CHAPTER

1

THE CLIMATE CRISIS AND SYSTEMIC ALTERNATIVES

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Climate change is the most serious challenge we face as a species. Despite numerous warnings – scientific studies, United Nations (UN) declarations, books, movies, progressive media reporting – global leadership has failed humanity. After more than twenty years of multilateral negotiations, we have not developed the solutions to solve the climate crisis decisively. Instead, we have continued emitting pollutants and intensively using fossil fuels and, as a result, have been recording the hottest years on the planet. The last two decades in the fight against the climate crisis have merely confirmed, at a common sense level, an Anthropocene-centred theory: as a geological force, we humans are heating the planet. A heating planet, induced by human action, unhinges all our certainties and places everything in jeopardy. It challenges our fixation with growth economics, 'catch-up' development and every conception of modern progress that has incited our imaginations. Most fundamentally, it prompts us to ask: has globalised capitalism lost its progressiveness? Is today's fossil fuel-driven, hi-tech, scientific, financialised and post-Fordist industrial world leading humanity down a path of ecocidal destruction? How do we survive the climate crisis?

These are the central questions of this volume, which deals with one dimension of the systemic crises of accumulation related to contemporary capitalism. This thematic focus also builds on the previous volume in the series, entitled *Capitalism's Crises: Class Struggles in South Africa and the World*. Without

falling into the trap of catastrophism, end-of-times millenarianism or apolitical acquiescence, this volume treats the climate crisis as an emergency, demanding transformative politics and systemic reforms to remake how we produce, consume, finance and organise social life – it calls for civilisational transformation. It draws from and highlights the analysis, concepts and systemic alternatives emerging at the frontiers of climate justice politics and its convergence with broader anti-systemic movements. Like previous volumes in this series, there is an attempt to think with and learn from grassroots movements. Thus, many of the contributors in this volume are engaged activist scholars, grassroots activists and movement leaders.

At the same time, this volume places Marxism in dialogue with contemporary anti-capitalism in a manner that draws on its ideological and movement potentials. Marxism in the twentieth century as ruling ideology, mostly as Marxism–Leninism, has privileged Promethean growth, vanguardist authoritarianism and catch-up industrialisation, and at the same time has been ruinous to the environment. This volume articulates a Marxism that is post-productivist, resituates nature at the centre of Marxism, confronts the patriarchal and racist oppressions inherent to capitalism, challenges contemporary imperialism and appreciates the need to think and act democratically. In this journey, Marxism is shaped by its own self-reflexivity, by contemporary anti-capitalism and the challenge of confronting the climate contradiction. It is tested as an intellectual resource to be open and serve as the basis for a new future: a democratic eco-socialist world and South Africa.

THE CLIMATE CRISIS AS A SYSTEMIC CRISIS OF CAPITALIST ACCUMULATION

In 1988, National Aeronautics and Space Administration (NASA) scientist James Hansen drew attention to the heating of the Earth's temperature, otherwise known as the 'greenhouse effect' or climate change (see *Washington Post*, 3 August 2012). Yet the US refused to adopt the Kyoto Protocol, which locked in 'common but differentiated responsibilities' (Art. 3.1) for industrial countries (even this did not go far enough). Instead, the US has worked systematically to scuttle the Kyoto Protocol. Hansen, writing in the 13 July 2006 issue of the *New York Review of Books*, cautioned that the world has a decade to alter the trajectory of greenhouse gas (GHG) emissions or face irreversible

changes which will bring disastrous consequences. Since this plea was made, another decade has been lost and today geologists and climate scientists are talking about a new world of unpredictable and no-analogue climatic conditions: the Anthropocene. Put simply, we are entering a world in which humans have altered planetary conditions, including our climate, breaking a 10 000-year pattern of relatively stable climate known as the Holocene.

For many, the climate crisis is a complex scientific problem. At one level it is, and it is very different from daily or seasonal variability in weather. The science of climate change has confirmed, with the measurement of GHGs and in the language of the UN Framework Convention on Climate Change (UNFCCC), that 'human induced climate change' is happening (IPCC 2014: 48). In 2015, we broke the halfway mark towards catastrophic climate change. This was confirmed by the World Meteorological Organisation, which broadcast to the world that planetary temperatures have reached a 1°C increase higher than the period prior to the Industrial Revolution.[1] We have concentrated carbon, at over 400 parts per million, taking us rapidly closer to a 2°C increase in planetary temperature.[2] With this shift, extreme weather events such as droughts, hurricanes, heatwaves, drier conditions enabling fires and floods are becoming more commonplace. Sea levels are also rising, placing many low-lying communities, populous coastal cities and island states in jeopardy. Moreover, climate change on this scale within the Earth system is not expected to unfold in a linear way. Instead, it can potentially happen abruptly or through feedback loops, further accelerating runaway climate change. For example, methane release from the Arctic ice sheet, carbon saturation in our oceans and the destruction of rain forests all feed into the climate change crisis. As we fail to address the climate crisis, it becomes more complex and more costly.

The much-vaunted UN climate negotiations, particularly the Conference of the Parties in Paris during December 2015 (COP21), promised to confirm a clear purpose and political will to ensure we overcome the climate crisis. The Paris Agreement makes a call for urgent action to prevent a 2°C increase in planetary temperature, with an emphasis on efforts to keep temperature increases below 1.5°C, at pre-industrial levels (UNFCCC 2015). Despite the promises, these targets will not be realised. As things stand, most voluntary national commitments will lead to an overshoot of 2°C. The most up-to-date analysis of national pledges suggests that these are consistent with a temperature rise of 2.6–3.1°C above pre-industrial levels (Darby 2016). Moreover, while this Agreement came into force on 4 November 2016 it will only build

momentum from 2020 onwards, thus losing another four years in the context of two decades of failed action. It is also expected, given the current emission rate and trajectory, that 1.5°C will be breached sooner than expected. In a recent study it was confirmed, 'The window for limiting warming to below 1.5C with high probability and without temporarily exceeding that level already seems to have closed' (Rogelj et al. 2016: 631).

