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TOWARDS A JUST TRANSITION FOR WORKERS AND AFFECTED COMMUNITIES

INSTITUTE FOR ECONOMIC JUSTICE
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EXECUTIVE SUMMARY

The climate crisis will have devastating effects on those least equipped to deal with it. A notional interpretation of a 'just transition', still embedded in South Africa's problematic economic structure, has emerged from government and the private sector. However, the government and the private sector's response to the calls to develop pathways that transition the nation away from a high carbon economy has so far lacked a deep accountability for loss and damage, and does not sufficiently address measures for adaptation and mitigation.

Public and private sector policies promote market-based solutions and techno-fixes without accounting for socio-economic and environmental justice. This state of affairs will exacerbate inequality and the exploitation of workers and mining communities as the deep structural transformation required for a just transition is resisted by vested interests. On the back of this, we believe that there is an opportunity for labour and environmental struggles to converge due to the fact that economic development has rewarded corporations who shift the real cost of human and environmental health and safety onto workers and society as a whole, to the detriment of local communities and workers.

This position paper critically examines the ineffective policy basis that has thus far been developed by the public and private sector to address the climate emergency and issues of a just transition. It further outlines the framework for an alternative transformative pathway, through identifying six key principles, and posits five subsequent measures that are needed to foster a just transition that truly centres worker's rights and wellbeing.

Smoke from sugar cane processing plant in Bell Glade, Florida, USA.
(Photo: Anne Rippey / Alamy Stock Photo)

1. Principles

The need for systemic, transformative change to underpin just transition pathways has become apparent within scientific and governance narratives, and has long been the demand of labour and civil society. The IEJ has adopted six principles for a just transition that embody a transformative pathway. These principles have been developed through internal workshops, and engagements with different partners in the labour movement and civil society more broadly, where the importance of environmental and climate justice is emphasised. The principles are also grounded in a feminist political ecology and feminist ecological economics approaches to climate change, which recognises the political nature of climate change.

1. **Caring rights based economy:** Given that the existing economy is one which places profit above the rights and wellbeing of people, a foundational principle is that a just transition must lead to a caring rights-based economy centred on human and planetary well-being. This alternative economy must be oriented toward mitigating the climate crisis by reducing environmentally harmful activities and industries, and bolstering adaptive capacities. This principle promotes the concept of a social guarantee, which will ensure living incomes and basic universal services. A social guarantee recognises that we all have shared basic needs to survive and thrive. In providing for this, production should focus on areas such as education, social infrastructure, health, public transport, cultural activities – as well as broader ecological needs such as rehabilitation and biodiversity.

2. **Economy-wide transition for low carbon and climate resilient economy:** A just transition should be economy wide, acknowledging that change cannot only focus on one sector, but that it should take a systemic approach to understanding and implementing adaptation and mitigation measures to achieve a climate resilient, low- carbon economy. While recognising that in a carbon intensive energy mix, mitigation focus should be on electricity, we argue that the complementary and connected need for shifts of production and investment into other sectors important for adaptation to climate change, such as climate resilient infrastructure and agriculture must be prioritised. Job losses due to these shifts must be accounted for to ensure security of job tenure.

3. **Transformation of ownership, distribution and access to resources:** The legacy of inequality in accumulation and access to resources must be addressed by ensuring that there is transformation of ownership, distribution and access to resources. This process should reestablish common ownership, thereby minimising concentration and allowing benefits and opportunities to be shared. The appropriate system of provision for various basic needs should be carefully considered and more strongly emphasise collective provisioning and the role of the state.

4. **Democratic, empowering and context specific:** A just transition must ensure that decision making is democratic, participatory and takes into consideration existing power relations. Further, participatory processes must be conducted with the aim to improve the social conditions for those involved, not simply as a tick box exercise. They should be based on non-hierarchical relations, and must recognise and value diverse forms of knowledge and provide adequate time, space, and conditions for participants to articulate themselves.

5. **Address power using an intersectional feminist lense:** There is social inequality in who bears environmental costs and how these are experienced depending on class, gender, and race. This inequality also affects how resources are distributed, who has access, and who has control. Because of the ways in which power is distributed, the benefits and harms of the transition may also be to the detriment of vulnerable communities and society at large. In order for a transition to be just, the question of power must be addressed and these imbalances challenged.

6. **Demand restorative justice:** Finally, a truly transformative just transition must commit to the bringing about restorative justice that accounts for the historical economic, environmental and social losses and damages incurred by individuals and communities.

2. Measures

To realise a just transition, we propose that the following measures (lead by the principles outlined above) be implemented:

1. **Social policy for low carbon, climate resilient universal public services and social protection:** Crucial within this measure is the consideration of care and provisioning of and for care work. This must be supported by sustainable public infrastructure services and social protection schemes which build resilience to climate shocks such as housing, transport, water, electricity, and public facilities such as schools, clinics, libraries, and community halls, all of which are essential to wellbeing.
2. **Green industrial policy:** A policy that centres public ownership (with special regard for the case of renewable energies), localisation of manufacturing of renewable energy technologies and implementation of a carbon budget to support socially-just outcomes.
3. **Labour policy for green decent work:** It is imperative for a just transition to counteract the increasing trend of poverty, inequality, unemployment, and increasing casualisation of labour. Policies which stimulate job creation, such as job guarantees and employment schemes must be complemented by prioritisation of a decent work agenda that demands rights at work, living wages and commitment to social dialogue.
4. **Equitable land and ownership reform:** Land plays an important role as a means of production and as a site for producing emissions and environmental degradation, as well as being susceptible to climate change and a sink for waste. Control and ownership needs to be shifted from the hands of a few, whether that be to state, common or social ownership, in line with our fifth just transition principle.
5. **Macroeconomic policy:** An adequate response to the climate crisis requires additional spending from the government and shifts in where and how money is spent, with particular considerations for climate-friendly investments and attention to its distributional impacts. These policies include fiscal and monetary instruments that will support maximum domestic resource mobilisation for a just transition. These instruments are important to financing the expansion of and access to sustainable public infrastructure, social protections, green industrial policy, decent work, and land reform. These policies include fiscal and monetary instruments that will support maximum domestic resource mobilisation for a just transition such as revenue raising fiscal and monetary policies, expenditure raising and switching policies and the mobilisation of domestic finance where international climate finance is insufficient.

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ABBREVIATIONS

AIDC	Alternative Information and Development Centre
ANC	African National Congress
COPAC	Cooperative Policy Alternative Centre
COSATU	Congress of South African Trade Unions
CSO	Civil Society Organisation
DBSA	Development Bank of South Africa
DFFE	Department of Forestry, Fisheries and the Environment
DWA	Decent Work Agenda
EUIG	Energy Intensive Users Group
FDI	Foreign Direct Investment
GDP	Gross-Domestic Product
GEAR	Growth, Employment and Redistribution Plan
GHG	Greenhouse Gases
IDC	Industrial Development Corporation
IEJ	Institute for Economic Justice
IFF	Illicit Financial Flows
ILO	International Labour Organisation
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
LEDS	Low Emissions Development Strategy
MEC	Minerals-Energy Complex
NBI	National Business Initiative
NDC	Nationally Determined Contribution
NGO	Non-governmental Organisation
NUM	National Union of Mineworkers
NUMSA	National Union of Metalworkers of South Africa
OMCJ	One Million Climate Jobs
PCC	Presidential Climate Commission
SARS	South African Revenue Service
SOE	State Owned Enterprise
SWOP	Society Work and Politics Institute
TIPS	Trade and Industrial Policy Strategies
UNEP	United Nations Environment Programme
UN OHCHR	United Nations Office of the High Commissioner for Human Rights

FIGURES AND TABLES

This Just Transition position paper serves as a foundation for the Institute for Economic Justice's (IEJ) work on climate justice, just transition policy and advocacy in support of trade unions and civil society organisations

1 INTRODUCTION

The climate crisis threatens the livelihoods and safety of society at large, vulnerable groups in particular, and the planet as we know it. The impacts of climate change will heighten the injustices in our already unequal world if it is not appropriately addressed. Social justice movements have for years been calling on governments and the private sector to take the climate emergency seriously through their demands for a just transition into a low carbon and climate resilient economy.

