To provide for your needs, you may have to take greater risks.

Nonetheless, this does not clear Syngenta of their responsibility to ensure the products they provide are safe. If a pesticide is too harmful for people in Europe, it is too harmful for everyone. Period.

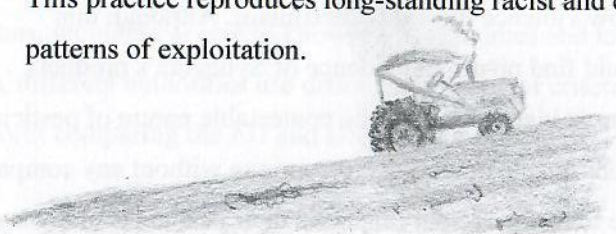


[7] Pseudonymised.

This is even more important when considering that the risk of harm is higher for most outside Europe, where regulations and awareness of pesticide hazards are less thorough. The pesticide division of Suriname's Agriculture Ministry has just four staff members (Alcorn and Falco, 2025). Many parts of Africa have weak protective measures and as we saw in Yavatmal and Brazil, PPE is not always used (Public Eye, 2018; Public Eye, 2019; PAN Europe, 2023). By putting the onus on pesticide handlers and authorities, Syngenta dismiss the low capacity that many authorities in the Global South face (Dowler and Hofmeister, 2024).

When Syngenta insist that they respect a country's sovereignty, they wash themselves of responsibility and exploit lax regulations to make a market for products that are banned elsewhere, like paraquat (Nasike, 2023; Dowler and Hofmeister, 2024). Their operations appear to be a race to the bottom, seeking to make profit regardless of safety concerns (Latimer, 2021). Syngenta perpetuate slow violence by exploiting the world economic order (Kendi, 2023). As the UN Special Rapporteur on Toxics and Human Rights, Marcos Orellana (2023, p.7), states;

> This practice reproduces long-standing racist and colonial patterns of exploitation.



There is likewise little oversight in Palestine, with only 14 inspectors to cover the entire West Bank (Taweel and Elsobky, 2024). In 2020, it was reported that amid ongoing illegal Israeli settlements and ethnic cleansing of Palestinians, only the crops that enter Israel get checked (Human Rights Watch, 2020; Taweel, 2020). This leads to unregulated and chaotic pesticide applications, with the effects disproportionately accumulating and contributing to the slow death of Palestinian people (Taweel, 2020). It clearly demonstrates how ecocide can be concentrated to certain geographic locations, so that environmental health crises disproportionately impact certain groups in racial sacrifice zones (Achiume, 2022; Badri, 2024).

Nevertheless, this investigation found no documents exploring how pesticide use may have changed since the escalation of forced displacement, killing and starvation by Israeli forces since October 7th 2023 (United Nations Relief and Works Agency for Palestine Refugees in the Near East, 2025). It raises questions as to how slow violence may shift or morph into more overt violence during heightened conflict. It also recognises how the current violence against Palestinians is the latest stage in a genocide spanning decades (Human Rights Watch, 2020).

Syngenta export toxic substances like bromopropylate (Lewis et al., 2016) that enter Palestine (Taweel, 2020). The company may thus be complicit in facilitating slow violence towards Palestinians. Although this investigation could find no direct evidence of Syngenta's products entering Palestine, it highlights how the contestable nature of pesticides and lax regulations enable operations to continue without any company held accountable to the genocidal functions their pesticides may play.

Risk v. Hazard

Another way Syngenta (2019a) try to evade responsibility is by pointing to the difference between hazard and risk. A hazard is the potential of a substance to cause harm, whereas a level of risk is the likelihood of the hazard to cause harm and to what extent (Parliamentary Office of Science and Technology, 2021). For instance, driving a car is inherently hazardous. Wearing a seatbelt reduces the risk of harm. When Syngenta (2025c, para 3) acknowledge their pesticides are "dangerous", they attempt to claim that despite being hazardous, safe handling and correct PPE can reduce the risks. Consequently, Syngenta (2019a) claim not to recognise PAN's (2021) list of HHPs by saying that many of those listed can be handled with low risk.

Yet as we have seen, the hazards of Syngenta's pesticides are not always known, especially for nonhuman beings (Howard, 2020). Regulation is often slow to catch up, with evidence of the harms of paraquat coming to light decades after it was commercialised (DeSmog, 2025). Meanwhile, companies like Syngenta have significant investments in research and lobby groups. With this influence, we can wonder what level of risk authorities are willing to take.

If there is evidence a substance may be hazardous, it would make sense for authorities to regulate it. There are many factors influencing these decisions, including access to knowledge, resources and lobbying. On top of this, different authorities use different assessment criteria. To illustrate, it is worth comparing the EU and US (see Box 4).

Box 4: Regulation in the EU v. US

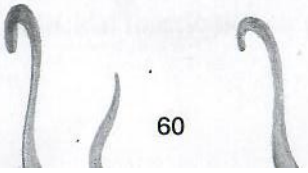
The EU uses a hazard-based approach, meaning that substances are regulated based on their *potential* to cause harm. By contrast, the US follows a risk-based approach, meaning that even if a substance *is* highly hazardous and capable of causing harm, decisions about whether or not it is approved depend on whether measures can be put in place to reduce the risk (Mansfield et al., 2023). For this reason, the US permits paraquat, a pesticide banned in the EU, but only for use among trained and certified applicators with strict aerial buffer zones (EPA, 2025a).

Brazil has recently switched towards a risk-based approach, under legislation pushed by the agribusiness caucus (Schröder, 2024). Currently, the UK operates the same hazard-based approach that it adopted under the EU, but it is unclear whether this will be maintained now that the UK has left the EU (Parliamentary Office of Science and Technology, 2021).

The move to a risk-based approach should raise alarm bells. Suely Araújo (cited in Schröder, 2024, para 13) from the Climate Observatory in Brazil says;

> We have lost the express ban on substances that are carcinogenic, mutagenic, teratogenic, cause hormonal disorders and impact the environment. Now, the basis is risk analysis, an acceptable risk. But what is acceptable or not when it comes to cancer risk? It's a huge defeat.

Regulation is now a matter of who is affected, by how much, and how much gets seen.



Playing with the Law

Syngenta are not afraid to oppose regulations. This is seen in lobbying, silencing opposition, and even violations of the law.

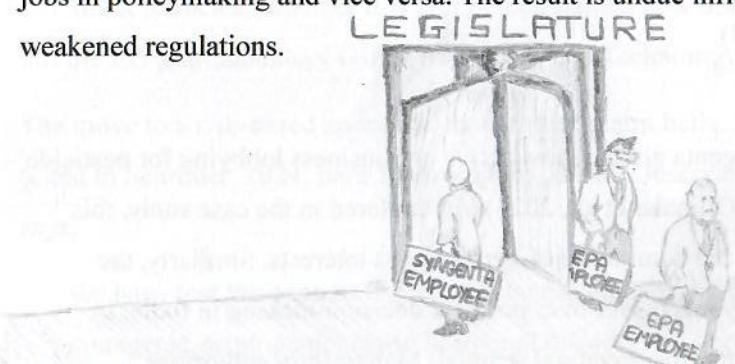
Lobbying

On the international stage, Syngenta have major influence. At the COP16 UN Biodiversity Talks, Syngenta had privileged access to negotiations, turning up as part of Switzerland's delegation. Their interests were also represented in Brazil's delegation by two CropLife members. Such "unprecedented corporate lobbying" (Lambrechts, cited in Sherrington et al., 2024, para 3) at COP16 crowded out voices from independent scientists and Indigenous groups, and was criticised for stalling progress (Weston, 2024).

In Brazil, Syngenta are the most active agribusiness lobbying for pesticide deregulation (Ollinaho et al., 2023). As explored in the case study, this contributes to the dominance of agribusiness interests. Similarly, the pesticide lobby has power over political decision-making in India. In 2018, a year after the Yavatmal scandal, Maharashtra authorities requested the national government put a permanent ban on diafenthiuron, the active ingredient of Polo. However, this ban never came to force. It is alleged that close ties between industry and the Government protected it from regulation (Public Eye, 2018).