The 2°C threshold discussed in the Paris Agreement is far from being a protective barrier. Instead, it is a dangerous threshold taking the human world to the brink. Studies on tipping points (like the Arctic becoming ice free or major retreats in glaciers in the Himalayas) show that eighteen out of thirty-seven abrupt changes will happen by a 2°C change or less (Drijfhout 2015). Put more bluntly, a 2°C increase in planetary temperature is extremely dangerous. For vulnerable nations, contributing less than two per cent of current global GHG emissions, a 2°C target is nothing short of catastrophic.[3] With the current increase in global temperature, major consequences beyond their capabilities have already come to the fore for the most vulnerable twenty countries in the world, representing 700 million people and including poor, arid, landlocked, mountainous and small island states from Africa, Asia, the Caribbean, Latin America and the Pacific. These experiences provide us with a window into the future. According to the Vulnerable 20 (or V20), this is what they are already facing:[4]

- An average of more than 50 000 deaths per year since 2010, a number expected to increase exponentially by 2030;
- Escalating annual losses of at least 2.5% of their GDP potential per year, estimated at US$45 billion since 2010, a number expected to increase to close to US$400 billion in the next twenty years;
- More than half the economic impact of climate change by 2030 and over eighty per cent of its health impact for V20 and other low-emitting developing countries;
- A doubling in the number of extremely hot days and hot nights in the last fifty years as the planet has warmed appreciably;
- Countless extreme events which include typhoons with wind speeds that are around ten per cent stronger than they were in the 1970s, translating into more than a thirty per cent increase in destructiveness;
- Sea-level rise that will partially or completely submerge the island nations of Kiribati, Maldives and Tuvalu, displacing at least 500 000 people;

- The displacement of up to forty million people due to the inundation of low-elevation land resulting from climate change-driven sea-level rise;
- The threat of increasingly devastating and more frequent disasters, such as storms, flooding and drought.

This leads us to ask: what is the Paris Agreement really all about? What are its limits and contradictions? How does its political economy work against us solving the biggest problem facing the human race?

First, the Paris Agreement abandons the Kyoto Protocol commitment to 'common but differentiated responsibilities' despite formally declaring its commitments to the Protocol. The Kyoto Protocol explicitly placed a greater burden on rich industrialised countries. The Paris Agreement, by contrast, provides for voluntary and nationally determined commitments, which should not be confused with nationally binding and regulated commitments. Yet there are historical and contemporary inequalities regarding carbon emissions. Some of the rich industrialised countries of the global North have been polluting since the advent of the Industrial Revolution, in the context of uneven processes of capitalist development and imperial international relations. These countries carry a climate debt. However, climate debt and climate reparations do not feature in the Paris Agreement. Instead, there is a paltry commitment of US$100 billion from developed countries for mitigation and adaptation, which pales in comparison to the finance injected into the crisis-prone financial system. What this means is that those who have created (and continue to create) the problem, are off the hook. Without regulated commitments for reductions in GHG emissions based on historical climate debt, this inequality will not be addressed and emerging polluters, like China, will only commit to and act on what suits their interests. Moreover, the argument of industrialising countries for industrial development space cannot be addressed in the interests of the planet and all of humanity unless industrialised countries address the historic climate debt and aggressively lead the cutback in emissions through regulation. The Paris Agreement fails to do this, which means it is a 'business as usual' trajectory for globalised and fossil fuel-driven industrial development, including global shipping and airplane emissions. Transportation emissions are not even mentioned in the Paris Agreement. In short, the Agreement has turned its back on common but differentiated responsibilities. A tenuous voluntary pledge system, favoured by the US, one of the leading carbon emitters, has been entrenched despite the world running out of time.

Second, the carbon space (or budget) in the Paris Agreement for developed and developing countries is left to each country to manage, in a global political economy in which competition rules. No country in this globalised race is going to surrender any advantages to address the climate crisis unless there are reciprocal and harmonised commitments. At the same time, if the pledge and review system falters, with some countries doing more than others, this is likely to cause consternation against free riders, which could undermine the mechanism. In the context of economic stagnation, corporate capture of political systems and the entrenched power of fossil fuel interests, the Paris Agreement is already being bypassed to ensure profit rates are protected and global accumulation is maintained. The geopolitics of domestic interests will constantly threaten and push back the pledge and review mechanism. For instance, despite Barack Obama's rhetoric in praising this Agreement, the US ruling class did not support him. Instead, their approach was to keep the globalised capitalist system going on a 'business as usual' path despite the climate crisis.[5] Donald Trump, on the other hand, has given the go-ahead to expand fossil fuel pipeline development (the Dakota Access and Keystone XL), rolled back Obama's modest Clean Power Plan, weakened the Environmental Protection Agency and withdrawn the US from the Paris Agreement. Ironically, the Paris Agreement was not even a legally binding agreement and gave the US room to bring whatever it wanted into the multilateral process. With climate change denialism back on the agenda in the US, and the world's climate being pushed into greater corporate-induced chaos, the US under Trump will seek to protect 'lifeboat' America at all costs. As a result, a more securitised response is likely to come to the fore, from both the US and other wealthy countries. The only way to challenge this is if the geopolitics of international trade, finance and development is redefined. A climate-driven world cannot be held hostage by the whims of the US-led bloc. If we are to save life on Earth, neoliberalised global accumulation and the current policies of globally competitive capitalist development have to be abandoned. Given the climate emergency, a new political economy has to emerge to replace global competition. This requires 'just transitions' (discussed below) at various scales and tempos to deal with the disproportionate impacts of the climate crisis on vulnerable, poor societies, the working classes and peasantries, who are already bearing the brunt of a highly unequal world. The Paris Agreement is not up to this task and is not moving the world in this direction. With Trump, supported by fossil capital and finance, the Paris Agreement is going to be a symbolic rallying point for only some

countries. In fact, the crisis of climate multilateralism has become worse and reflects a crisis of global leadership.

Third, and rather obvious, the Paris Agreement reflects a balance of forces in favour of greening capitalism. This illusion comes through the false solutions embedded in the Agreement, which include carbon trading, reforestation and preventing forest degradation and offset mechanisms (UNFCCC 2015). These solutions have been part of multilateral negotiations for the past two decades and have not worked in their implementation. Carbon trading is a clear example in this regard (Bond 2012). As we run out of time, techno-fixes become more appealing than system change. So, contrary to Anthropocene theory, which suggests that we are all responsible for the climate crisis, it is actually the capitalist system and its class champions that are responsible for the climate crisis. A system that has produced a systemic problem cannot solve the problem, given that this is a carbon-based capitalist civilisation. Nothing short of the fundamental decarbonisation of production, consumption, finance and every life world on this planet will save human and non-human nature. The Paris Agreement falls short of this imperative.

Fourth, it has become increasingly clear through numerous studies that if we extract more fossil fuels we are going to breach 2°C of planetary heating. In the most recent study done on this and cited by Bill McKibben (2016), the conclusion is simple: keeping temperature increases below 2°C requires zero extraction of fossil fuels. We have reached the limits of drilling, digging and extracting if we want to survive. More shocking is the silence of the Paris Agreement about carbon corporations and the need to restrict their activities, even as a minimum gesture to incite hope and encourage a global shift away from fossil fuels. What is patently clear is that the Agreement has not addressed the most immediate and obvious driver of climate change. Instead, by failing to spotlight carbon corporations (oil, gas, coal) it has given warrant for more deadly emissions. Fracking, tar sands, deep-water drilling and other new frontiers of complex hydrocarbons are all expanding. Trump and his class allies have given further momentum to this. This 'business as usual' approach is the face of eco-fascism and imperial ecocide. It is the biggest failing of the Paris Agreement, as it does not address the major obstacle to renewable energy systems and a transformative just transition.