The South African government and private sector are finally coming to terms with the climate crisis through a range of initiatives that aim to achieve a "just transition". However, current private and public sector policy responses to climate change inadequately address the need for mitigation,[1] and particularly adaptation[2] and loss and damage[3]. Public and private sector policies support the current problematic economic structure, are dominated by market-based solutions, and narrowly promote techno-fixes without accounting for socio-economic and environmental justice. This state of affairs will exacerbate inequality and the exploitation of workers and mining communities as the deep structural transformation required for a just transition is resisted by vested interests.

This Just Transition position paper serves as a foundation for the Institute for Economic Justice's (IEJ) work on climate justice, just transition policy and advocacy in support of trade unions and civil society organisations (CSOs). The document serves two purposes. Firstly, it demonstrates the ineffectiveness of public and private sector climate policy in addressing the climate emergency and fostering a just transition by unpacking the problematic theoretical traditions to which these policies subscribe. Secondly, the document outlines the IEJ's framework for a just transition that embodies an alternative, transformative pathway that promotes the socio-economic well-being of society at large, particularly workers, affected communities, and the environment.

The position paper is structured as follows. We frame, in Section 2, the key features of South Africa's political economy that contribute not only to climate and environmental degradation, but to the triple burden of unemployment, inequality, and poverty that a transformative just transition must address. Section 2 also discusses the impacts of human-made climate change on workers, affected communities, and the environment. The limitations of current public and private sector climate policies in achieving a transformative just transition are unpacked in Section 3 by setting them within the context of the problematic intellectual traditions to which they subscribe. Section 4 discusses the IEJ's principles for a transformative just transition through an explanation of how these embody an alternative, transformative pathway that promotes the socio-economic well-being of all, particularly workers, affected communities, and the environment. Importantly, these principles are drawn from stakeholder engagements with civil society and labour, internal discussions within the IEJ, and progressive theoretical traditions in political ecology, namely feminist political ecology and feminist ecological economics. The principles are then applied to key measures we have adopted for a low carbon and a climate resilient economy that are discussed in Section 5.

1. Interventions that reduce the amount of Greenhouse Gases in the atmosphere which contribute to changes in the climate.
2. Interventions that respond to the current and future impacts of climate change by changing ('adapting') our social, economic, and ecological systems and infrastructure in a manner that minimises harm and exploits opportunities to improve these systems to suit the new climate and environment.
3. Compensation for environmental harm caused by climate change arising from the acknowledgement that climate change will have irreversible and extremely costly impacts which cannot be adapted to.

This means that in order to truly understand why and how climate change has come to be, and in turn how we can adequately address climate change, we need to examine and interrogate the systems of production (and consumption) in our economies.

2

CONTRIBUTION OF SOUTH AFRICA'S POLITICAL ECONOMY TO CLIMATE CHANGE

Climate change refers to a persistent change in the average conditions of the climate's properties over an extended period of time (decades or longer). The climate is a description of the overall weather in an area over a period of time, including temperature, rainfall, wind, humidity, and air pressure. While climate change also occurs due to natural changes, this usually happens over thousands of years. The topic covered here is human-made climate change arising from environmentally-harmful activities associated with the prevailing economic system.

The greenhouse effect is the main reason for this change in the climate. Human activities such as electricity production, cutting down trees for wood, using fossil fuels such as petrol, fertiliser use, and livestock production, all release gases such as carbon dioxide, methane, and nitrous oxide. These gases, known as greenhouse gases (GHGs), are released into the atmosphere where they trap heat from the sun's rays. The greenhouse effect has rapidly increased on account of capitalist industrialisation.

The production of energy, transport, and commercial agriculture and industrial activity under capitalism are increasingly the main sources of GHGs. The greenhouse effect makes the whole world hotter which has a wide variety of impacts. For example, hotter temperatures have impacts on the level of the sea, global wind patterns, ocean currents and saltiness, rainfall patterns, amongst other factors that all interact in complex ways.

This means that in order to truly understand why and how climate change has come to be, and in turn how we can adequately address climate change, we need to examine and interrogate the systems of production (and consumption) in our economies. The purpose of this section is to highlight key features of South Africa's political economy that contribute both to climate and the triple burden of unemployment, inequality, and poverty that must be addressed by a just transition. We start off by looking at how the global economy has contributed to climate change.

2.1. Global economy's historic contribution to climate change

The link between the global economy and massive GHG emissions can be traced back to the time of the Industrial Revolution. It was during this period that Europe saw a change towards a capitalist mode of production defined by:

a. the private ownership of the means of production [such as labour power, capital, and natural resources (for example, land, fossil fuels, water)] achieved through the violent expropriation of these means of production, and
b. the exploitation of worker's labour power, the source of wealth generation, by capitalists (the owners of the means of production) for profit.

Therefore, the capitalist mode of production's sole drive is to accumulate wealth for accumulation's sake, through the exploitation of labour power and the expropriation of nature, which it achieves through externalising the costs of production on society and the environment.

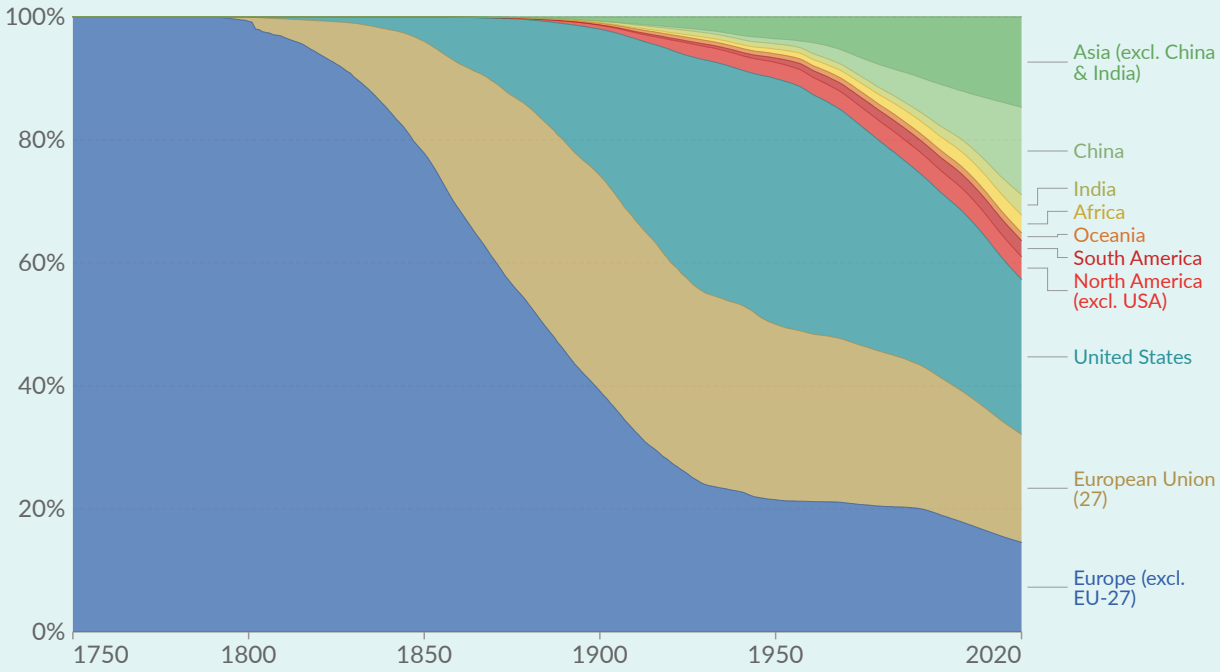
While capitalism did not necessitate the colonisation of new territories, in order to emerge and to grow capitalists sought to colonise territories to gain access to more resources and markets in order to make more profit. This not only caused the destruction of nature and the environment, but almost completely eliminated the wealth of diverse local practices and knowledge systems, by replacing them with the singular logic of capitalism (Jalata, 2011).