The same pattern is reflected in the US. Five Lobbying Reports between 2018-2019 revealed that Syngenta (2018c; 2018d; 2018e; 2019b; 2019c) spent between $310,000-$460,000 each quarter on US Government bodies like the EPA. Though tiny for a TNC, the figures demonstrate a significant ability to influence policymaking beyond what can be imagined by most activists (Syngenta 2018d). It is possible that Syngenta's lobbying expenses are higher in other countries. However, the data are limited to countries like the US that require transparency over lobbying expenditure.

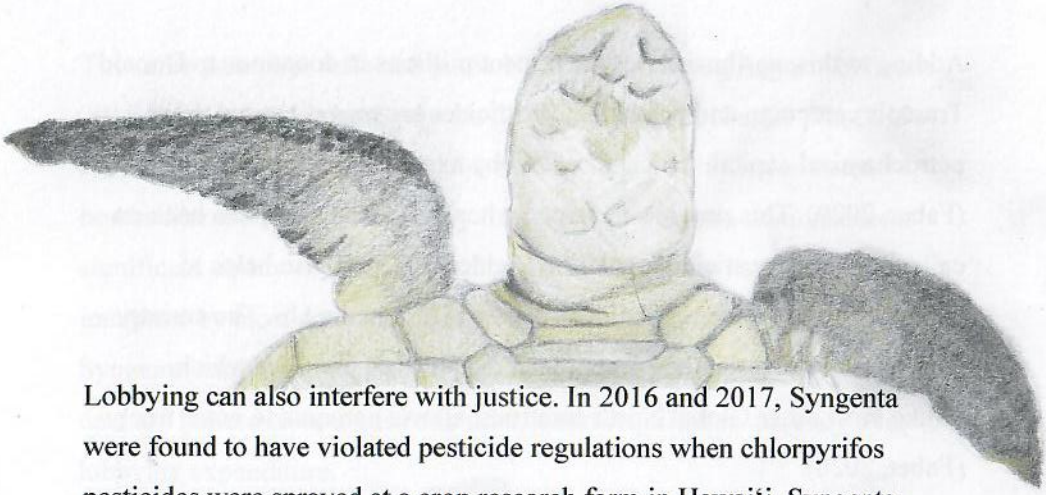
Syngenta are not alone in building up a close relationship with the EPA in the US. Critics say there is a "revolving door" (Perkins, 2021, para 2) between industry and the EPA, where people from major corporations get jobs in policymaking and vice versa. The result is undue influence and weakened regulations.



Internal documents reveal that Syngenta's law firm hired a retired top EPA official, Jack Housenger, to help defend them in a court case. For $300 an hour, Housenger agreed to act as an expert witness in a case brought by US farmers alleging that Syngenta's paraquat product caused their Parkinson's. In a report, Housenger claimed that the EPA found "insufficient evidence" (cited in Gillam, 2023, para 70) of a relationship between paraquat and the disease.

Adding to this, agribusinesses have spent millions in donations to Donald Trump's campaign and presidency. Pesticides are manufactured using petrochemical capital, which is backed by a huge lobby group in the US (Faber, 2020). This provides leverage when agribusinesses push back on calls for greater pesticide regulation (Felder, 2025). It also helps to explain why pesticide regulation is less stringent in the US. The country continues to use a risk-based approach to approve pesticides which, unlike most other Global North countries, allows paraquat to enter freely (Faber, 2020).

Even in Europe, Syngenta have used their lobbying power to come between the European Commission and scientific advice. For instance, Syngenta has repeatedly questioned EFSA's assessment of diquat, pushing the Commission to withdraw twice from a proposal to ban diquat. EFSA stood by their findings and accuse Syngenta of seeking to undermine their credibility (Politico, 2018). While diquat is now banned in the EU, the delay in its regulation exemplifies how Syngenta's lobbying works to surpass the EU's strict hazard-based approach and maintain a favourable regulatory environment for as long as possible (Health and Safety Executive, 2025).

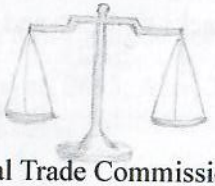


Lobbying can also interfere with justice. In 2016 and 2017, Syngenta were found to have violated pesticide regulations when chlorpyrifos pesticides were sprayed at a crop research farm in Hawai'i. Syngenta failed to warn its workers and allowed them to enter without protection or adequate decontamination supplies. The EPA initially proposed a fine of $4.9 million and Syngenta came close to resolving the case. That is until the 2016 US election, when Syngenta allegedly held back, figuring they could pay less under the Trump administration. In the end, critics blamed the EPA for letting Syngenta get off with a miniscule $150,000 settlement in 2018; nine times smaller than the original sum (McAvoy, 2018).

In these ways, Syngenta use lobbying to manipulate the limits of the law for financial gain (Schölin et al., 2025).

Violating the Law

In addition to manipulating the law, Syngenta are caught up in several cases of allegedly breaking the law. In the US, over 8,000 plaintiffs are seeking damages over Syngenta for not disclosing the risk of Parkinson's disease brought by paraquat (Lewis, 2024; Gillam, 2025b). Two widows and a survivor of the Yavatmal poisonings claim that Syngenta violated their right to life by selling a hazardous pesticide, Polo, with neither an antidote nor legible labelling (Arya, 2020). In Canada, beekeepers allege Syngenta were negligent in concealing knowledge of the harms of their pesticides towards bees (Syngenta, 2025c). In their defence, Syngenta (2018b; 2025a) continue to deny responsibility for the Yavatmal poisonings and claim the cases in Canada and the US are without merit.



Ten US states and the Federal Trade Commission (2024) are filing a case against Syngenta and Corteva, another agribusiness, against their so-called "loyalty programs" (para 2). The claimants allege that the agribusinesses paid distributors to not sell the products of their competitors. This violates trade laws and inflates prices for farmers (Stroka, 2022). If found guilty, the case would provide another example of Syngenta prioritising profit over the interests of others, especially farmers.

These ongoing cases are playing out against the backdrop of Syngenta evading the law in plain sight. In the early 2000s, Syngenta were found to be illegally growing and testing GM soybeans within the Iguaçu National Park in Brazil (Kenfield, 2008). Syngenta were fined about US$250,000 by IBAMA, Brazil's environment agency (Petry, 2018).

Tensions exacerbated when Valmir "Keno" Mota de Oliveira, an activist protesting against Syngenta's illegal experimentation, was murdered. Syngenta were found guilty of his murder by hiring a private security company that carried out attacks on Keno and several other activists (Friends of the MST, 2025).

Initially, Syngenta acted with impunity for Keno's murder. However they were met with persistent demands for justice from La Vía Campesina, and the court refused Syngenta's appeal. While Syngenta yield significant political and financial power, the moment is a clear reminder to us all of the power of people to realise justice and ensure those responsible are held to account (Petry, 2018).

Silencing Researchers

To keep regulations favourable, Syngenta take action to silence dissent. Dr Tyrone Hayes is a researcher initially hired by Novartis, a predecessor of Syngenta, to investigate the effects of atrazine (Hayes, 2013). He found that atrazine could change male frogs into functional females and is linked to cancer (DeSmog, 2025). The proposed mechanism is seen in Figure 4. Hayes (2018) also points out that Novartis' sister company at the time, Novartis Oncology, manufactured letrozole. This is a drug used in the treatment of breast cancer. So while Novartis executives were making money from selling a pesticide linked to cancer, their pockets were also being lined with money gained from a drug treating cancer.

After publishing in a prestigious scientific journal, Syngenta attacked Hayes' study and launched a multi-million dollar campaign against him and other atrazine critics (Hayes, 2013; Aviv, 2014; Rohr, 2021).