The world is facing a perilous future, with a 1°C increase in temperatures since pre the Industrial Revolution already providing signs of what the 'no-analogue world' will bring. A hotter planet means the conditions to sustain human and

non-human life will become ever more difficult. Global ruling classes have failed humanity and all life on the planet. We have a stark choice: end capitalism or perish. It is in this context that the rising climate justice movement is crucial, together with its potential to unite red-green forces,[6] advance deep just transitions and build systemic alternatives from below. Building this movement is our only hope for the future. The climate justice movement will not guarantee our survival but will certainly lessen the catastrophic consequences of climate change and harness the best of human solidarity to sustain life. This volume foregrounds some of the leading perspectives emerging from this movement.

CLIMATE JUSTICE, SYSTEM CHANGE AND THE JUST TRANSITION

The climate justice movement is part of a new cycle of global resistance seeking to push back neoliberal globalisation while advancing systemic alternatives. Four important conditions facilitated its emergence.[7] First was the failure of a reform agenda through the Climate Action Network inside UN climate processes. More ground was being conceded by progressive civil society until 2007, in Bali, when a breakaway was formalised through the call for Climate Action Now! (Bond 2012). Second was the increasing shift in the balance of forces within the climate negotiations favouring green neoliberal and capitalist solutions. The green-wash of UN climate summits prompted the need to develop an alternative vision, practice and politics around systemic alternatives (Angus 2010; Bassey 2012; Tokar 2010). The attempt by Bolivia in 2010, at the Cochabamba summit, highlighted the fact that only one state in the interstate system was willing to champion a more radical climate justice politics inside the UN climate negotiations. This attempt by Bolivia also came short, due to the contradictions within Bolivia, such as its own petro economy, as well as the dynamics of the power structure within UN negotiations. Increasingly, for climate justice activists UN climate summits became more about the outside, and the theatre of street politics and platforms for people's systemic alternatives. An alternative narrative of climate justice was being globalised from below.

Third, as climate shocks began emerging as part of planetary lived experience, common sense began crystallising as good sense. Hurricanes like Katrina and Sandy, California's mega drought, El Nino-induced droughts with longer duration and typhoons Haiyan and Haima battering the Philippines have all

brought home the need to build from below. Fourth, the continued expansion of fossil fuel extraction, in the midst of the climate crisis, has also engendered some of the most radical activism by African women in the Niger Delta and amongst native Americans and other grassroots communities at the frontline of carbon corporations' regimes of extraction and dispossession (Bassey 2012; Klein 2014). Calls to keep 'oil in the ground, coal in the hole' have begun resonating on a global scale. Battle lines are being drawn all over the world against UN false solutions, carbon corporations and states promoting fossil economies. At the same time, systemic alternatives are coming to the fore such as food sovereignty, climate jobs, public transport, socially owned renewable energy, basic income grants, rights of nature, 'living well', ubuntu, commoning (of water, land, cyberspace), zero waste, solidarity economies and many more systemic alternatives.

The challenge of system change is key for survival. Climate justice politics foregrounds this. The most crucial idea in this regard is the notion of the 'just transition', as articulated by trade unions. Central to this notion is recognition of both the slow but immediate and long-term violence associated with the climate crisis as it impacts on the lives of the poor, the working class, the peasantry and the vulnerable. This is disproportionate and disparate, within rich countries as well. Climate shocks are induced by the capitalist system and have become internal to the dynamics of capitalism, but this does not mean the working class and poor have to bear the brunt and cost of the climate crisis. The notion of the just transition affirms the importance of transforming our societies now, but in a manner that privileges the interests of the majority as opposed to the one per cent. Moreover, as Jacklyn Cock cautions in this volume, for this to happen such transitions have to be more than shallow changes. This means that system change of everything is crucial to sustain life. It is in this context that this volume brings to the fore key systemic alternatives that would inform a transformative just transition and the building of a democratic eco-socialist South Africa, and world, from below.

At the same time, contributions in this volume realise the limits and challenges faced by climate justice politics in achieving a transformative just transition. In this regard, the chapters grapple with the following in different ways:

- Confronting the challenge of building viable and sustainable societies as part of the just transition. While the transformative politics and systemic alternatives of climate justice politics are not abstract or utopian blueprints, there is a need for a concrete vision of another world and society

beyond capitalism. Drawing on the rich and emancipatory traditions of socialism together with contemporary anti-capitalism is crucial for constructing this vision.

- Connecting grassroots, frontline struggles to national, regional and global struggles. Geographical scale and critical mass is a challenge to push back fossil-fuel capitalism while creating the space for systemic alternatives. These systemic alternatives have to unleash an alternative logic, build new values-based institutions and enable momentum for democratic transformation through systemic reforms.
- Building red–green alliances is crucial and means system change and transformative politics have to enable red to become green and green more red. The working class and green movements have to converge. It is imperative to forge these alliances in practice around common analyses, campaigns and building systemic alternatives.
- Fostering and promoting transformative just transitions as a credible imperative embracing systemic change is key. This raises questions about state power and how climate justice activism should transform and re-embed the state as it builds from below.

It is with regard to these challenges that this volume orientates its contribution around systemic alternatives and transformative just transitions, particularly in relation to democratic eco-socialist alternatives.

FROM SOCIALISM TO DEMOCRATIC ECO-SOCIALISM

Marxist-inspired socialism in the twentieth century has been discredited, whether as social democracy, Marxist–Leninist–Maoist regimes, or as revolutionary nationalist projects. With the deepening crisis of contemporary capitalism, some argue that these historical failures were tainted, including by western propaganda. According to this argument, what is required is a reaffirmation and retrieval. There is a need for a better version of the same, and maybe with better leaders, outcomes will be different. Such positions lend themselves to voluntarist readings of history, of both internal and external conditions that contributed to failure, and are rather dogmatic. Moreover, such approaches fail to see problems with Marxist theory implicated in these historical experiences of socialism, the limits to forms of struggle waged, the contradictions

of contemporary globalised capitalism and are closed to the new anti-systemic politics emerging amongst new anti-capitalist movements and forces. A dogmatic approach to the history of socialism will not assist the renewal of socialism.