This history of industrialisation, capitalism, and colonialism has meant that the Global North is largely responsible for cumulative GHG emissions and the occurrence of climate change. This can be seen in the Figures 1 and 2 on the next page which show that Europe and the United States have overwhelmingly contributed to the total emissions produced in the last 250 years. However, as other countries have industrialised, and started to exploit their own resources, sources of emissions have grown and expanded to include much of the world, including South Africa. Since around 1970, these emissions have exploded, growing exponentially so there was an estimated 1.6 trillion tons of carbon dioxide that had been released into the atmosphere in 2019.

Khayelitsha, Cape Town.
(Photo: Ulrich Doering / Alamy Stock Photo)

FIGURE 1

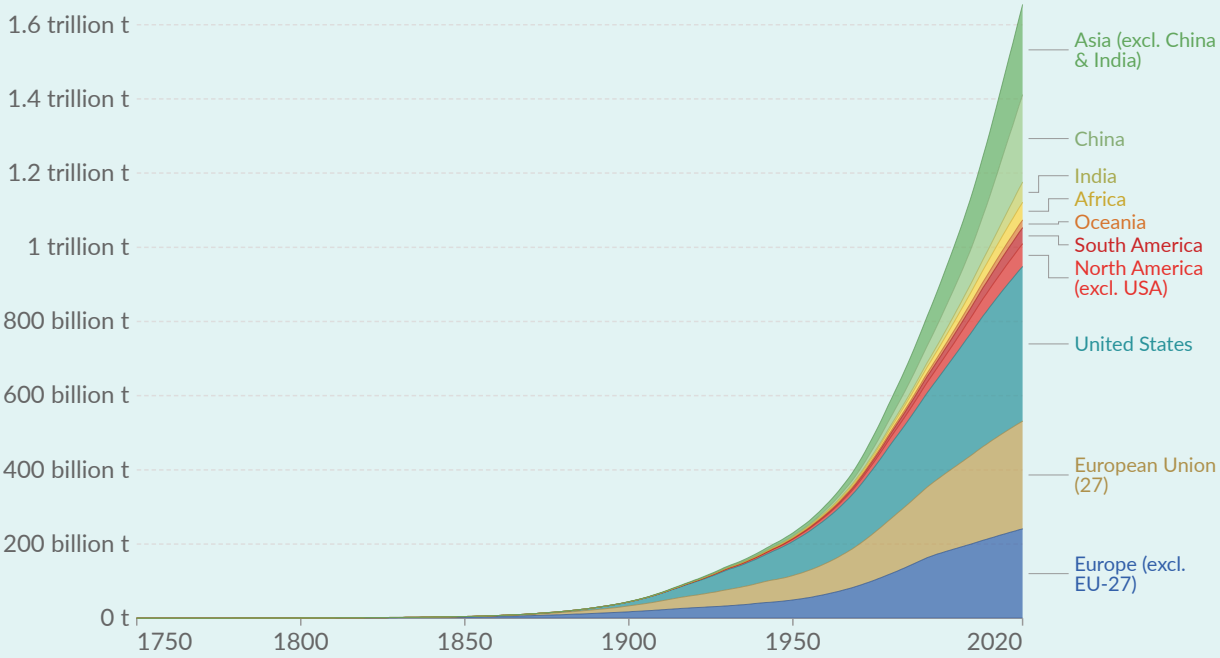
Percentage contribution to carbon dioxide emissions by region, 1750-2019



Source: https://ourworldindata.org/contributed-most-global-co2

FIGURE 2

Regional contribution to carbon dioxide emissions by metric tonnes, 1970-2019



Source: https://ourworldindata.org/contributed-most-global-co2.

2.2. South Africa's political economy's contribution to climate change and impacts on workers, communities and the environment

South Africa is known for being one of the most unequal societies and polluting countries in the world. Income inequality is high, the bottom 75% of the workforce earns 28% of the wage income, while the top 25% earn 72% (Malikane, 2019). Wealth inequality is high, with 10% of households owning 90% of the country's wealth. The country's ecological footprint is high too. The country is the 14th highest emitter of carbon dioxide in the world and the 10th highest per capita. Crucially, emissions are overwhelmingly produced by high-income earners at home and abroad. Data from the Emissions Inequality Dashboard shows that while the 50% of people in South Africa who earned the least income were responsible for only 11% of cumulative emissions, the top 10% accounted for a whopping 54%. Therefore, the causes of the climate crisis, like the country's social crises, are rooted in the economic model that the country has adopted.

This subsection argues that the causes of climate change and high carbon emissions in South Africa are deeply rooted in its particular capitalist system of accumulation, particularly in the form that is highly reliant on the burning of fossil fuel. This economic model is responsible not only for environmental harm, but also for the multiple social crises in the form of the triple burden of inequality (economic and gender inequality), unemployment, and poverty. This is achieved by highlighting three key constituent and interrelated features of South Africa's political economy that contribute to the climate and social crises, namely: the Minerals-Energy Complex (MEC), spatial inequality, and the neoliberal macroeconomic framework. Finally, we discuss how climate change affects workers and vulnerable communities.

Workers arrive for their shift at a South African mine.
(Photo:Robin Laurance / Alamy Stock Photo)

The Mineral-Energy Complex's contribution to Climate Change and Multiple Social Crises

The history of colonialism and apartheid has produced a racialised capitalism. The structure of the economy centred around mining and energy (see Box 1 for further discussion), aptly termed the Minerals-Energy Complex. The MEC is a system of capitalist accumulation based on the alignment of political and economic vested interests within the mining, energy, and related sectors, that has been fundamental to the structure of the South African economy and have shaped the exploitation of productive labour (that is the labour done by workers at their place of work); the exploitation of reproductive labour (the processes involved in maintaining and reproducing people, specifically the labouring population, and their labour power on a daily and generational basis); and the expropriation of nature.

The MEC can be empirically identified as an industrial structure that consists of a set of core sectors in mining, energy, and related industries, with strong interlinkages that operate in relative isolation of non-MEC sectors, particularly labour-intensive manufacturing of consumer goods. These sectors dominate the economy's industrial structure as they have made up between 50 and 62% of total manufacturing output since the 1970s (Newman, 2019).

This economic structure is, in part, responsible for the multiple social crises (inequality, unemployment, and poverty) and environmental harm the country faces today (Fine and Rustomjee, 1996). The MEC contributes to social crises in four ways.

First, the MEC contributes to structural unemployment and poverty because it produces jobless economic growth. This is because it is an industrial structure based on heavy industries which tend to employ more machinery than workers; in other words, these sectors and businesses are capital-intensive, not labour-intensive.

Second, it is dominated by a few major firms that either own or are given preferred access to key resources, for example, minerals, land, water, energy, at discounted rates, some of which are subsidised by household residents. These monopolistic firms are not interested in using these resources to diversify the industrial base in a way that employs people, generates high income, and is not harmful to the environment.

BOX 1

Historical formation of Minerals-Energy Complex (MEC) and Racialised Capitalism

With the discovery of gold in South Africa in the late 19th century, there was a massive push by the settlers to mine the gold for profit. The mining of minerals required large amounts of labour and energy. In order to force Black men to work on the mines, a tax system was instituted along with land dispossession meaning people were forced to work in order to pay their taxes in cash, where previously they were outside the monetary system (Ndlovu, 2017). At the same time, mining companies were able to pay a lower wage due to the subsidisation of the reproduction of labour by the 'family', essentially Black women, who fulfilled the social security functions through unpaid care work (Wolpe, 1972).

Third, the firms in MEC related sectors invest in short-term financial speculation through the accumulation of financial assets more than it does investing in productive activities that create non-environmentally harmful employment; it is highly financialised. This contributes to high levels of wealth inequality.