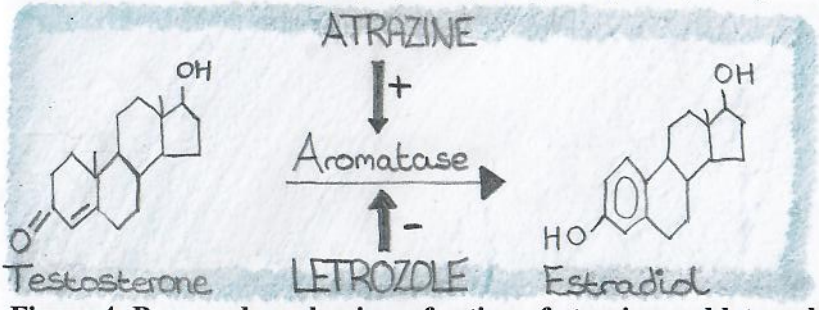


Figure 4: Proposed mechanism of action of atrazine and letrozole. Source: Hayes, 2018. Atrazine stimulates the enzyme aromatase to convert testosterone into estradiol (oestrogen) (Wirbisky et al., 2016). Evidence of its impact on cancer and reproduction are mixed, but atrazine is nonetheless an endocrine disruptor (Arabi et al., 2025). Letrozole acts in opposition to atrazine. As a treatment for breast cancer, it knocks out aromatase, reducing conversion of testosterone to estradiol (Hayes, 2018).

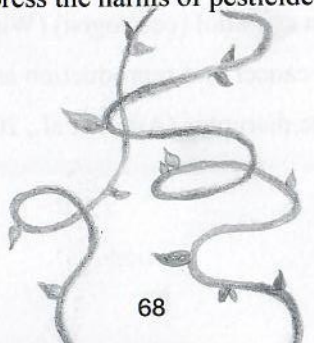
Similarly, Dr Deborah Cory-Slechta was a prominent scientist in the early 2000s. Her research found strong evidence linking paraquat and Parkinson's disease (Gillam and Uteuova, 2022). At this time, she was also being considered for a role on the EPA's advisory panel. Syngenta got wind of this and asked a regulatory policy expert at CropLife America to disparage Cory-Slechta's work in communications to the EPA. A Syngenta regulatory affairs executive, Greg Watson (2005), wrote to the CropLife policy expert;

> I would ask that you handle our comments with care & in such a way that they cannot be attributed to Syngenta.

Cory-Slechta was not selected for the panel. Though a scientist supported by CropLife was (Gillam and Uteuova, 2022).

Another key figure is Larissa Bombardi (2023). In 2019, she published a report showing data on Brazil's pesticide sector that refuted claims of safe practices and effective regulation (Schröder, 2024). After repeated threats, Bombardi was forced to seek exile in Belgium (Gabay, 2023).

To my awareness, Syngenta has neither spoken publicly about Bombardi's case, nor been directly involved in the threats. Given Syngenta's political power and dominance of the pesticide market in Brazil, their silent complicity helps to suppress the harms of pesticides and delay regulation (Rohr, 2021).



Silencing the Most Marginalised

One of the most disturbing angles of pesticide harms is how they silence the people speaking out. Or at least, blocks their calls from our ears. When pesticides, GM crops, industrial agriculture and physical violence drive out nature and people who live on the land, they violently drive out criticism (Bombardi, 2023). Sometimes people become too unwell to speak out. Under the more pressing need of having to provide for the family, some have neither the time nor resources to speak out. This is especially true when power acts against their political representation.

Attempts to silence those affected are seen in the US. Just as the paraquat court case was about to go to trial, Syngenta agreed to a $187.5 million settlement with the plaintiffs who claim paraquat caused their Parkinson's. Details of the settlement have been kept confidential, though many of the plaintiffs' lawyers have said the settlement is very specific about who can claim financial damages, and that it is unfair for many with Parkinson's (Gillam, 2025a).

We also see silencing in Yavatmal and Brazil, where industrial agriculture goes hand in hand with efforts to politically undermine the most marginalised human and nonhuman beings (Arya, 2020; Schröder, 2024). From the Guarani-Kaiowá, to people in Nodi, to peasant communities practicing agroecology and countless more at the forefront of this ecocide; it is not just people and culture that is being lost, but entire ways of seeing, respecting and co-habiting the world.

In Brazil, demand for treatment from poisoned individuals is low due to fear of reprisals from employers and loss of work (Dowler and Hofmeister, 2024). Particularly in Mato Grosso, where the state is largely run by business and industry, few people talk about the risk of diseases like cancer (Gabay, 2023; Fernandes, 2025).

Nevertheless, some do speak out. As Larissa Bombardi (2023, [no page]) urges us, we should listen to persecuted cultures and "understand why [their] knowledge accumulated over centuries is the only hope of saving ourselves from capitalism". One biologist who refuses to be silenced says (cited in Public Eye, 2019, para 79);

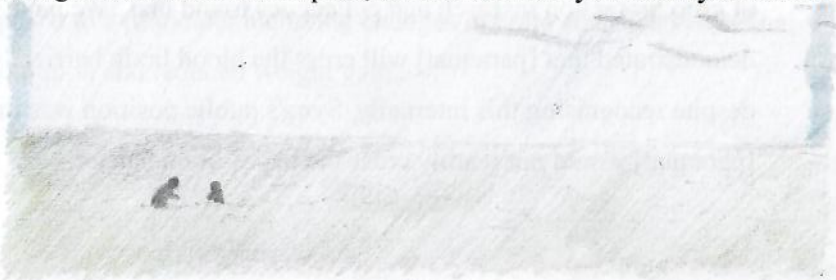
> We see that the number of these cases is rising with the increasing use of pesticides [...] even though here you can be shot for [debating] something like that.

At this point, I feel a need to reflect on the difficulties that arise in investigative research. Limited testimony makes it uncertain where truth lies, and it is hard to corroborate accounts.

However, the few testimonies we hear from Mato Grasso align with our understanding of pesticides as health risks (Garud et al., 2024). Alleged harms corroborate with broader accounts of silencing from Indigenous Peoples and landless workers (Public Eye, 2019; Friends of the MST, 2025). To dismiss these accounts for not having 'evidence' is unjust. When undertaking investigative work, some degree of scepticism is valid. Yet the findings should also raise scepticism about Syngenta's narrative of being safe.

Resigned activism and silence can be necessary when facing immediate threats and coping with pervasive toxic substances (Davies, 2018). If we are to commit to decolonising our learning, we need to give serious attention to the truths of marginalised communities in Mato Grosso and beyond (Sundberg, 2014; Todd, 2016; Urt, 2016). Otherwise, silencing can play a function. It may keep slow violence unobserved by those with more political power, like us in the UK, so that we keep the status quo.

Perhaps the issue is not so much one of silencing. In many ways, the world is screaming. It may not be that nature is silent – but that we are not listening. In a commodified space, no-one can hear you when you scream.



Playing with Truth

By silencing opposition to our ears, Syngenta buy time to construct their own narratives of being sustainable, necessary and benevolent. They supplement these tactics by hiding and manipulating truths. There are already articles discussing Syngenta's cover-up of the links between paraquat and Parkinson's disease, so I only briefly mention them here (Gillam and Uteuova, 2022). However, more detail can be found in the suggestions for further readings at the end of the zine.

Hiding the Truth

In the early 2000s, Syngenta scientist Louise Marks ([no date]) found a statistically significant loss of dopamine in the brain among mice exposed to paraquat. However, Syngenta only told the EPA of Marks' study after a lawyer suing Syngenta on behalf of people with Parkinson's threatened to send the evidence himself in 2019 (Gillam and Uteuova, 2022).

The following transcript is from an out-of-court testimony given by Syngenta employee, Philip Botham. Though he denies it, Botham's (2020, p.1070) testimony shows that public messaging was misleading and the company knew of the risk between paraquat and Parkinson's;

> Q: An internal study, documented in 2007, conducted by the head of crop protection research and colleagues found that "We have demonstrated that [paraquat] will cross the blood brain barrier" -- despite recognising this internally, Syng's public position was that [paraquat] would not readily cross the blood-brain barrier.

A: Yes [...] the public commentary at that time had not caught up with the science that had been done.

Q: And that's a very polite way of saying that you weren't telling the people on the Website what you knew scientifically about the chemical [paraquat], correct? You weren't actually Reporting it?

A: No, I wouldn't put it that way. It's not that -- it wasn't a case that we weren't telling them. I think the process for updating that was not necessarily at that time working as quickly as perhaps it should have done.