This volume confronts this dogma by looking at the failures of twentieth-century socialism through the critique, theoretical development and practical horizons of democratic eco-socialism. In this regard, there are five crucial historical moments and approaches to the development of contemporary democratic eco-socialist analysis and struggle.[8] These moments span the latter half of the twentieth century and include the present. Such moments and approaches can be delineated as follows: (i) a Marxist ecology critique of actually existing 'socialism'; (ii) greening Marxism through ecology; (iii) refinding a complex ecology in classical Marxism; (iv) utilising a historical materialist ecology and theory of capitalist crisis to engage with current environmental problems; and (v) the rise of eco-socialist forces in the world championing systemic alternatives. Each of these is unpacked below. Moreover, this volume embraces all these approaches to eco-socialist analysis and struggle, despite tensions and unresolved positions in some instances. Each chapter in this volume can be traced back to these approaches to democratic eco-socialism.

The first moment and approach to democratic eco-socialism derives from the experience of actually existing 'socialism'.[9] These are dissident voices that have challenged the productivism of the former Soviet Bloc and contemporary China while arguing for ecological transformation. Two crucial examples stand out. Rudolf Bahro's *The Alternative in Eastern Europe*, published in 1978, provides a devastating critique of the making of 'industrial despotism' and the deep alienation central to the anatomy of party-controlled state socialism. Moreover, he argues for a remaking of the division of labour through greater worker self-determination, greater democracy and a 'cultural revolution'. Bahro wanted actually existing socialism to become a truly emancipated civilisation of 'free producers'. With the publication of his book, he was jailed and declared a spy. He was only released by the East German regime after an international outcry. In West Germany he went on to become one of the leading voices of the German Greens but was later disaffected by its narrow electoralism and convergence with the social democratic party.[10] With regard to China, one of the most incisive Marxist ecology critiques is Minqi Li's *China and the 21st Century Crisis* (2016). Li points to the class and ecological contradictions central to China's capitalism. He argues powerfully for understanding the climate crisis

and oil peak as central to the unsustainability of Chinese capitalism. Ultimately, he suggests a transition is necessary which has to grapple with the challenges of reform, revolution or collapse.

The greening of Marxism, which is the second moment and approach to democratic eco-socialism, develops largely out of ecological critiques of productivist Marxism, with its emphasis on socialist modernisation and industrial accumulation. Some critiques have gone as far as suggesting that the origins of productivism lie with Marx. This is because, it is claimed, Marx did not have an adequate understanding of nature, venerated the development of the 'forces of production', was blind to ecological limits, was anthropocentric and promoted an industrial vision of a post-capitalist society based on abundance.[11] Moreover, it is argued that as a result, the Soviet Union (and now China) encapsulated the worst kind of productivist Marxism. Many of Marx's ostensible theses are considered the problem within historical Marxism and therefore Marxism is inadequate to deal with the ecological challenges of our time. Instead, Marxism has to be brought into ecology. The greening of Marxism entails taking on board the concerns of ecology, including the intrinsic value of nature, the Malthusian population challenge, the dangers of science and technology, and planetary ecological limits. Thus, Marxism has to become an ecological Marxism.[12]

The third moment and approach to developing democratic eco-socialism is by Marxists who have not accepted the critique of Marx by ecological Marxists. Instead, such Marxist ecologists have reread Marx to find the lost ecological dimension in his work. This spans various Marxist thinkers, each with a different emphasis in their reading of Marx's ecology. For instance, Paul Burkett (2014) refutes claims about Marx's thought being productivist with three arguments. First, Marx always understood human wealth as having a nature component, not just labour. Second, Marx always understood that human production, under any social system, would be constrained by natural and ecological laws. Third, Marx was very aware of the wastefulness inherent to capitalism's development of the productive forces and its destructiveness. Burkett salvages a Marxist ecology by recognising the importance of nature to Marx's historical materialism, value-form analysis of capitalism and the importance of nature in the struggle for an alternative society. John Bellamy Foster (2000) adds to this by bringing out an ecological dimension in many of the neglected aspects of Marx's thought. He draws on Marx's writing on philosophical naturalism, evolutionary theory, capitalist agriculture and soil theory. Foster's reading provides us with a conception of the metabolic rift central to Marx, which is about the

separation of the human being from nature, including the divide between town and country. He demonstrates a powerful ecological sensibility in Marx.

The fourth moment and approach to democratic eco-socialism builds on Marxist ecology. It recognises that a complex historical materialist ecology, a theory of capitalism related to ecological crisis and a new democratic conception of anti-capitalist agency, has a great deal to offer in terms of an analysis of ecological contradictions. Such contradictions include: extinction of species through loss of biodiversity; acid rain; destruction of the ozone layer; desertification; pollution of oceans; contamination of lakes, rivers and streams; dispossession of people's land; overfishing; hazardous working conditions; incineration of waste; famines and breaching all planetary ecological limits, with climate change being one of the biggest challenges. David Layfield (2008) dedicates an entire text to showing how this all fits together from the standpoint of the intersection of Marxism and ecology, while activists like Nimmo Bassey (2012) and Naomi Klein (2014) demonstrate how the climate crisis is not only driven by a capitalist political economy, but is also about a new resistance that is rising at the frontlines of preventing extraction of fossil fuels and also in the context of climate justice struggles.

The fifth moment and approach to democratic eco-socialism is informed by the agency of the climate justice movement and a host of other anti-systemic forces that are rising to advance systemic alternatives.[13] The slogan 'System Change, Not Climate Change' best captures the democratic eco-socialist orientation of these movements. These movements and their organic intellectuals are fighting against carbon corporations expanding into tar sands, fracking and offshore drilling. Their systemic alternatives are informed by indigenous cultures, cosmologies and rights-based discourses. The dialogue with Marxism and how class, race, gender and ecology interact is also part of this ferment. These organic discourses are shaping the frontiers of democratic eco-socialism as well. For example, the rights of nature tribunals have been convened as part of the people's spaces alongside UN climate summits. Crucial is how the dispossession of indigenous people's rights to land, water and life has been connected to fighting corporations and capitalism.[14]

Moreover, there are movements fighting against the dispossession of the world's peasantry, mainly women, who produce almost seventy per cent of the world's food (Shiva 2015: 16), and who are taking a stand against transnational food corporations and their regimes of dispossession through food sovereignty politics. La Via Campesina, with over 200 million members and a myriad of

food sovereignty alliances in different countries and regions in the world, has been crucial in advancing this systemic alternative. Food sovereignty perspectives and eco-feminists recognise that globalised industrial food systems are responsible for twenty-five per cent of the world's carbon dioxide emissions, sixty per cent of methane gas emissions and eighty per cent of nitrous oxide emissions, all deadly GHGs (Shiva 2015: 54). It is not surprising that there is a growing call for food sovereignty pathways based on the science of agro-ecology and the democratic building of grassroots movements.