Fourth, the MEC is based on the exploitation of labour, and the devaluing of reproductive labour without bearing the social costs. Black women bear the biggest social costs of the MEC because not only is the MEC male-dominated with higher average wages than in other sectors and their high exposure to workplace sexual violence. However, as in other sectors, corporate profits are subsidised by the unpaid care work of Black women who support workers in the MEC to get ready for work or to take care of them when they are sick.

The combination of segregation policies and geographical location of economic activity shaped by the MEC has had a number of impacts on the urban working class and the performance of economic activity, and contributed to high GHG emissions.

Mining activities have, by far, some of the worst employment conditions which expose mining workers to occupational health and safety hazards, with a high probability of fatality. The coal sector, for instance, is well known for premature retirement of coal workers due to a broad range of occupational induced diseases (especially respiratory). Black women, within the context of a failing public healthcare system, are left to undertake the carework of these workers without compensation.

The MEC is responsible for environmental degradation and climate change because its growth is based on the expropriation of nature and the intensive use of fossil fuel based energy at preferential tariffs. Mining and energy represent the largest emitting sectors in the South African economy. Eskom remains the single biggest emitter in South Africa, closely followed by Sasol, with approximately 80% of our emissions coming from energy production. However, it is also important to understand who is benefiting from that electricity. The Energy Intensive Users Group (EUIG) is a group of 29 companies, who use up over 40% of South Africa's electricity. These users form part of the MEC and help to shape economic policy. Therefore, while the energy sector in South Africa has unsustainably high emissions, these emissions are serving different groups unequally. A shift towards a low-carbon economy will, therefore, require not only technical changes in how energy is produced, but also a restructuring of the energy sector and the MEC in a manner that moves away from fossil fuels to serve people and the environment, rather than profit.

Spatial Inequality's Contribution to Climate Change and Multiple Social Crises

Over 80% of South Africa's economic output takes place in 20% of its geographical space. This highly unequal and spatially fragmented economy is dominated by four metropolitan cities that contribute 50% to the country's GDP. These are the cities of Johannesburg, Cape Town, eThekwini (Durban), Tshwane (Pretoria), and the East Rand region (Ekurhuleni). The development of the MEC has shaped colonial and apartheid spatial planning as many of these industrial towns and urban centres that emerged developed in support of the growth of the MEC. Spatial economic inequality can be explained by analysing the sources of trade, extraction, and apartheid social planning linked to the development of the MEC.

The exploitation of diamonds and gold in the interior of the country in the 19th century had the effect of changing the once-established role of Cape Town and Durban as trading posts between Western Europe and Asia in the 17th and 18th century, to ports that serviced the export of precious commodities emanating from the interior of the country. The location of industrial activity in Johannesburg and Tshwane and their associated growth, was determined by their mineral endowments. Therefore, the pattern of South Africa's inland development is a consequence of the distances of the location of mining commodities and its associated extraction technology. Railways and energy that provided for mining, also contributed to the development of heavy industry manufactures such as steel, basic metals and fabricated metal products (Krugell and Naude, 2005).

In the 20th century, apartheid reinforced the historical regional development patterns induced by the emerging MEC of the 19th century. The apartheid state achieved this through segregation policies that divided land by racial groups, where Black people were forcibly displaced and relocated to the outskirts of urban areas or the overcrowded 'homelands'. The Natives Land Act of 1913, the Natives Trust and Land Act of 1936, and the Group Areas Act of 1950 concentrated land ownership in the hands of white people and left just 13% for the majority of the population to live on (1913 Natives Land Act Centenary, 2013).

The combination of segregation policies and geographical location of economic activity shaped by the MEC has had a number of impacts on the urban working class and the performance of economic activity, and con-

tributed to high GHG emissions. It has also contributed to inefficient and unequal land use associated with urban sprawl, excessive transport costs, and unequal distribution of public services. This means that workers and the unemployed live far from work opportunities, and they live in locations that do not have sufficient and quality public infrastructure services such as adequate schools, parks, affordable energy, healthcare facilities, and affordable public transport. Further, industrial activity is located in the hinterland instead of coastal cities. Inefficient land use and urban sprawl also contributes to high GHG emissions. This has been exacerbated by the post-apartheid policy of acquiring cheap land on the outskirts of towns for housing development.

Neoliberal Macroeconomic Framework contribution to Climate Change and Multiple Social Crises

In 1996, the government implemented a macroeconomic framework called the Growth, Employment and Redistribution Plan (GEAR). GEAR represented a significant shift away from the kinds of policies the African National Congress had proposed during the anti-apartheid struggle and the transition to democracy.[4] The economic policies implemented through GEAR were characteristic of the neoliberal "Washington Consensus".

The Washington Consensus was a set of neoliberal economic policies, promoted by the World Bank and International Monetary Fund, that mainstreamed the idea of free markets and less state intervention in the economy. Therefore, GEAR viewed the private sector as the leading actor to drive investment and a manufacturing boom driven by the demand for exports in order to create employment. Although economic policy has not been completely static since GEAR was introduced, certain characteristics of GEAR have persisted and set the trajectory for economic policymaking.

Koffiefontein diamond mine, Koffiefontein, Free State Province, South Africa (Photo:Holger Weitzel, Alamy)

4. For an account of the history of ANC economic policy as well as the politics of the shift to GEAR see: Vishnu Padayachee and Robert van Niekerk, Shadow Of Liberation: Contestation And Compromise In The Economic And Social Policy Of The African National Congress, 1943-1996 (repr., Johannesburg: Wits University Press, 2019).

GEAR championed the idea that freer markets dominated by the private sector are better at achieving the objectives of economic stability, and the economic growth required to accelerate employment creation. Economic 'stability' would be achieved through measures that ensured low levels of borrowing, a moderate and stable inflation rate, liberalised capital markets, and predictable and moderate levels of taxation. The following monetary and fiscal policy measures were identified to achieve this objective:

- **Balanced budget:** A balanced budget is one in which government expenditures are in line with revenues. This goes against the Keynesian approach where governments increase spending during recessions to stimulate the economy and save during expansionary periods. This meant that government expenditures were to be cut and public sector investment was reduced.
- **Inflation targeting:** Formally introduced in 2000, and preceded by more informal inflation-targeting regimes, the main purpose of monetary policy is to ensure that the inflation remains constrained within the target range of 3 to 6%.

Within this context, economic growth would be achieved by removing the barriers that made it difficult for private sector enterprises to participate and invest in the economy:

- **Low corporate taxes:** It is believed that private sector investors are attracted to countries with low corporate taxes. Therefore, corporate taxes were reduced from 50% in 1993 to 28% by 2013 to attract investment.
- **Privatisation of state owned enterprises:** It is believed that state owned enterprises (SOEs) are wasteful and inefficient, and that their presence blocks private sector investment and participation. Therefore, some SOEs were fully privatised (for example, the Iron and Steel Company Iscor was sold to Mittal Steel). Others were partially privatised by being corporatised, that is, they had to raise their own money through capital markets (for example Eskom). However, widespread and wholesale privatisation did not occur largely due to trade union opposition.
- **Deregulating the labour market:** It was believed that labour costs were too high. This would make it difficult for our exports to compete in international markets and make it difficult for investors to invest in our economy. Therefore, a labour market which made the hiring and firing of workers was championed, although not fully realised.
- **Trade liberalisation:** Trade liberalisation involves the removal of trade barriers such as taxes and quotas on imports to lessen the cost of imports. It was believed that the opening up of South African industry to global markets would make local firms more efficient, and it would diversify the industrial base for economic growth and job creation (Newman, 2019). Accelerated trade liberalisation that superseded the country's international trade commitments at the World Trade Organisations occurred with devastating impacts on local production.
- **Capital account liberalisation:** This refers to the relaxation of controls limiting the free flow of capital between South African residents and the rest of the world. Capital account liberalisation was aimed at attracting foreign direct investment (FDI) but has vastly accelerated the financialisation of the economy and contributed to currency instability, asset bubbles, and high real interest rates (Isaacs and Kaltenbrunner, 2018). This went hand-in-hand with the liberalisation of domestic financial markets.