Internal documents corroborate this and reveal that the company put heavy resources into protecting its paraquat revenue stream. Corporate defence lawyer, Jeffrey Wolff, was hired by Syngenta and involved in editing their scientific publications. He advised Syngenta's scientists to ensure all internal communications included the phrase "attorney-client privilege" (Wolff, cited in Gillam, 2023, para 46). This would allow information to be kept from the public in the event of litigation.

This hiding of the truth was not an isolated incident, with Syngenta and Bayer withholding nine neurotoxicity studies from the EU for some of their products. That is until two Swedish academics found and submitted them to authorities (Carrington, 2023a; 2023b; Mie and Rudén, 2023). The studies demonstrated impacts on the offspring of pregnant rats exposed to a pesticide, including changes in brain size, delayed sexual maturation and reduced weight gain.

Dr Alexandra Brand (cited in Carrington, 2023a, para 15) from Syngenta says;

> We did not submit [the neurotoxicity studies] at the time to EU regulators because they were not mandatory. We determined they did not provide any new information. Our company complies with the rules. We have nothing to hide.

Syngenta insist that they are fully compliant. Although, transparency is not the same as compliance. Transparency requires companies sharing all they know about a product's safety, whereas compliance depends on authorities knowing what to ask for and companies supplying it. If either are skewed by other priorities when compliance is the minimum, health and safety may take a backseat (Paunov et al., 2019).

Constructing the Truth

While Syngenta decide what knowledge is shared, they actively shape what is studied, ignored and, ultimately, what is considered 'true'.

Science operates under the assumption that there is a truth 'out there', and that valid experiments can provide us with the truth (Karupiah, 2022). However, this investigation found that studies financed by Syngenta often take a narrow focus, which shift the blame away from pesticides.

Through the 1990s and 2000s, Syngenta conducted research on paraquat– but there was a catch. According to an internal presentation, Syngenta's science team ([no date], p.5);

> Avoided measuring PQ [paraquat] levels in the brain, since the detection of any PQ in the brain (no matter how small) will not be perceived externally in a positive light.

Syngenta were not so much as hiding the truth as actively suppressing any chance of discovering it. In this shady space, their own image of being safe could prevail.

In one example demonstrating a rare concern for the environment, Syngenta funded a literature review to identify the most significant factors impacting fish and mammal densities (Accolla et al., 2024). They found that most studies attribute reductions to food and space limitations. Not once did the authors note that food and space limitations may result from pesticide use (Zaller, 2020).

In another study funded by Syngenta, researchers collected feedback from farmers trialling out a new seed product in Zambia (Chanda et al., 2021). The seed, developed by Syngenta, was coated in a pesticide to try and control the fall armyworm pest. While the researchers claimed to be interested in how farmers evaluated the seed, the study paid little interest to environmental impacts. Effects on biodiversity were not directly measured, relying instead on proxy evaluations given by farmers. Questions focused on the environmental "suitability" (p.3) of the seed, rather than prompting more open discussions about observed effects.

It seems that the researchers were more concerned with proving the seed to be economically viable than assessing its true impact.

Syngenta employees have also co-authored studies informing how chemicals are regulated in countries like Brazil and the US (Mackay et al., 2022; Vliet et al., 2023). This gives Syngenta a direct role in shaping the frameworks used to assess their own products.

In one example, Dr Jonathan Rooney from Syngenta collaborated in a study contributing to the EPA's Endocrine Disruptor Screening Program (Vliet et al., 2023). While the study did consider impacts on non-target organisms like fish and birds, every organism was viewed in isolation, and so too was every pesticide. This means that the Screening Program could overlook how chemicals interact in the real world and knock-on effects down the food chain. If Syngenta are able to push for more studies like this, a strategic ignorance may grow in our regulatory frameworks and allow violence to the nonhuman world – which is indeed our world – to simply go unrecognised (Arcuri and Hendlin 2019).

Responsibility for strategic ignorance lies with all those involved in the Screening Program, not just Syngenta. Yet combined with Syngenta's motive for profit and lobbying from the pesticide industry, their influence over the narrative of truth is alarming. Syngenta and its contemporaries appear to have "regulatory capture" (Khoury, 2018, p.181) over the authorities responsible for regulation. This helps to explain why dangerous pesticides continue to be approved in spite of opposition in Brazil. At the same time, it highlights goliath inequality between Syngenta and the farmers, rural communities, Indigenous Peoples and nonhuman beings who are most exposed (EJF, 2020).

In fairness to Syngenta, they agree that connecting habitats and reintroducing species is important for sustainability. They say (Syngenta, 2019a, p.5);

> A key strategy to reverse the loss of species is managing less-productive farmland [to allow] sustainable intensification on more productive land.

Yet Syngenta talk about biodiversity as if a loss in one location can be made up elsewhere (Arcuri and Hendlin, 2019). As if 'biodiversity' is dispensable and can be traded, like stocks and shares in the market. As if the life of one can be replaced by another, when we know that life is all too fickle. It is the equivalent of saying we can plough through all of Scotland and make up for it in Wales. Once something is gone, it is gone, and we can never recreate the intricate web of connections, heights, depths and beauty that is lost from a single spot on Earth.

Current developments in biotechnology bring these concerns about truth to the fore. Agribusinesses are in the process of developing a new type of pesticide, called an RNA interference (RNAi) pesticide, which works by a unique mechanism (Lightfoot, 2022).

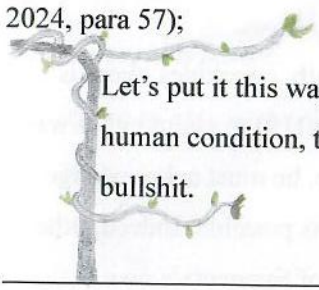
After pesticides are sprayed, a nearby pest may ingest some of the active compound. RNAi pesticides contains genetic material that can enter the pest's own cells and silence genes in its DNA essential to survival. Without these genes functioning, the pest dies (Dickman, 2019).

Syngenta claim RNAi pesticides have fewer impacts. This is because the possibility of targeting specific genes only found in the pest could mean more beneficial organisms go unharmed (Lightfoot, 2022). At present, there are no regulatory frameworks for RNAi pesticides, but the technology is developing so fast that "open-air experiment[s]" (Friends of the Earth, 2020, para 4) are underway. Even EPA scientists admit that "knowledge gaps make it difficult to predict [the impact]" (EPA, 2014, p.22). Despite all this uncertainty, RNAi pesticides are already being submitted for approval (EPA, 2025a).

Selecting the Truth

Amid the accusations, court hearings and clear examples of violence, Syngenta try to hold their ground. They stress that there is "absolutely no evidence" (Syngenta, 2018b, p.1) of their pesticide, Polo, being involved in the Yavatmal poisonings and claim that the media is "overstating the science" (cited in Dowler, 2020a, para 39) of insect declines. Here we find that while Syngenta choose which studies to publish and fund, they also pick and choose the studies they believe in.

Despite mice studies[8] showing that paraquat can impact brain development, Syngenta rejects that impacts observed in mice have any relevance to humans (Gillam, 2025b). Professor Shawn Hayley, who has also investigated paraquat in mice, gives a clear reminder (cited in Lewis, 2024, para 57);



> Let's put it this way, if mice and rats were not relevant for the human condition, then all of our biomedical science would be bullshit.

[8] Testing products on laboratory animals raises its own set of ethical concerns, not least because it reflects an idea that we can subject those who have been Othered to conditions considered unethical among ourselves (Chakrabarti, 2010). Yet it would be a disservice to their existence to ignore what previous animal studies have shown. So, I have mentioned them here in spite of my concerns.

In a recent video entitled "There is no causative link, at all, between Paraquat exposure and Parkinson's disease", Philip Botham appears again to defend Syngenta (2023b). He asserts that no peer-reviewed, scientific analysis has ever concluded that paraquat causes Parkinson's. He cites a number of studies, and even points to a report co-authored by Cory-Slechta, among others (Bronstein et al., 2009). It concludes there is insufficient evidence to say that there is an association between paraquat and Parkinson's.

Now, we cannot say with certainty that paraquat *causes* Parkinson's – the term 'causation' is often only used in science when every other possible cause has been controlled for in an experiment. This is not easy for such a complex disease as Parkinson's. However, this uncertainty does not mean that there is no evidence.