Today, the five moments and approaches to democratic eco-socialism confirm its arrival and importance. The meaning of socialism (and to be a socialist) today is fundamentally about being democratic eco-socialist in identity and in ideological representation. Merely referring to socialism or representing one's self as socialist equates to a failed commitment to democracy as people's power, as evidenced in the twentieth century, and also equates to productivist socialism which cannot be realised on a scorched planet and, more fundamentally, will only contribute to such a disaster. Instead, a renewed democratic eco-socialism faces squarely the challenge to save human and non-human nature from capitalism's ecocidal logic through a radical practice and conception of democracy as people's power, mediated by an ethics to sustain life.

This of course does not mean that race and gender are unimportant to the identity of a democratic eco-socialist. In all the democratic eco-socialist struggles emerging today, whether through resistance on indigenous land against fracking or oil extraction, or through struggles against dispossession of women peasant farmers, or through neo-Marxist political economy analysis of ecological problems, race and gender are integral (Bond 2012; Klein 2014). A democratic eco-socialist is feminist and anti-racist and many chapters in this volume bring out these dimensions. At the same time, the conceptual remit of a renewed socialism prompts us to think more analytically and conceptually about democratic eco-socialism. To assist us we draw on Raymond Williams, a Marxist cultural theorist, particularly his book *Keywords* (1983).

In *Keywords*, Williams derives the origins of the word 'democracy' from the Greek word *demokratia* with its emphasis on *demos* (the people) and *kratos* (rule) – in other words, rule by the people. However, he is aware of its various definitions and usages and cautions us against its appropriations both by the liberal and socialist traditions. Central to the development of the term 'democracy' was the idea of class rule, or sometimes rule by the multitude. From the latter part of the nineteenth century, it was adopted in political language

and used in modern party politics. Liberals tended to focus on representative democracy and qualifying the meaning of the 'people' to certain groups, such as freemen, wisemen, white men and owners of property. Socialists tended to emphasise democracy as meaning popular power and a state in which the interests of the majority were central and were exercised and controlled by the majority. However, Williams (1983: 97) cautions that in practice both liberal and twentieth-century socialist 'people's democracies' undermined people's power. Representation was manipulated and popular power was reduced to bureaucracy or oligarchy. In the twenty-first century renewal of socialism, democracy is about a radical practice, various institutional forms, conditions that protect both negative and positive freedoms and an ethics to sustain life. It is about democratic movements, direct citizen action, participatory forms, representative processes, rights and deliberated ethical choices. People's power is affirmed in all these ways to ensure that political and administrative state structures are also democratised.

Williams (1983) confirms the word 'ecology' first came into usage in the 1870s through the work of a German zoologist, Ernst Haeckel. Haeckel's conception mainly focused on the habitat of plants and animals and on their relationship with each other. Ecology in the twentieth century was briefly overshadowed by 'environmentalism', particularly in the mid-1950s, to express concern with conservation and for measures against pollution. However, ecology further extends its meaning to include human relationships with the physical world. Today, ecology situates human beings as an integral part of nature and within planetary ecosystems. It grapples with human beings' coeval relation to and co-creation of nature. In the twenty-first century, ecology has also become integral to the prefix 'eco-' within democratic eco-socialism.

The words 'socialist' and 'socialism' really get established in modern usage in the 1860s, alongside 'cooperative', 'mutualist', 'associationist' and 'collectivist' (Williams 1983: 288). Different traditions used the word 'socialism' to refer either, like Marxists, to a transitional society between capitalism and communism or, like Fabian socialists, to an understanding of socialism as the logical development of liberal society to achieve the economic side of the liberal ideal. In the twentieth century, communist parties formed out of the Russian revolution maintained a commitment to socialism but tried to distinguish their socialism from that of social democratic parties. Revolutionary nationalists also devised variants of socialism such as African socialism or Nehruvian socialism. Today socialists are championing struggles against exploitation,

commodification, dispossession, oppression (racial, gender, sexual) and for greater democracy in government and the workplace. At the same time, property relations are being rethought to include various forms of the commons (land, seeds, water, knowledge) and socialised property (such as worker cooperatives, municipal ownership involving communities and workers and community trusts) while recognising the importance of democratised public ownership. Moreover, democratic planning of food systems, energy and resources (like participatory budgeting) are also being attempted in practice and are part of the just transition to sustain life. Socialism in the twenty-first century is no longer the preserve of vanguard parties but is emerging as part of anti-systemic movements, grassroots networks, progressive think tanks and democratic political instruments wanting transformative change. Conjoined to radical democracy, it is also about ethical values informing individual and collective choices to save life – both human and non-human.

Ultimately, bringing these keywords together means socialism in the twenty-first century is democratic eco-socialism. It is a living socialism in a historical process of realisation, and is informed by the five moments and approaches to democratic eco-socialist analysis and struggle mentioned above. This is explored further below, in terms of concrete democratic eco-socialist alternatives emanating from struggles in the world and in South Africa.

DEMOCRATIC ECO-SOCIALIST ALTERNATIVES

Part One of this volume focuses on a counternarrative of the climate crisis. It focuses on and deepens the analysis of the relationship between the climate crisis and capitalism.

In chapter two, Dorothy Grace Guerrero draws on her many years of advocacy and activism within UN–COP circuits and climate justice politics to provide a critical political economy analysis of global climate change negotiations. She situates her perspective in the institutional political economy of the UN climate negotiations, tracing its increasing disconnect from the imperatives of climate science, the voices of countries impacted by climate shocks and street politics. Guerrero emphasises the centrality of corporate capture within the UN system in general, including climate change negotiations. She foregrounds how corporate influence has not only obstructed serious systemic solutions from coming to the fore in the global negotiations for the past twenty years, during

which carbon emissions and planetary temperatures have increased, but also how corporate interests are registered in multilateral processes. This includes the push back against regulated reductions in carbon emissions, the roll back of 'common but differentiated responsibilities', the rise of market-centred solutions, failure to address the continued use of fossil fuels and tenuous voluntary commitments by countries, which are far from adequate to prevent either a 1.5 or 2°C increase in planetary temperatures. Guerrero consistently argues that the climate crisis is more than an environmental problem – it encompasses ecological and social crises. It reflects the asymmetries of power between rich and poor countries and class hierarchies in societies. In the end, Guerrero points us in the direction of system change and transformative politics. She highlights crucial systemic alternatives emerging from climate justice forces that require transformation of political, economic, social and environmental relations.