Many of these measures were implemented, yet they did not deliver on the intended outcomes. Private investment and FDI into employment-generating productive activities has been low. Economic growth has slumbered and economic instability has been the norm. Crucially, the reduction in public investment has meant that economic activity has not been stimulated in a way that could result in firms expanding production and employment. Importantly, the macroeconomic framework introduced through GEAR and the structure of the economy, has created an extractive economy which takes value away from one group and transfers it to another without compensation for loss and damage.

The South African economy is extractive in five ways:

- **Extractive from reproductive labour:** Expenditure on social services has shifted from being on the rise yet inadequate and unequal from the 1990s to being cut since 2012. The cuts to government expenditure resulting from trying to achieve low debt and deficit targets that have transpired, that is, austerity, reduced the provision and accessibility of quality social services such as healthcare, education. This puts a lot of pressure on poor households, particularly black women who carry the burden of care work, to fill in the gap left by the state through their unpaid labour. This also has an impact on the economy because the required work force for certain sectors is not available due to the crisis of reproduction created by austerity.
- **Extractive from productive labour:** Earnings made from the labour of workers and subsidised by the unpaid care work of the household are not reinvested in employment-creating productive activities. The private sector has taken advantage of financial market deregulation and inflation targeting and made money through short-term speculative investments rather than by investing in long-term employment creating productive activities. When it has made long-term investments, these have tended to be within the MEC. This is in spite of the fact that the MEC employs more machinery than workers and is instead is the source of environmental harm.
- **Extractive from the environment:** The MEC is associated with heavy water usage, the soil is robbed of critical minerals and the air is badly polluted due to mineral extraction and processing. The ecological devastation in South Africa goes beyond its high emissions profile and is also exacerbated by poor municipal services and lax enforcement of environmental regulations.[1]
- **Extractive from South Africa to the Global North:** Accelerated and premature trade liberalisation in the 1990s resulted in many company closures, especially in the manufacturing sector because the harsh competitive global markets made it difficult for local producers to compete. This resulted in premature deindustrialisation. Premature deindustrialisation refers to the reduction in the proportion of jobs in the manufacturing sector at lower levels of income per capita than expected. Therefore, liberalisation has strengthened the economy's reliance on raw materials exports to industrialised countries. This has contributed to the structural unemployment of the South African economy and vulnerability to economic crises.

  Furthermore, deregulation and liberalisation have led to increased illicit financial flows (IFFs), particularly in the mining industry.[5] IFFs can be defined as capital which is moved such that it evades taxation. This leads to a loss of revenue for the government which could support meeting social needs or efforts to respond to the climate crisis through mitigation and adaptation. It is estimated that about 4% of GDP is lost through IFFs in South Africa (AU/ESA, 2015).
- **Extractive from communities to corporations:** Communities affected by mining carry the environmental costs of extractive industries with workers who contract silicosis, crops that are destroyed by polluted water, and unpaid care work providing for communities where basic services are not provided. The extractive industries and corporations are able to reap massive profits from these setups, along with their shareholders.[6]
- **Impacts of climate change on workers and vulnerable communities:** In addition to exploring these root causes above, it is important to understand the deep impacts of climate change. The climate change impacts likely to occur in South Africa include a drier, hotter, and more erratic climate. This change will impact on people, livelihoods, and assets that will result in complex, interconnected, and potentially severe consequences. In addition to these, there are also transition risks. These are impacts associated with the change in policies needed to deal with climate change and decarbonisation processes. This includes, for example, the impacts of carbon taxes, a decrease in coal exports, and a shift to renewable energy.

5. The case of Samancor Chrome in South Africa is a useful illustration of how this works. See Webster, 2019.
6. See Biesheuvel, Atwood and Thornhill, 2021, for recent reports regarding record mining profits and dividend payouts.

Some of the top climate risks facing South Africa and their impacts on workers and vulnerable communities include the following (Global Change Institute, 2020):

- **Crop and livestock failures resulting in food insecurity and inadequate nutrition, as well as a reduction in the viability of the agricultural sector:** Climate change in South Africa is projected to result in temperatures rising, precipitation reducing or becoming less predictable, and the number and frequency of pests and diseases increasing. This is likely to impact the agricultural sector as a whole, particularly through loss of crops and livestock from drought and heat stress. This causes two problems. First, it reduces domestic food production, both household production and commercial, reducing accessibility and increasing costs of food. This impacts on food insecurity and malnutrition, already significant problems for South Africa's poor. One study estimated that under current conditions of climate change, maize production will decrease by 10-16% (Cammarano et al., 2020). Second, it impacts workers and communities reliant on this sector. Small-scale farms typically do not have insurance and financial resources, cannot afford mitigation strategies such as culling herds early, have less access to extension services and have less access to irrigation and/or boreholes (Bahta, 2020). However, even in the case of large farms, it is likely that workers will be laid off or retrenched as production slows in order for the farms to save money.
- **Shortages of fresh water resulting in water insecurity for households, industry, and agriculture:** One of the impacts closely tied to food insecurity above, is that of water shortages and insecurity. South Africa is already facing severe water shortages, with most of the country having experienced drought and water restrictions at some point in the past decade. South Africa is facing a future of reduced water supply and higher demand. By 2035, demand is expected to exceed water supply by 10% (Hedden An Cilliers, 2014).

  This is likely to exacerbate existing inequalities regarding water access. Accessibility for households is already determined more by social factors, such as, the availability of piped water and household income than it is by rainfall or run-off (Cole et al., 2017). It is the rural poor and those living in informal housing that are most affected by water poverty. This will also be worsened by indirect impacts. One study modelled the impact of climate change on water resources for industry (Juana et al., 2012). They found a decline in sectoral output resulting in the fall in wages for low- and medium-skilled workers and loss of jobs. This exacerbates the welfare impacts that poorer households already experience as a direct result of water shortages. Similar effects are likely to be experienced in agriculture, with droughts already having affected agricultural output, value and employment.
- **Heat stress impacting the health of people, especially workers, and animals:** Heat stress occurs when the body is unable to maintain its normal temperature, as it is unable to get rid of excess heat. This results in numerous physical symptoms including an increased heart rate, cramps, dizziness, fatigue, nausea, damage to key internal organs, and in the worst case scenario, can lead to death. It is particularly dangerous for those already vulnerable – the elderly, infants, and children, and those with other underlying health issues. However, there are also other factors that increase vulnerability and exposure to heat stress, such as, one's housing conditions and exposure to heat through work, which is further exacerbated by a lack of shade, wind, and water. Therefore, it is those without access to air conditioning or insulated housing, and those who do physical labour outside that are most impacted. This means that low-income and poor households will be most affected (Jagarnath et al., 2020). Heat stress also impacts other animals resulting in worsening animal welfare, as well as reduction in the quality and quantity of the milk and meat produced by the animals. The likelihood of heat stress increases substantially during heat waves, which are periods of sustained high temperatures. With climate change, and the overall rise in temperatures expected for Southern Africa, the intensity and frequency of heat waves in South Africa is likely to increase (Mbokodo et al., 2020).

- **Loss of ecosystem services such as pollination, nature-based tourism, and ecological stability due to the loss of biodiversity:** As the climate changes, species and ecosystems too need to shift or change, otherwise they will be at risk of extinction. This is in addition to the threats biodiversity faces from other impacts such as habitat transformation for human settlements. While valuable in and of itself, biodiversity also forms the foundation of a number of other services and products that we rely on. For example, agriculture globally, and in South Africa, is heavily reliant on pollination services by insects such as the honey bee (Melin et al., 2014). Without honey bees and the ecosystems on which they rely, this industry, as well as many others, would not survive, resulting in reduced food production and leaving hundreds of thousands of workers without jobs. Other examples of ecosystem services include areas like our National Parks which rely on tourists who specifically visit to view the biodiversity. Negative impacts here could reduce demand resulting in socio-economic downturns for both workers and the surrounding communities (Coldrey and Turpie, 2020).