As the report co-authored by Cory-Slechta actually concludes, there is "insufficient evidence" (Bronstein et al., 2009, p.119) to claim either way. If Botham is to include this report in his defence, he must acknowledge that even though causation is not proven, a link is possible. Indeed, other studies point to this possibility, including some of Syngenta's own. Therefore, a responsible person would be open to the possibility of a link to Parkinson's, and take precautions until sufficient evidence can either prove or disprove causation (Bombardi, 2022). Instead, it seems that Syngenta are willing to turn away from this need, and hide openly in their ignorance.

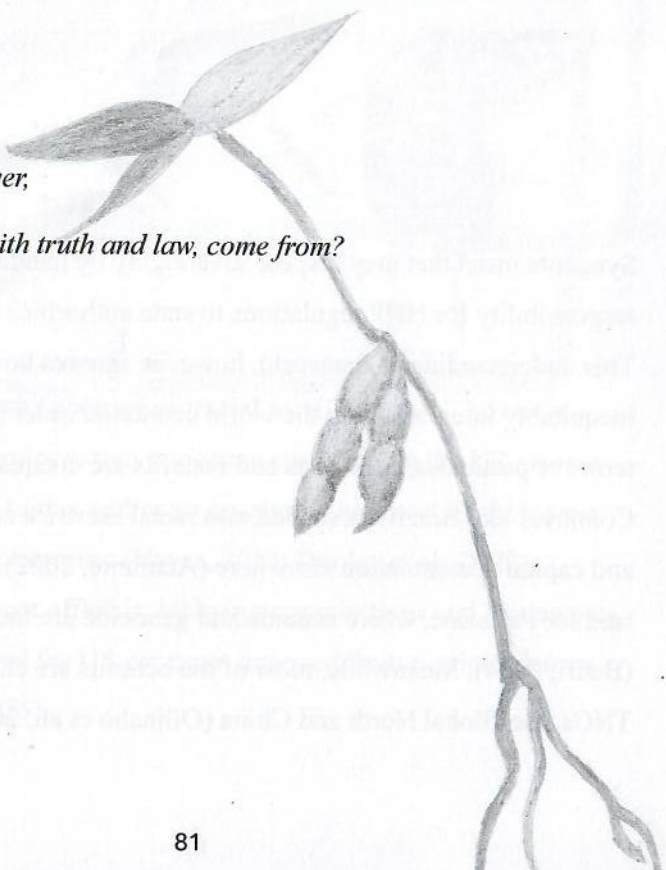
Realities on the ground make it clear that it would be wise to take pesticide precautions. In Mato Grosso, a doctor reports a sharp rise in children born with spina bifida in recent years. He admits that every particular case has its own set of possible causes, (cited in Public Eye, 2019, para 20);

> [B]ut if there is almost always a link to pesticides – that says something, doesn't it?

Syngenta's actions obscure the truth. Through hiding, constructing and selecting evidence to suits their interests, Syngenta are heavily invested in maintaining favourable regulations for products that perpetuate slow violent.

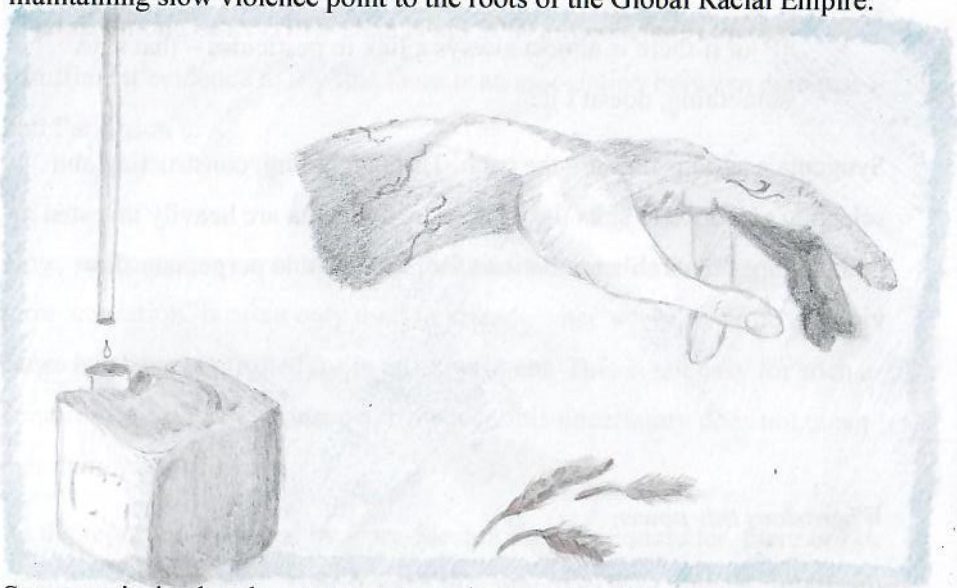
Where does this power,

this ability to play with truth and law, come from?



The Global Racial Empire

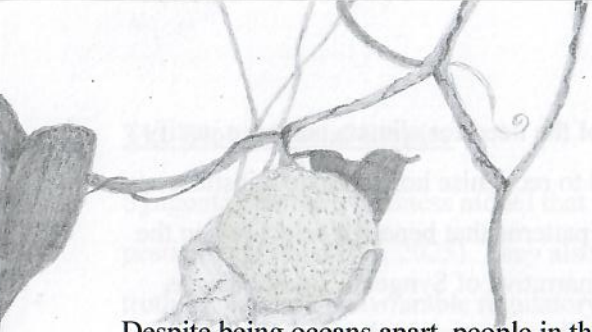
Syngenta operate a business model that makes profit from harmful pesticides (Public Eye, 2025). They also play with narratives, law and truth to maintain a favourable regulatory environment. These examples of maintaining slow violence point to the roots of the Global Racial Empire.



Syngenta insist that they respect sovereignty by handing over responsibility for HHP regulations to state authorities (Syngenta, 2025c). This understanding of the world, however, ignores how nation-states are inequitably integrated into the world economic order (Kendi, 2023). In terms of pesticides, the harms and benefits are unequally distributed. Countries like Brazil are shaped into racial sacrifice zones for resource and capital accumulation elsewhere (Achiume, 2022). The same can be said for Palestine, where ecocide and genocide are inextricably linked (Badri, 2024). Meanwhile, most of the benefits are channelled towards TNCs, the Global North and China (Ollinaho et al., 2023).

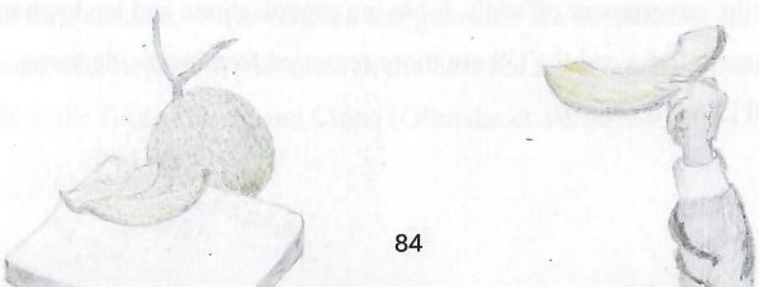
Syngenta exploits understandings of the need for climate action to justify diquat in Brazil. However, they fail to recognise how climate injustices are rooted in unequal consumption patterns that benefit a select few in the Global North (Sultana, 2023). The narrative of Syngenta's pesticides as 'sustainable' appeases the need for climate action in the Global North, while racial sacrifice zones bear the burden of harms from pesticides banned in China and the Global North. The tactics remind us of the fossil fuel industry, whose vigilant control of the narrative helps to maintain the status quo and suppress environmental justice (Tsui, 2023). In these ways, the findings show us how agribusinesses can contribute to colonialism not only through seed patents, but also pesticide exports (Shiva, 2016).

Labelling Global South countries as 'racial sacrifice zones', however, obscures power dynamics within importing countries. In the US, people who are Black, poor, Latinx and/or an immigrant are most likely to bear the brunt of pesticide exposure (Hayes, 2018; Donley et al., 2022). Meanwhile, government officials, lobbying organisations and landowners across Brazil, India and the US are more removed from pesticide harms (Cox and London, 2025).