In chapter three, Vishwas Satgar interrogates the ideological construction and function of the Anthropocene discourse, both its official version within the UN climate process but also as part of a growing popular discourse. This chapter traces the making of Anthropocene discourse, its science and its rendering as social scientific explanation. However, it is as social scientific explanation that it is critiqued. The critique highlights how Anthropocene discourse has a multivalence, which enables it to confirm technocratic practice and human triumphalism vis-à-vis nature. At the same time, the chapter engages critically with the existing Marxist engagement with this discourse. Some Marxists have shown a willingness to embrace the Anthropocene framework, mainly due to its scientific argument that humans are responsible for planetary impacts, while others embrace an anthropocentric version of the Capitalocene in which humans co-create nature. This chapter engages critically with existing Marxist ecological approaches to the Anthropocene to highlight their limits. Deriving from this is a perspective that understands Anthropocene discourse as a confirmation of the logic of imperial ecocide, having its genesis in the origins of capitalism and in its making over 500 years. It is in this process that capital is also constituted as a geological force shaping and determining the conditions of life forms and worlds. Moreover, it argues that the Anthropocene embodies power relations that affirm racialised dominance as part of imperial ecocide. Finally, the chapter concludes with a reflection on the prospects of advancing transformative just transitions.

Part Two highlights concrete democratic eco-socialist alternatives coming to the fore, mainly from the global South, but being translated in different

locales through transnational activist circuits that are part of climate justice activism. These alternatives seek to elaborate content for the just transition and systemic reforms, as part of the struggle for climate justice. On the ground and in struggles, these alternatives are championed as part of the lived experience of indigenous people's movements, peasant movements, worker movements, progressive think tanks, activist groups and radical intellectuals.

Chapter four, by Hein Marais, foregrounds the universal basic income grant (UBIG) as a crucial transformative response to the climate crisis and increasingly the crisis of social reproduction caused by increasing unemployment and poverty wages. Marais shows convincingly that the moment for the UBIG, is now. He highlights how wage labour is increasingly becoming an impossible way to survive. Unemployment rates are growing across the world, the conditions of work are also becoming precarious, the overproduction crises of capital accumulation are continuing in the context in which labour absorption is exhausted, labour is sharing less in the wealth created and union densities are in decline, making it near impossible to stem yawning inequalities. At the same time, the transition from 'dirty industries' and the impacts of climate shocks make it necessary to consider the UBIG as a central transformative measure in the context of the just transition. Workers need not carry the disproportionate impacts of the climate crisis with such a measure. Beyond making the case for the UBIG as a crucial alternative, Marais also navigates the deep ideological prejudices against a proposition to create a world beyond work and the appropriations of the UBIG by the neoliberal right wing wanting to roll back public goods. Most importantly, he underlines its utopian glow as expressed in its radical potential as a crucial step in liberating labour from dependence on capital, affirming citizenship but also allowing for a reclaiming of life, both human and non-human.

In chapter five, Pablo Sólon, the former ambassador of the Plurinational State of Bolivia to the UN (2009–2011) and one of the leading climate justice thinkers and campaigners for the rights of nature/Mother Earth, introduces us to this systemic alternative. Sólon places the Rights of Mother Earth alternative squarely in opposition to anthropocentrism. He makes his argument recognising that the Rights of Mother Earth is about breaking with the duality in western thought which places the human subject in opposition to other objects, living or non-living. Moreover, he brings to the fore the genealogy of this idea within Andean and more generally indigenous thought, scientific discourses on Earth system science, spiritual and religious ethical thought and juridical thinking.

Sólon furnishes us with the ideological foundations of this idea and then traces its development through Deep Ecology and Wild Law. He demonstrates how the conception of the Rights of Mother Earth is not equivalent to human rights and is not about merely extending human rights to nature. Rather, he shows how philosophically, by drawing on Thomas Berry's Earth Jurisprudence, the Rights of Mother Earth derives from the same source of life as human rights, and conceptually advocates for an Earth community in which there is no hierarchy of living or non-living forms. Humans and nature are equivalent and part of a whole. At the same time, rights are qualitatively different in this framework. Sólon further shows how these ideas have found expression in legal instruments, including the Ecuadorian constitution and the Bolivian Law of the Rights of Mother Earth. In affirming these advances, Sólon is far from reducing the Rights of Mother Earth to legal discourse. Instead, he consistently argues to recognise and struggle for its realisation through mass politics.

In chapter six, Alberto Acosta and Mateo Martínez Abarca bring to the fore the idea of *buen vivir* or *sumak kawsay* (in Kichwa) or *suma qamaña* (in Aymara), which loosely translated refers to living well. It has its roots in indigenous ancestral knowledge in Ecuador and in other countries in the region. As explicated in this chapter, this is an alternative to the conception of capitalist modernity and development transmitted to the global South. It is a critique of the productivism, materialism and dualistic relationship western thought has imposed on nature. It challenges the human separation from nature and is a discourse that gives ontological value to all living entities. It is a long-standing emancipatory perspective of indigenous peoples who have been facing 500 years of colonisation. The discourse of *buen vivir* calls forth the need to decolonise our societies and to rethink our values and social practices. It is not a blueprint or an intellectual fashion. In today's Latin America it is a deep expression of the power of rising indigenous communities that want to confront the crises of capitalist civilisation. It is about a collective journey to remake our world such that the dichotomy between humans and nature is ended. *Pacha Mama* or Mother Earth is central to how we think about society and how we refound our political economy relations. Acosta and Abarca expose the importance of this idea to the new constitutionalism in the Andes but also address how we can think through the implications of *buen vivir* for transforming the economy and its logic. In the end, they place Marxism in dialogue with a radical anti-capitalist idea emerging from indigenous communities that can assist us in constructing a solidarity economy that sustains life as part of the just transition.

In chapter seven, by Devan Pillay, there is a strong critique of the growth metric. Modern industrial and globalised economies are fixated on growth but, as Pillay argues, this is implicated in reproducing a system in which there are deepening economic, social and ecological crises. Growth, he argues, cannot be uncoupled from these crises and increasingly the 'art of paradigm maintenance' associated with growth-based economic policy making is revealing its limits and contradictions. He also demonstrates how in South Africa neoliberal economic policies, including the National Development Plan, shore up a fossil fuel-driven minerals–energy–finance complex, reproducing a pattern of systemic crisis, all in the pursuit of growth. Pillay then provides a departure from this framework by suggesting we need transformative reforms and alternatives beyond neoliberal and twentieth-century Marxist-inspired growth economies. Central to such alternatives is a retrieval of a radical humanism within Marxism (such as in Marx and Rick Turner, the latter a South African 'organic intellectual') to find common ground with materialist and atheistic philosophies like Buddhism. Pillay argues we need to refind a holistic frame of social change, central to democratic eco-socialism and the just transition, in which the existential liberation of the human being, as part of nature, is tied to larger social transformation. This means we need new concepts, emanating from counterhegemonic class and popular struggles unfolding from below, to order our relations between humans and nature, very similar to *buen vivir*, ubuntu and even the Happiness Index. A growth-centred South Africa, and world, will merely reproduce more of the same, taking us further away from a just transition and the realisation of transformative alternatives.