These risks have the potential to cause devastating impacts across South African society and economies. These impacts are experienced differently by different groups depending on race, class, and gender. The highest rates of unemployment are experienced by Black women, with a narrow unemployment rate of 38.3%, compared to the national unemployment rate of 36.2% (Maluleke, 2021). Black women can also be more vulnerable to climate change impacts because of low employment rates, the burden of unpaid care work, and the fact that they often are located far away from sources of employment (Maseko, 2021).

Workers harvest rooibos in Citrusdal, Western Cape.
(Photo:Giuseppe Cipriani / Alamy Stock Photo)

In this section we critically assess the limitations of current public and private sector approaches to climate policy in shaping alternative transformative pathways to a just transition.

3

MAINSTREAM ECONOMIC APPROACHES TO CLIMATE POLICY AND THEIR IMPLICATIONS ON THE JUST TRANSITION AT HOME AND ABROAD

Globally, the response to climate change has been separated into two main arms. The first is mitigation, which focuses on reducing the amount of GHGs in the atmosphere which contribute to changes in the climate. The second is adaptation which aims to respond to the current and future impacts of climate change by changing ('adapting') our social, economic, and ecological systems and infrastructure in a manner that minimises harm and exploits opportunities to improve these systems to suit the new climate and environment.

A third arm has more recently emerged which looks at compensation for loss and damage caused by climate change. This acknowledges that climate change will have irreversible and extremely costly impacts which cannot be adapted to. There are a wide variety of approaches to climate change mitigation and adaptation policy that have implications on just transitions. In this section we critically assess the limitations of current public and private sector approaches to climate policy in shaping alternative transformative pathways to a just transition. We first set these approaches within the context of the problematic mainstream economic intellectual traditions to which they subscribe.

Mainstream economics approaches to addressing environmental degradation embedded five critical assumptions. First, assumptions made by mainstream economic approaches argue that a rational individual's expression of their free choice through the free market mechanism results in the efficient allocation of resources which enhances social welfare. Furthermore, they assume that human behaviour is explained by an ideal (rational) decision-maker who holds perfect access to information, and behaves according to consistent, self-interested goals.

Second, the unrealistic assumptions that mainstream economics makes about human behaviour, also conveniently exclude the social and political drivers of environmental degradation. Third, mainstream economics narrowly conceives the effects of climate change, such as pollution, as market failures that can be resolved through a market mechanism (usually through a monetary measure such as a tax). We elaborate through the example in Box 2.

The mainstream economics approach to climate and environmental degradation sets the intellectual and ideological context for neoliberal climate policy-making. Therefore, mainstream economics maintains, rather than transforms, the neoliberal economic model.

Fourth, the mainstream approach assumes that natural resources can be substituted or replaced by capital. Therefore, natural resources do not constrain economic activity because technologies and human-made capital (that is, technology) can replace natural resources. This means that diminishing available natural resources can be offset by technological progress, if high enough, and can raise the productivity output per worker indefinitely (Romeiro, 2012).

Finally, mainstream approaches argue that an economy is sustainable if it saves or maintains for future generations more than the current losses in: a) human capital (for example, skills and technology), b) human-made capital and infrastructure, and c) the depletion of natural capital (such as wetlands and forests) (Romeiro, 2012). Therefore, development is considered sustainable if the loss of environmental goods are offset by human-made capital. Consequently, proponents of the concept of sustainability classify human influence on the environment as an exclusively economic problem. In this way, sustainability is seen merely as the maintenance of economic value, measured by market prices (Romeiro, 2012).

Two conditions must be met to ensure that mainstream economics can assign market prices to all forms of capital and types of resources. First, there must be complete substitutability between the different forms of capital (for example, between natural products and human-made or recycled ones). Second, all types of resources must be comparable and measurable in monetary terms (Romeiro, 2012). Therefore, 'sustainability' is understood less as a human-made climate change and natural resource scarcity problem, and is more about balancing out the monetary costs and benefits of the effects of climate change within a market economy.

BOX 2

How mainstream economics resolves pollution through the market mechanism

The market price for a good or service is normally made up of the profit margins and the cost of production and distribution (for example, labour and capital) used to produce and sell that good or service. The price does not, however, take into account the negative impact that the production and sale of that good or service has on the environment. Any negative environmental impact that comes from the production of a good or service that is not captured in the pricing of those goods is known as an 'externality'. Mainstream theoretical approaches argue that externalities such as environmental harm, can be dealt with by adjusting prices so that buyers or users pay for the environmental harm caused by the production and sale of those goods. The idea is that 'internalising' or capturing these negative externalities in the price will reduce the demand for the good or service, therefore the production of these will also be reduced.

The mainstream economics approach to climate and environmental degradation sets the intellectual and ideological context for neoliberal climate policy-making. Therefore, mainstream economics maintains, rather than transforms, the neoliberal economic model. The approach has supported five policy positions that are playing out in the climate policy space both at home and abroad which have a limiting effect on transformation towards low- carbon and climate- resilient economies. As discussed below, these five neoliberal climate policy positions include: a lack of climate ambition, the focus on mitigation, reliance on market solutions, technological solutions as a substitute for nature, individualised responses, and a lack of accounting for the transition risks to workers and communities.

3.1. Lack of climate ambition

Emission targets set at the national and international levels are as much influenced by political interests as they are informed by the scientific evidence. Powerful vested interests can shape the outcomes of national and international GHG emission targets. Therefore, theoretical traditions that are underpinned by a political economy approach are vital in analysing policy propositions on climate change. As discussed in the second point above, mainstream economics ignores the political and social drivers of climate change which have an influence on climate policy options. Therefore, mainstream economics approaches do not have the tools for us to analyse how power influences climate policy.

Much of the climate policy debates in South Africa and internationally are about whether or not governments have sufficient climate ambition. South Africa's climate policy has followed a similar path to global climate policy trends in relation to its ambition and South Africa's GHG emissions targets are not ambitious enough. The Department of Forestry, Fisheries and the Environment (DFFE) has put forward a goal range for emissions of GHGs for our Nationally Determined Contributions (NDCs). According to most climate activists, and the Climate Action Tracker, our targets will not be sufficient to achieve even the 2°C temperature target, when we should be aiming for at least 1.5°C. This lack of ambition replicates an international trend. The current goal of the Paris Agreement is stated as: "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels" (United Nations Framework Convention on Climate Change, 2015). However, even at a 1.5°C increase in temperature, countries in many parts of the Global South are expected to experience catastrophic impacts and warming by more than double this amount. Therefore, climate activist Naomi Klein states that "this well-known target, which supposedly represents the 'safe' limit of climate change, has always been a highly political choice that has more to do with minimising economic disruption than protecting the greatest number of people" (Abimbola et al., 2021). Despite this, the evidence suggests that, based on current trajectories, we have little hope of meeting even these insufficient goals and this is due to the vested interests that have captured climate policy to suit their own ends.

3.2. Prioritisation of mitigation over adaptation and loss and damage

The over reliance of the mainstream economics approach on market mechanisms to disincentivise economic activities from creating negative externalities such as pollution, has meant a predominant focus on mitigation. The focus on mitigation in mainstream economics has corresponded with its prominence in international and domestic climate policy. The mitigation focus was particularly strong when climate policy was emerging based on the first report by the Intergovernmental Panel on Climate Change7 (IPCC) in 1990 as there was still hope that it might be possible to reverse the effects of climate change if action was taken.

This highlights how mainstream economic approaches are not well equipped to deal with the reality brought about by climate science – which is that climate change is already happening and adapting to its impacts (such as severe drought experienced in South Africa) is just as necessary as mitigation efforts. This is especially important considering the impacts of climate change have mostly been experienced by countries in the Global South, and more vulnerable groups including Black people. Partially because of this, countries of the Global North have been slow to shift towards addressing the impacts of climate change as they have not directly felt them.