Despite being oceans apart, people in the EU and UK are not immune. The study behind this zine focused more on the impact of pesticides at the point of application. However, pesticide residues on our food and agricultural imports can impact our own health (PAN UK, 2017). At the same time, demand for pesticide-dependent produce continues to offshore the worst harms to the countries where our food is grown (Landworkers' Alliance, 2022). And as environments degrade, through the blind assertion that we will be safe in our own corner of the world, so too are we degrading.

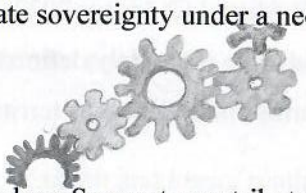
Returning to the Bengali concepts of *shakti* and *bhejal* remind us that the commodification of humans and the environment will assure the destruction of both (Dewan, 2021). An 80 year-old farmer in Bangladesh points to the rise in organ failures, the loss of traditions and environmental damage, suggesting that a divine force will drown humans as punishment for our sins of technical hubris and greed (Dewan, 2021). As evidence of pesticide poisonings and climate disasters slowly creep into modern science, perhaps it would be wise to hear more of his thoughts and open up to Indigenous wisdom.



The world economic order is violent to Indigenous sovereignty. Syngenta's complicity to this is seen in its own products being used in illegal sprays that displace Indigenous Peoples and marginalised communities (Urt, 2016). This occurs all while Syngenta support the agribusiness caucus. Wealthy European corporations like Syngenta are gaining political power in Brazil while people fighting pesticides are excluded (Bombardi and Changoe, 2022; DeSmog, 2024). Sacrifice zones may therefore be more accurately defined at the scale of exposed communities, farms and Indigenous territories across the Global Racial Empire.

Racial sacrifice zones also describe the beings, species and ecosystems exposed to drip ecocide, especially where the extent of harm is unknown (de Nardin Budó and Garcia, 2025). Even when biodiversity and the need for ecosystem services are acknowledged by Syngenta, they remain of secondary importance to profit (Alexander, 2024). The company plays into the Globa Racial Empire, making use of colonial hierarchies and logics of Othering (Táíwò, 2022).

Syngenta are both active and passive in perpetuating sacrifice zones of slow violence. Davies (2018, p.1540) says that slow violence is characterised by acts that "let die". However, we have seen how the distinction between making and letting someone die is not so clear cut. When Syngenta lobby governments or manipulate truths, they actively foster slow violence. By contrast, when they fail to take pesticides like Polo off the market or ensure accessible PPE, Syngenta permit harm (ECCHR, 2020). Therefore, Syngenta maintain slow violence both actively and passively by employing the norms, institutions and rules of the Global Racial Empire – Syngenta embrace the agribusiness model and the false assumption of nation-state sovereignty under a neoliberal capitalist system (Shiva, 2016).



Despite all this evidence showing how Syngenta contribute to the Global Racial Empire by maintaining slow violence, they are just one cog in the world economic order. As Syngenta (2025c) say, if they did not provide pesticides to countries in the Global South, somebody else would. Their actions are legitimised by policies that allow banned chemicals to be exported, as well as our own desires for an over-abundance of food and the elimination of 'pests'. These areas need to be addressed and do not excuse Syngenta of their own complicity.

Syngenta appear to assume that neoliberal capitalism and colonial logics are objective – how things are and always will be – forever pushing individuals to prioritise profit over safety and play with truth and law. So they have to stay ahead of the game.

Just as cosmologies and religions shape what we believe to be true, so does the Global Racial Empire encourage belief in colonial and capitalist logics (Táíwò, 2022). It becomes harder to conceive of oneself as equal on some level to a plant, honeybee or Other (Krenak, 2020). Peasant farmers, Indigenous People and low-input agroecology continue to be framed as 'backwards', while violent pesticides provide instant jobs, yields and profit (La Vía Campesina, 2024). These logics of the Global Racial Empire enable Syngenta to maintain slow violence, unobserved, unlocated and untreated (Davies, 2018).

In summary, Syngenta's pesticide products are harmful to human, nonhuman and ecological health, and livelihoods. Their actions prioritise profit over safety and maintain slow violence through attritional and chronic pesticide harms that render the cause contestable. The investigation builds on the concept of slow violence by showing how immediate poisonings among the most marginalised communities and nonhuman beings can go unrecognised.

Violence is further silenced by Syngenta shaping narratives as they wash themselves of responsibility and play with truth and law. These tactics are accompanied by violent activity and complicity that works to silence voices that challenge profits. Nevertheless, responsibility also lies in the broader norms of the Global Racial Empire that foster slow violence. As long as these norms prevail, the urge to violate the Other and pursue profit will go unheeded.

A Final Reflection

The findings have been presented through my understanding of the impacts of the pesticide trade, informed by months of research and years of interest. They still demonstrate my struggle to unlearn colonial logics (Braidotti, 2019). For instance, I found it appropriate to distinguish between harms to human and nonhuman health in this zine, even though I recognise how our health is inseparable. It raises the importance of continuing to challenge our own preconceptions when we put down the zine and go into the wider world.

As all beings are interconnected, the slow violence resulting from Syngenta's pesticide trade impacts us all (Krenak, 2020). The most impacted communities I identified in the analysis include nonhuman beings near where pesticides are sprayed, farmworkers and marginalised communities in the US, and workers, Indigenous Peoples, Quilombo communities and land reform settlers in importing countries in the Global South, such as Brazil, India and Palestine. Going forward in our movements for justice, it is important that we are aware of this inequality and coloniality at play, and that we seek to work collectively to bring about meaningful change (Stroud et al., 2024).

China's involvement as Syngenta's owner and a major agricultural importer complicates traditional understandings of colonial extraction from the Global South to Global North (Ollinaho et al., 2023; Huang, 2024). Although, this investigation found few documents on China. It brings to light the importance of constantly reviewing our understandings of coloniality to keep up with dynamic relationships. Future studies should focus on how China sits in the Global Racial Empire.

Alternative Futures

Syngenta's pesticide trade is another instance of corporations exploiting the norms of the Global Racial Empire. If we are to uproot slow violence, we need to transform the system (Davis, 1990). Such a mammoth task can seem overwhelming.

Yet however entrenched colonial logics appear, they are human-made constructs. The persistence of alternative practices among Indigenous and other marginalised communities is testament to the possibility of living in more safe, caring and just systems (La Vía Campesina, 2024). Set against the power of the pesticide industry, I describe here a few examples of collective action that are realising alternative futures. The list in no way exhaustive, but a starting point for inspiration.

As I put these final pages together, the words of Dr Tyrone Hayes run through my head as a reminder of our duty to take action. Albert Einstein (cited in Hayes, 2018) said, "those who have the privilege to know have the duty to act". Building on this, Hayes (2018, 15:18) calls to us;

> I didn't grow up privileged. I don't know about you. All I know is that now, I'm here. Now, you are here. You are privileged and you have a duty.

- **Believe in Another World**

  The scale of our current crises can be overwhelming. Climate tipping points have already been reached, while our social landscape continues to splinter, isolate and exert narratives of supremacy and violence over Others (Edwards, 2025; Global Tipping Points, 2025). Yet courageous activism continues. Sometimes in an outspoken protest or petition, but more often in the act that goes unseen (Tsui, 2023). In the persistence of a culture of care and welcoming displaced people (Ayhan and Colpitts-Elliott, 2025). In allowing spaces to rewild and nature to take its own course (Blythe and Jepson, 2021). In building community around a shared nutritious meal and allowing creative art to celebrate different ways of seeing the world (Krenak, 2020; Wen, 2025). Other times it persists in the silent belief that there is an alternative way of living (Onye, 2024). Even when it seems the world is being pushed in the wrong direction, there is a resistance, a radical change, that begins from within.

- **Stop the Export of Banned Pesticides**

  The European Commission (2020, p.24) plans to ensure that "chemicals banned in the EU are not produced for export". However, the UK currently has no plans to follow suit (Dowler and Hofmeister, 2024). If you are a UK citizen, and you feel safe to do so, you can amplify pressure to end this legal loophole by following the campaign led by the Landworkers' Alliance (2025b) and writing to your MP.