Chapter eight, by Christelle Terreblanche, breaks new ground in the debate about democratic eco-socialism. In her chapter, there is an attempt to reclaim ubuntu – an African understanding and ethics of humans and their interconnectedness with nature – as an ethical paradigm while placing it in dialogue with eco-socialism. This is about Africa's holistic and integrated worldview, providing ideological resources to both challenge contemporary capitalism and rise to the challenge of renewing a socialist response to the climate crisis. This is not done through abstract philosophical theorising, but rather through situating ubuntu in Africa's first wave of socialism and Marxist–Leninist regimes. Important lessons are drawn from this experience, including its failures, for finding common ground for the dialogue with eco-socialism. Moreover, the chapter reveals how ubuntu is located in contemporary African struggles, the most significant being led by women against extractivism. This has also laid

the basis for a global movement to stop fossil fuel extraction and has fed into transnational activist circuits at the heart of contemporary climate justice politics. In this process, eco-socialists are brought into a dialogue with African socialist thought and its understanding of ubuntu. In this regard, the common ground between Léopold Senghor's Negritude and Joel Kovel's ecocentric ethic is interrogated. Finally, the chapter speaks to the challenge ubuntu poses to eco-socialism through its own radical conceptions of ethical praxis and decolonisation. The chapter confirms that transformative activism, confronting the climate crisis and the imperatives of the just transition, is incomplete without appreciating the central role of ubuntu.

In chapter nine, Nnimmo Bassey focuses on the devastating impacts of the climate crisis on Africa. This is occurring despite Africa's limited contribution of four per cent to global carbon emissions. This highlights the importance of a just transition which demands that those countries of the global North most responsible for the climate crisis should take the major responsibility for solving it. This is acknowledged in the logic of 'equal but differentiated responsibilities' which is built into the UNFCCC negotiations process but which is not happening. Among the negative climate impacts are increasing hunger (affecting some 240 million Africans daily) and water scarcity and stress (by 2020 up to 250 million Africans will be affected). These impacts are aggravated by false climate solutions that are not only reproducing the existing carbon pathway but, most importantly, undermining African agriculture. These false solutions are pushing back resilient, indigenous knowledge-based food sovereignty alternatives and intensifying an ecocidal logic that is destroying nature and the conditions to sustain life. Despite these consequences, powerful forces are promoting false solutions to the climate crisis, such as climate-smart agriculture, genetically modified seeds which undermine small-scale farmers, takeovers of African seed systems, land and water grabs and policies such as Reducing Emissions from Deforestation and Forest Degradation. Bassey maintains that this does not halt deforestation and is 'basically a convenient tool for market environmentalism'. At the same time, resistance to the organisations promoting these false colonialist solutions, such as the G7-led New Alliance for Food Security and Nutrition, is growing throughout the African continent. The push back of African food sovereignty is failing due to the limits and contradictions of the false solutions being imposed. Simultaneously, an increasing number of countries are adopting food sovereignty based on agro-ecology to support small-scale farmers, thus enabling the advance of a democratic eco-socialist alternative.

Part Three of this volume draws on themes in previous chapters but focuses on democratic eco-socialist alternatives for South Africa. It positions these alternatives as a challenge to shallow conceptions of the just transition and attempts to highlight climate justice systemic alternatives that are emerging in theory, in debates and from grassroots transformative struggles. Moreover, these chapters advance a post-productivist socialism which challenges twentieth-century socialism's fixation on growth, catch-up modernisation and the development of the forces of production.

Jacklyn Cock, in chapter ten, brings into focus four crucial issues for a South African engagement with the just transition. First, the chapter distinguishes the shallow variants of the just transition as envisaged by capital. Cock's argument is simple: greening capitalism through technology, market efficiencies or even modest reforms merely reproduces a class project and does not address the systemic logic of destruction driving capitalism. Second, she revisits the discrediting of feminism, environmentalism and socialism from the standpoint of exploring alternatives to capitalism. She does this to understand the tainting of these ideologies, even within grassroots common sense, while recognising the strengths, the rethinking and the possibilities these ideologies have for a renewed democratic eco-feminist socialism. Third, she locates the renewal of these ideologies in the context of actually existing struggles. This includes the emergence of eco-feminism, a renewed socialist feminism, environmental justice struggles against racism and lessons being learned by the global Left about the limits of authoritarian, productivist and statist socialisms of the twentieth century. She seeks to find a mode of intersectionality, grounded in praxis, which can bring these new thrusts in feminism, environmentalism and socialism into the struggle for a transformative and deep just transition. In this context, she grapples critically with women's oppression, racism, environmental destruction and class. Finally, Cock argues against 'blue printing' of democratic eco-feminist socialism as part of a transformative just transition, and instead stakes out the necessity for core values to inform such a renewed ideological horizon.

In chapter eleven, Michelle Williams foregrounds the energy–democracy nexus. She locates this within the overall political economy of coal and oil, which in turn resulted in the limiting of democracy to 'carbon democracy', an elite form of democracy that limits democratic claims and labour's power. Labour's power is further attenuated with the rise of market democracy in the context of global neoliberal restructuring. This analysis is further deepened in relation to South Africa's minerals–energy complex (MEC) and how it has,

under apartheid and in the neoliberal context, served to also contain labour. The mechanisms of control and discipline of labour, in relation to coal, are highlighted. Moreover, such an analysis also assists with understanding why South Africa is not taking forward a deep just transition driven by renewable energy. Instead, it is locked into a coal-driven MEC that limits the introduction of renewable energy. Williams highlights that in the South African context the championing of 'socially owned renewable energy' (public, cooperative and communitarian), a proposal advocated by metalworkers, will not only enhance and deepen democracy, but also contribute to the realisation of democratic eco-socialism as part of the deep just transition that is needed.