The prioritisation of mitigation over adaptation has shaped climate policy in South Africa. Recent developments in South Africa's climate response include a Climate Change Bill which was developed in a top-down

7. The IPCC is a body within the United Nations which is responsible for providing scientific research related to human caused climate change.

manner by the DFFE. South Africa's Low Emissions Development Strategy (LEDS) has also recently been approved. While the LEDS claims to aim for transformation, the strategy focuses on mitigation and technical pathways to a low-carbon economy which risks falling into the trap of technical fixes (DFFE, 2018). The Climate Change Bill establishes the Presidential Climate Commission (PCC), which started meeting in 2021, is chaired by the President, and comprises an encouraging diversity of voices, although it faces some key issues around the process of decision-making and its role as an advisory body (Takouleu, 2020). The Climate Change Bill highlights the need for both mitigation and adaptation, but does not mention addressing loss and damage due to climate impacts.

3.3. Reliance on market solutions and limited state intervention

The idea within mainstream economics that the environmental harms emerging from economic activities are as a result of market failures that can be resolved through market mechanisms has implications for the role of the state in climate policy. This market fundamentalism has meant that the state's role in climate policy is merely regulatory in nature, or supports the functioning of markets.

These market mechanisms, regulated by the state, include payments for ecosystem services (an attempt to preserve ecosystems by paying owners of land to maintain them) and carbon trading (a system of trading carbon 'credits' which attempts to limit total carbon emissions). Rather than addressing the root causes of the climate change crisis and reducing emissions, these market systems create opportunities for financialisation of the environment and profit for financial capital.

The South African government has largely adopted market-based mechanisms in which the state carries a regulatory role in responding to climate change. Various levies have been implemented over the last 10 years, including an environmental levy on new vehicle purchases implemented by the South African Revenue Service (SARS) which is paid by manufacturers, and levies on electricity from non-renewable resources which is also

Eksom's Kusile power station, Mpumalanga.
(Photo: Childa Santrucek / Alamy Stock Photo)

administered by SARS and paid by electricity producers. Carbon taxes were supposed to be implemented from 2015 but were delayed until 2020. However, the carbon tax proposed is not high enough to actually encourage a shift to alternative energy sources. Energy efficiency measures in building design were introduced in the building sector in 2011 through the National Building Regulations and Building Standards (SANS 10,400).

These instruments, alone, are rendered ineffective in mitigating climate change. In principle, nature cannot be valued. Moreover, cost-benefit analyses used to measure the costs and benefits of externalities caused by economic activities do not capture the full extent of the social and environmental costs. Therefore, these instruments will always undervalue the environmental harm done to nature (the latter includes society) Importantly, the instruments propagate the same problematic production and consumption structure that causes environmental degradation and climate change rather than changing it in a manner that sustains the ecosystem.

3.4. Technology as a substitute to nature

Another strategy of neoliberal climate policy is its over reliance on technological fixes as a means of mitigating climate change. This policy position corresponds to the fourth assumption of mainstream economics discussed above on the relationship between technology and nature. Recall that mainstream economics approaches assume that natural resources can be replaced by human-made technology. Partially based on this assumption, mitigation measures which call for a reduction in GHG emissions that countries have signed up for, have not actually been implemented. The combustion of fossil fuels continues to increase and the proportion of global energy generated by fossil fuels has not declined (Somerville, 2020). Since 1990, leading global agencies, such as the IPCC have made assumptions about climate policy relying on "the future deployment of untried and untested so-called negative emissions technologies such as carbon capture and storage" (Somerville, 2020). Only in the last three years have they started to express the need for significant shifts in the global economy to mitigate climate change. However, the over reliance on technological fixes in climate policy in ways that cause further environmental harm continues to be popular as they have held that ecological modernisation will allow the world to develop out of climate change by building ever more complex technology (for example, carbon capture and storage facilities which are meant to reduce rising temperatures by re-capturing GHGs).

The implication is that technology is the cure to the limits of natural resource extraction (Romeiro, 2012). While technology can be used for climate change mitigation and adaptation, there are environmental and social dangers in viewing technology as a substitutable to nature rather than complementary to nature. The environmental and social costs of the mainstream thinking on the substitutability of technology to nature are its negative effects on resource depletion and the continuing scourge of environmental degradation associated with the appropriation of nature. Not only are certain technologies – which are promoted to mitigate climate change – not yet available or cost effective (such as carbon capture and storage), it is also unlikely that technology will be scaled up quickly enough to make the significant impact on emissions required to address climate change (Allwood, 2020). This is why systems change is required to address climate change.

3.5. Individualised responsibility

Another strategy of governments and global institutions who uphold the capitalist status quo is to shift the responsibility of reducing GHG emissions to individuals and communities. Examples of these strategies include programmes which encourage the public to check their individual 'carbon footprint' (an analysis of daily habits and how much carbon is used) or aim for a low-carbon lifestyle. These policy proposals correspond with assumptions made by mainstream economics approaches that argue that a rational individual, empowered by perfect information and their consistent self-interested goals, express their free choice through free

market mechanisms which result in efficient allocation of resources. However, this ignores the evidence that information is never perfect and humans' preferences are not always consistent, nor are they free to exercise them as their behaviour is influenced by social norms, standards, advertising, access to resources, and so on. Therefore, leaving it up to the individual to make choices about their carbon footprint impact within a context of imperfect information, unequal access to resources, social norms and advertising is not an effective climate policy strategy.

This can also be seen in approaches to adaptation, particularly in the way resilience is framed. Resilience is seen as the opposite of vulnerability as it means that there is flexibility, preparedness, and the ability to recover from disasters. However, resilience too can be linked to the trend of shifting responsibility for survival onto individuals and communities, instead of holding corporations and public institutions accountable for climate change and for the provision of social protection. Focusing on building the resilience of individuals and communities can also distract from the need to question the broader economic system of capitalism which is the root cause of many people's lack of resilience in the first place. Responsibility for climate change is individualised if the response only aims to improve resilience with small-scale incremental projects for vulnerable communities rather than building resilience by enhancing political representation of vulnerable communities and empowering communities to demand transformation and systems change.

3.6. Does not account for transition risks for workers and communities

Mainstream economic approaches highlight the allocative efficiency of markets which ignores wider socio-economic and socio-political questions, particularly when it comes to climate justice. Mainstream economic approaches would therefore not account for the cost borne by workers and communities who are dependent on fossil fuels in the transition. The transition to a low-carbon and climate resilient society and economy will have significant impacts for workers, small businesses, and communities that are dependent on coal or other fossil fuels if it is not done in a just manner. For example, over 120 000 workers are employed in the coal value chain in South Africa which will be impacted by the transition to a low-carbon economy (Makgetla et al., 2019). Decreased demand for coal, both locally and internationally, would, alongside pressure to decarbonise, reduce supply of coal and carbon-intensive mining. This would lead to closing down coal power stations and mines which would include retrenchments of workers in the coal value chain and loss of livelihoods for those dependent on the value chain. The transport sector will also be impacted by the transition and workers and small businesses will be vulnerable to job and income losses if the transition is not properly planned. An unjust transition would see large numbers of workers retrenched with nowhere to go and may result in a migration into urban centres which are already under pressure to provide housing and sanitation for the existing population (Global Change Institute, 2020).

In summary, mainstream economic approaches to climate policy have underplayed mitigation targets in favour of the status quo and prioritised mitigation over adaptation. They have also proposed market solutions to the problem of climate change, further expanding opportunities for financialisation and profit rather than transforming how society works. They highlight technological solutions without challenging power dynamics and inequality, place the responsibility for a response to climate change on the individual instead of industry, and fail to address the socio-economic impacts of a transition for those most vulnerable. This calls for a rethinking of approaches to climate policy which places people, justice, and well-being at the centre. The next section will propose an alternative approach for a transformative just transition.

The just transition concept and language originated in the trade union movement in the United States, borne out of struggles to improve worker health and safety in polluting industries during the 1970s.

4

PRINCIPLES FOR A TRANSFORMATIVE JUST TRANSITION PATHWAY

As outlined above, the incremental and market-based responses to the climate change crisis are not working. There is a need for transformational approaches to climate change. Even the IPCC, who for 30 years promoted technical fixes, has recently acknowledged that limiting global warming will require "rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems" (IPCC, 2018).