- **Ban Synthetic Pesticides**

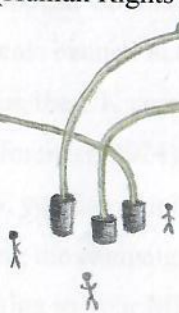
  Even in countries where pesticide dependency is high, campaigns have been able to bring an end to harmful pesticides. Momentum is growing in Kenya, for example. Earlier this year, the Government announced a ban on 50 pesticides, sparked by campaigning and a petition submitted to Parliament (Human Rights Watch, 2023; Route to Food Initiative, 2025).

  As we make this shift, it is important to make sure that those on the frontlines are prioritised, listened to and supported. Banning pesticides overnight can be damaging. In Sri Lanka, pesticides were abruptly banned in 2022, leading to rapid declines in food production (Bhowmick, 2022). This plays into the narrative touted by agribusinesses. However, if incorporated into a long-term plan for structural change, (re)education and economic support, there is no reason why a gradual yet urgent transition to agroecology is not possible (La Vía Campesina, 2024).

- **(Re)Turn to Agroecology**

  While Syngenta (2025c) assert the necessity of pesticides, dozens of agroecology education hubs are rejecting the need for synthetic inputs like pesticides (Lappé, 2022). Agroecology embraces an understanding of the interconnectedness of nature. It aims to improve yields while allowing soil ecosystems to thrive and capture carbon (van der Ploeg and Schneider 2022). By recognising the value of farmer-to-farmer knowledge sharing, these hubs reduce dependency on agribusinesses and support more sustainable livelihoods (Lappé, 2022).

  At the Amrita Bhoomi Learning Centre, South India, farmers have developed a technique to control the fall armyworm. After a few years experimenting, they found that spraying corn with jaggery and milk in the evening attracts ants. These ants are natural predators of the armyworm, providing natural pest control (Lappé, 2022). Food production can be bountiful with minimal harm (Human Rights Council, 2017).



- **Support Food Sovereignty**

  One of the most recognised examples of reclaiming food sovereignty comes from the Movement of Landless Rural Workers (MST) in Brazil (Friends of the MST, 2025). Formed by rural workers and those demanding land reform, the movement began through the occupation of *latifundios*, large landed estates, in 1984. Since then, families have settled on around 7.5 million ha of land, won as a result of occupation (Morton, 2018).

  The movement is not far from our own food basket. As one of the key founders of La Vía Campesina, MST is part of an international coalition of peasants, Indigenous Peoples, rural women and migrant farmworkers campaigning for food sovereignty (Friends of the MST, 2025). La Vía Campesina (2025) and its allies have negotiated The United Nations Declaration on Rights of Peasants and Other People Working in Rural Areas, and gained a seat at institutions like the FAO. With global campaigns and local organisations in 81 countries, we can join in solidarity and support small-scale food producers at the forefront of change.

- **Keep Eyes on UK Regulations**

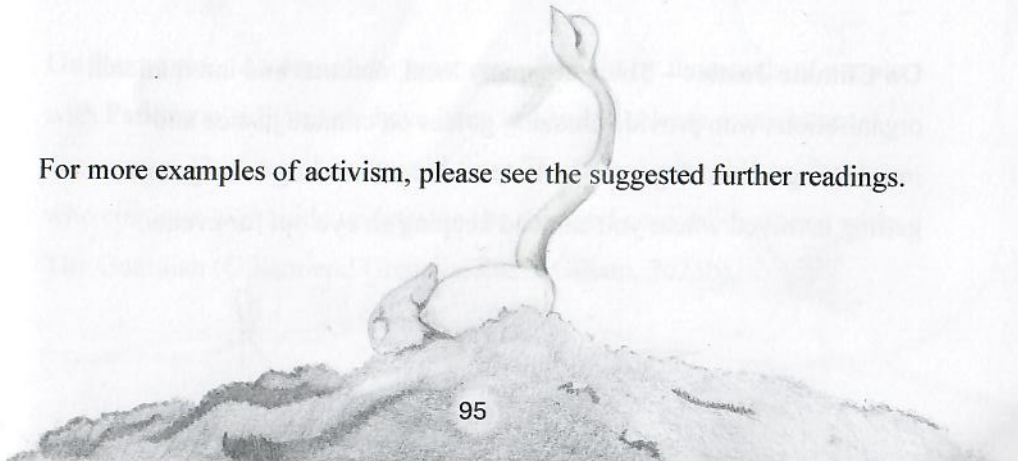
  We need to ensure the UK puts safety before profit and upholds a hazard-based approach to pesticide regulation (Parliamentary Office of Science and Technology, 2021). The UK was set to publish new targets for sustainable pesticide use by 2018. Yet repeated delays mean these are now 7 years late (The Pesticide Collaboration, 2023). Meanwhile, the draft for new guidance says nothing about exports (Department for Environment, Food and Rural Affairs, 2020). It is important that the UK not only ensures that HHPs are recognised and banned, but that this concern extends beyond borders.

  Recent scandals remind us of the devastating consequences that can result when we allow profit to trump safety; from the Grenfell tragedy to the dumping of sewage (Grenfell: Uncovered, 2025; Surfers Against Sewage, 2025). The walk for environmental justice is not over and endures, even in the UK. So, we will tie up our laces, or walk barefoot, and together grow a seed.

- **Get Active**

  As Shiva (2016) avows, we cannot live in siloes anymore. We should instead (re)build a system that centres ecological responsibility, duty and a celebration of life. It is not only a call for anti-racism, but class, climate, more-than-human justice, and justice beyond borders (Tsui, 2023). For what happens in Yavatmal, Mato Grosso, the fields and bees and seas – it affects us all (Priprá, cited in Magnani, 2024). Even if your skills lie elsewhere, perhaps in construction, finance or gender equality, you too can facilitate change through a commitment to decolonising your own learning and connecting your work with struggles for justice. The ability of people to ensure justice for Keno's murder reminds us of the power we can nurture at the grassroots (Friends of the MST, 2025). Transformation is a slow and intergenerational process that requires collective perseverance, and for people of privilege to join the call to action (Davis, 1990; Hayes, 2018). Will you?

For more examples of activism, please see the suggested further readings.



Suggested Further Readings

This list contains some of the resources that I have found useful in my learning. It is not a comprehensive list, and I encourage you to explore the topics with your own critical eye.

On Bhopal – In 1984, a gas leak at Union Carbide's pesticide plant in Bhopal, India, killed at least 10,000 people in three days (Dummett, 2024). Survivors and their grandchildren remain without compensation in a contaminated site that continues to poison the community (Orellana et al., 2024). The disaster brought global awareness to the failure of current systems to realise environmental justice. It should have been a wake-up call. However, the ability of corporate powers to evade justice and paying reparations painfully resembles Syngenta's evasion of responsibility for the Yavatmal tragedy.

The podcast *They Knew Which Way to Run* tells the story of Bhopal through survivor interviews (Dixit and Mulroy, 2022). You can also support the community's fundraising efforts through the Bhopal Medical Appeal (2025).

On Climate Justice – There are many local, national and international organisations who provide amazing guides on climate justice and intersecting issues. A great way to learn is by attending local groups, getting involved where you can and keeping an eye out for events.

In terms of books, *It's Not Just You* by Tori Tsui (2023) provides a deep dive into how the mental health crisis is linked with the climate crisis through the common threads of capitalism. Michaela Loach (2025) has recently published *Climate Is Just The Start*, a guide for younger readers to help us all understand the climate crisis and empower change.

On Land Reform - In Brazil, the MST strives for land reform and social justice. Some of their actions include reforesting degraded land and creating spaces for birds and other animals to return (Fernandes, 2025). The MST's plan for agrarian reform, food sovereignty and planting trees in schools can be found online (Friends of the MST, 2025).

On Palestine – The Palestine Solidarity Campaign (2016) provides many factsheets, media and explainers on the apartheid and genocide in Palestine. Recently, The Palestinian Institute for Climate Strategy (2025) released a manifesto which brings attention to how the architecture of extraction, militarism and so-called 'climate solutions' continue to embed colonial control over Palestine and beyond.