In chapter twelve, David Fig adds another dimension to the political economy of energy and democracy. He brings into view South Africa's nuclear energy ambitions, given that nuclear has been vaunted as a crucial techno-fix to bring down carbon emissions. Like Williams, he shows how energy choices create a 'democracy deficit'. In this case, he exposes how the opaque world of nuclear power has worked in the South African policy context. Fig traces the African National Congress's initial commitment to openness around the nuclear programme inherited from the apartheid regime, to the current highly secretive, top-down and technocratic push for nuclear. Besides tracing the development of this policy commitment, he raises the corrupt state–business nexus and wider geopolitical relations that are driving South Africa's commitment to nuclear. Most commentators and analysts agree that South Africa's nuclear programme will bankrupt the state. Massive cost overruns are an in-built feature of nuclear programmes all over the world. While the stakes are high, Fig ends on a positive note, highlighting the growing climate justice resistance to nuclear.

Chapter thirteen, by Brian Ashley, foregrounds the climate jobs systemic alternative as a crucial transformative reform in the just transition. Ashley argues that climate jobs have the potential of addressing the twin challenge of the climate crisis and high mass unemployment in South Africa. He provides a crucial analytical distinction between 'green jobs' and climate jobs. In doing this, he also locates climate jobs outside of green capitalism in the South African context. Moreover, Ashley highlights how South Africa's coal-driven energy supplier and monopoly, Eskom, is in crisis together with the entire MEC in which it is located. He views this as an opportunity to introduce climate jobs into the South African economy to enable a transition to a low-carbon economy and to break our dependence on the MEC. Drawing on the research and advocacy work of the Climate Jobs Campaign, he highlights the opportunity

for at least 250 000 direct and permanent jobs to be created in manufacturing and installation, maintenance and extending the electricity grid to link the renewable energy plants. This would result in at least a twenty per cent reduction in GHG emissions. He also makes the case for expanding public transport in ways that reduce our GHG emissions and which can lead to the creation of more than 500 000 climate jobs. Ultimately, if the entire economy is placed on a low-carbon transition and energy path, the Climate Jobs Campaign believes that over three million jobs can be created as we bring down carbon emissions and build the systems necessary for a sustainable society.

Chapter fourteen, by Andrew Bennie and Athish Satgoor, situates the food question at the centre of the climate crisis. While confirming that a globalised and corporate-controlled food system is failing to feed humanity, they argue that its profit-driven logic will come short even further in the context of climate shocks such as droughts. Instead, they argue for an alternative food pathway and system based on combining two complementary systemic alternatives as part of a transformative just transition: food sovereignty and the solidarity economy. Both these alternatives are being championed by powerful anti-systemic movements, such as La Via Campesina and, in the South African context, by movements of waste pickers, the unemployed, students and small-scale farmers converging within the South African Food Sovereignty Campaign (SAFSC). Deepening democracy in food relations through defending and reclaiming the commons, in land, seeds and labour, is central to their perspective on food sovereignty and the solidarity economy. They demonstrate this empirically by highlighting the transformative practice of the SAFSC in terms of a constitutive approach to power, grassroots campaigning, popular education, shifting public discourse and fostering convergence of climate and social justice movements. Bennie and Satgoor highlight the potential for a red–green alliance in South Africa through the activism of the SAFSC and for just transitions to take place from below in local spaces.

Chapter fifteen, by Desné Masie and Patrick Bond, foregrounds a new spatial fix for capitalist accumulation in South Africa: the blue or ocean economy. This site of accumulation has come to the fore as part of South Africa's National Development Plan and the resource nationalism it promotes. Operation Phakisa, the much-vaunted blue economy initiative, envisages big and fast results. Central to this scramble is a methodology that evangelises growth and foreign direct investment, with an expected leap in economic value from R54 billion to R177 billion in twenty years, plus an additional million odd jobs added

to the economy. The lab methodology underpinning Phakisa expects a two to four per cent increase in GDP, at least since 2010. Central to the commodification of ecology in this framework is the extension of the MEC to include offshore extraction of gas, oil and other minerals. Moreover, the expansion in port infrastructure envisaged is meant to boost the outward movement of commodities like coal, and increase massive imports to South Africa and beyond. This drumbeat, fastened to a fast-track methodology, has undermined the efficacy of environmental impact assessments, prompted deregulatory thrusts in key legislation and failed to appreciate serious risks. Masie and Bond expose this egregious commodifying logic and its limits in relation to the collapse of global trade, the crisis of overcapacity in global shipping and the decline in commodity prices due to overproduction. The chapter brilliantly dissects how Phakisa has produced small results, and rather slowly, with a brazen neopatrimonial agenda of ecological commodification driving it. Finally, Masie and Bond show how concrete resistance from below in localised struggles is inventing an eco-socialist response as part of the just transition.

NOTES

1 See http://www.independent.co.uk/environment/climate-change/climate-change-global-average-temperatures-break-through-1c-increase-on-pre-industrial-levels-for-a6727361.html (accessed 17 August 2017).
2 See https://www.carbonbrief.org/how-scientists-predicted-co2-would-breach-400pm-2016 (accessed 17 August 2017).
3 The Vulnerable 20 (V20) Group of countries was inaugurated on 8 October 2015, in Lima, Peru.
4 See founding communiqué of V20 at http://climateandcapitalism.com/2015/10/11/most-vulnerable-nations-form-climate-action-coalition/ (accessed 17 August 2017).
5 Obama has not even been able to secure legislation in the US Congress to support his diplomacy in the UN climate negotiations process.
6 The red–green alliance or forces refers to the strategic and programmatic unity of labour-centred movements (such as trade unions, think tanks, labour networks, parties) and ecological justice forces(including climate justice, water justice, food sovereignty) to advance deep just transitions to achieve systemic transformation.
7 There is a vast literature containing documents from the climate justice movement amplifying voices from within the movement that have made the case for mobilising mass power to deal with the climate crisis. See Angus (2010), Tokar (2010), Wall (2010), Bassey (2012), Bond (2012) and Klein (2014).
8 Foster and Clark (2016) suggest there are only three moments to the development of eco-socialist analysis: greening Marxism, retrieving and defending Marx's

ecology and thinking about ecological problems through Marxist ecology. I disagree and set out a different mapping.

9 Also note Sarkar's (1999) critique of actually existing socialism and capitalism.

10 Two other of Bahro's important books which are crucial to the development of eco-socialist thought are *Socialism and Survival* (1982) and *Building the Green Movement* (1986).

11 The edited collection by Ted Benton (1996) best captures this approach. Prominent in this approach is James O'Connor's second contradiction in capitalism which suggests that capitalism undermines the natural conditions of its existence.

12 The marriage of ecology and Marxism has not been without tension. See Pepper (1993) and Kovel (2003) for critiques of the limits of Deep Ecology.

13 See Wall (2010) for a mapping of these forces. Also see Angus (2010) for a great collection of documents written by eco-socialists within the climate justice movement.

14 V. Satgar, 'The climate is ripe for social change', *Mail & Guardian*, 17 December 2014.

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