On Paraquat – As part of the court case brought by thousands of people with Parkinson's, Syngenta have been ordered to release many internal documents. These can be obtained from The New Lede (Gillam, 2025a), who continue to provide updates on the case and co-publish stories with The Guardian (Gillam and Uteuova, 2022; Gillam, 2025b).

On the Krenak People – The Krenak are an Indigenous People living in a reservation on the bank of the Doce River, or *Watu* in their own language (Campos, 2025; Povos Indígenas no Brasil, 2025). Ailton Krenak is a prominent activist for Indigenous rights across Latin America (Gaia Foundation, 2025). In his book, *Ideas to Postpone the End of the World*, he discusses how change can come from within. Once we recognise the natural world as our kin, alternative ways of living become possible (Krenak, 2020).

On *Windigo* – In her book *Braiding Sweetgrass*, Robin Wall Kimmerer (2013) uses wisdom from tales of the cannibalistic *Windigo* spirit to make sense of how the desire for money, fame and wealth can latch on and push the construction of unjust economies. Like a virus, it spreads under the wing of colonial and capitalist conquest, bringing the side-effect of numbing us to the harms of exploitation. Kimmerer (p.377) reminds us that we are not beyond hope. We can wake up to our habits and have the courage to refuse destructive practices, and it can start with gratitude for all the earth lends us.

On Yavatmal – Most of the details of the Yavatmal tragedy in this zine come from Public Eye's (2018) investigation. I encourage a read as it helps to contextualise the lived experiences of affected families, and demonstrate how Syngenta denies responsibility.

Glossary

Agroecology – More than just nature-friendly farming, agroecology is a political and social movement. Guided by a vision where everyone has access to the resources they need, the movement encourages the regeneration of Earth's systems, alongside producer autonomy, land liberation and the dismantling of exploitative practices. It recognises historical oppression and actively works to empower those most marginalised in the food system, including peasants, migrant workers and the Global Majority (Landworkers' Alliance, 2025a).

Bancada Ruralista – The agribusiness caucus of the Brazilian Congress (Bombardi and Changoe. 2022).

Bhejal – Impure or adulterated. Synthetic inputs can degrade soils so that they lack *shakti* and become *bhejal* (Dewan, 2021). The concept is commonly used among agrarian communities in Bangladesh (Al Mozahid, 2024).

Cosmology – A worldview, a way of seeing the world, combined with related beliefs about what exists in the world and how we can know what is out there (Watts, 2016).

CropLife – A key lobby group for the world's largest agribusinesses; BASF, Bayer Crop Science, Corteva Agriscience, Syngenta and FMC (Bombardi and Changoe. 2022; CropLife, 2025).

Drip Ecocide – The imperceptible and gradual loss of species and ecosystems, fuelled by the drive for capital. With its roots in the practice of Othering and racial hierarchies, the harms among nonhuman beings effectively go unnoticed (de Nardin Budó and Garcia, 2025).

Environmental Protection Agency (EPA) – The agency of the US Government tasked with writing and enforcing environmental regulations (EPA, 2025c).

European Food Safety Authority (EFSA) – The agency tasked with providing independent scientific advice on food-related risks to the EU (EU, 2025).

Food and Agriculture Organization (FAO) – The UN agency leading international efforts to secure food for all (UN, 2025a).

Global North – Geographies that are politically dominant and assert economic hegemony in the world economic order. Traditionally, it covers countries in the North like the UK, but those like Australia are also included (Pinheiro, 2024).

Global South – Geographies marked by dependency in the world economic order. Traditionally countries in Africa, South America and Asia. Note the term emerged as a move away from the concept of the 'Third World', but still struggles to engage with intersecting oppressions like racism (Pinheiro, 2024).

Green Revolution – The intensification of agriculture that has occurred since WWII. The 'revolution' took an industrial model, promoting pesticides, fertilisers and hybrid seeds to increase yields (Boincean, 2024). The increase in corporate control has contributed to oppression as well as the loss of seed varieties and ecological resilience (La Vía Campesina, 2021).

Highly Hazardous Pesticides (HHPs) – Pesticides that pose "particularly high levels of acute or chronic hazards to health or the environment" (FAO and WHO, 2014). Using this definition and data from regulatory authorities, PAN (2021) compile the only list of HHPs.

***Instituto Pensar Agro* (IPA)** – A Brazilian think tank financed by agribusiness associations. It is known to convene strategic alignment meetings, has advisers permanently lobbying Congress, and draws up talking points for the agribusiness caucus (Wenzel, 2024).

International Monetary Fund (IMF) – The UN agency focused on promoting economic growth and employment through financial and technical assistance (UN, 2025b).

La Vía Campesina – An international movement defending peasant agriculture for food sovereignty (La Vía Campesina, 2025).

Movement of Landless Rural Workers (MST) – A movement formed by rural workers in Brazil working towards land reform (Friends of the MST, 2025).

Non-Target Organism (NTO) – Any species that is not directly targeted by a pesticide (European Environment Agency, 2025).

Othering – The process of asserting difference between yourself and an Other, rather than noticing the similarities between you or the vulnerabilities you share (Liu, 2021).

Pesticide Action Network (PAN) – An NGO network working to replace hazardous pesticides with safer and ecologically just alternatives (PAN International, 2025).

Pesticide – A chemical compound used to kill unwanted 'pests'. The umbrella term of 'pesticide' covers chemicals that kill insects, rodents, fungi and unwanted plants (Eddleston et al., 2022; WHO, 2020).

Pesticide Product – A marketed formula containing an active pesticide ingredient, adjuvants and surfactants (Arcuri and Hendlin, 2019; Dowler and Hofmeister, 2024).

Prior Informed Consent (PIC) – The process whereby someone looking to export a chemical on the PIC list must gain explicit consent from the importing country before they are allowed to export it (Rotterdam Convention, 2023).

Quilombo – A community of escaped black slaves and their descendants, self-defined by their resistance to oppression and acquisition of autonomy. Quilombola settlements can be found across Latin America, though many still struggle to have their right to land recognised by federal authorities (Comissão Pró-Índio de São Paulo, 2025).

Rotterdam Convention – The international and legally binding framework for ensuring the responsible trade of hazardous chemicals through PIC (Rotterdam Convention, 2023).

Shakti – Strength or life force. Healthy soils imbue food with *shakti,* which can then be transferred to humans (Dewan, 2021).

Slow Violence – Violence that is dispersed and accumulates over time and space, making it difficult to assign blame. Such violence often goes unobserved, contested and untreated (Nixon, 2011).

Spray drift – When pesticides are sprayed and carried by the wind onto untargeted areas (Farm Advisory Service, 2025).

Structural Adjustment Plans (SAPs) – Economic policies promoted by the World Bank and IMF that encourage the removal of 'excess' government controls and a neo-liberal agenda. SAPs are sometimes coupled with loans or subsidies (United Nations Economic and Social Commission for Western Africa, 2025).

Transnational Corporation (TNC) – A firm that has power to control and coordinate operations in more than one country (Dicken, 2011).

World Health Organization (WHO) – The UN agency working to promote health and wellbeing (WHO, 2025).

Methods

Data were obtained through iterative web and database searches, followed by assessing each document for relevance. For more details and a list of references, please scan the QR code below.

Acknowledgements

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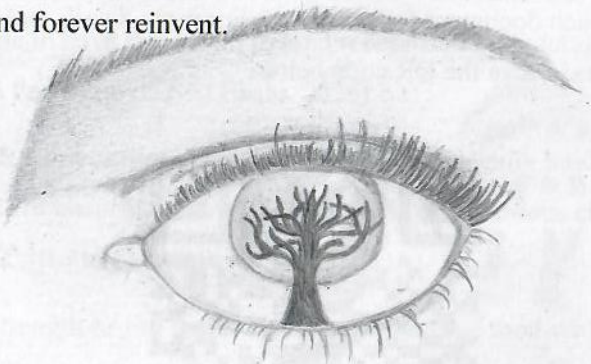

All artworks in this zine are my own illustration unless otherwise stated.

Cover illustration: Drawing of a person spraying pesticides in Yavatmal, India. Source: own illustration, based on Public Eye, 2018.