There is broad agreement that there is a need for a system change towards a low-carbon and climate- resilient economy through a just transition. However, there are diverging opinions on what a just transition pathway should be and how it should be constituted. This section outlines the IEJ's framework for a just transition that embodies an alternative transformative pathway that promotes the socio-economic well-being of society at large, particularly workers, affected communities and the environment. The section does so by outlining six key principles for a just transition which should inform policy proposals and interventions. First, we discuss the different ways in which the term is understood in the trade union movement and in civil society.

The just transition concept and language originated in the trade union movement in the United States, borne out of struggles to improve worker health and safety in polluting industries during the 1970s. The term has subsequently become popular and has been adopted by a variety of groups and sectors, who used the term in multiple, and sometimes competing, ways. This has resulted in tensions and divergences which can be summarised as divergences in: 1) the scope of the transition; 2) the depth of the transition; and 3) participation and inclusion in the transition.

As in the rest of the world, it was the trade union movement that brought the term into debates on climate change and popularised its use in South Africa. This can most clearly be seen with COSATU's Climate Change Policy Framework released in 2011. In it, the union federation calls for a "just transition to a low-carbon and climate resilient economy" (COSATU, 2011). Their approach to the scope and depth of the tradition advocates for a holistic, and transformative transition. For example, it highlights the need for access to energy, water, healthcare, public transport, and food security for all. It also takes a firm stand on identifying the cause of climate change – capitalist accumulation – and makes central the question of justice. Moreover, the framework document champions an inclusive approach to the transition that does not disadvantage the working classes, or developing countries. Fundamentally, it calls for "the redistribution of power and resources towards a more just and equitable social order" (COSATU, 2011).

There is concern amongst civil society and labour that the radical potential of the just transition is diluted in the private sector approach, which is akin to greenwashing the status quo

However, there is also a huge amount of diversity within the labour movement and different unions adopt varying positions or foci within the just transition (Cock, 2012). For example, the position of the National Union of Mineworkers (NUM) has been notable in its promotion of 'clean coal' and carbon capture and storage technologies to address the crisis, and has advocated for the extension of the life span of some coal-fired power plants. The National Union of Metalworkers of South Africa (NUMSA) has been particularly critical of the role of the private sector in renewable energy production, drawing attention to the discussion on ownership and control in the just transition debate (Cock, 2012). This has been a central part of the contestations around the transition to renewable energy and one of the key areas of divergence.

South African NGOs in this field have also largely adopted the terminology of the just transition and have worked in the past several years to understand its use, provide policy options for implementation and illustrate experiences from the ground. These organisations include Project 90 by 2030, Society Work and Politics Institute (SWOP), the Alternative Information and Development Centre (AIDC), the Cooperative Policy Alternative Centre (COPAC), the Trade and Industrial Policy Strategies (TIPS), groundWork, Friends of the Earth, the Centre for Complex Systems in Transition, and 350.org, amongst others. Civil society adoption of the principle grew out of a collaboration and convergence with the union movement in the early 2010s, which saw alignment on a number of climate change issues. Since then, however, there has been some diversification around the use of the term, as many NGOs have attempted to distinguish themselves from the narrower, and mainstream use of the term. This has led to the use of the term 'deep' just transition, to allude to the more transformative and holistic approaches.

The private sector has more recently adopted the concept of the just transition but already holds quite substantial influence in how it is understood in the South African context. The National Business Initiative (NBI) has contracted the services of the Boston Consulting Group to develop a just transition pathway project which has been picked up and used in various presentations by the Minister of the DFFE and the Presidential Climate Commission. The private sector approach tends towards a focus on technology and preservation of the status quo. There is concern amongst civil society and labour that the radical potential of the just transition is diluted in the private sector approach, which is akin to greenwashing the status quo (Wei, 2018).

We believe that there is an opportunity for labour and environmental struggles to converge due to the fact that economic development has rewarded corporations who shift the real cost of human and environmental health and safety onto workers and society as a whole, to the detriment of local communities and workers. Thus, we argue that labour and the rest of civil society can work together to demand a shift in the economic system. This lays the ground for a campaign for a just transition which aims to do just this – fight for an economic system which no longer exploits nature and the well-being of vulnerable communities. Therefore, IEJ views a just transition as an economy-wide, deeply transformative and participatory process.

The IEJ has adopted six principles for a just transition that embody a transformative pathway. These principles have been developed through internal workshops, and engagements with different partners in the labour movement and civil society more broadly, where the importance of environmental and climate justice is emphasised. The principles are also grounded in a feminist political ecology and feminist ecological economics approaches to climate change, which recognises the political nature of climate change. Further, it acknowledges that society and the economy are not separate from 'nature', but are embedded within it and form part of it. Therefore, concerns of the environment and of society cannot and should not be tackled separately. From this perspective, the IEJ has adopted the following six principles for a just transition.

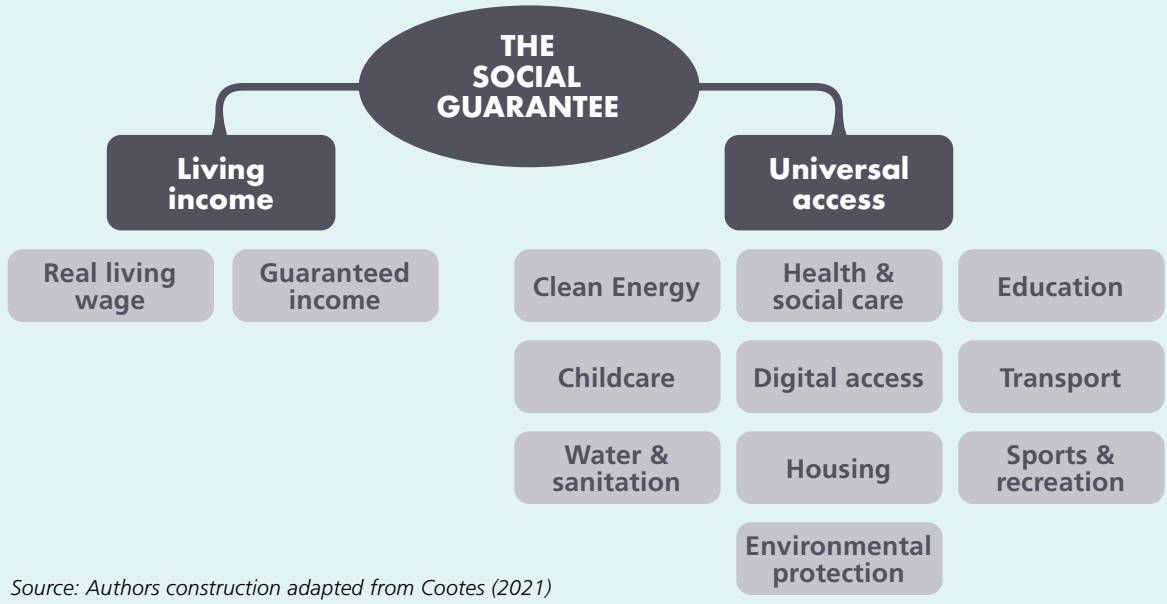
4.1. A just transition must lead to a caring rights-based economy centred on human and planetary well-being

The existing economy is based on a highly extractive and exploitative political and economic system that has harmed people and the environment. It continues to prioritise profit over people, resulting in slow action on climate change and unjust outcomes for the majority. In order to address this, we need a new economy, one that is based on a fundamentally different objective and structure. We advocate for a caring rights based economy. A caring rights based economy seeks to rethink what is valuable in the economy, prioritising well-being and respect for one another and the environment over money and power to allow for the flourishing of individuals, society and the ecosystem. A caring rights based economy recognises, values and guarantees the importance of care, which is fundamental to well-being.

A just transition based on a caring rights based economy must guarantee everyone the right to life's basic needs that secures human and planetary wellbeing. A basic need does not mean a minimalist approach to needs. Rather, basic needs mean essential and sufficient needs aimed at the flourishing of society and the ecosystem (ref). Cootes (2021) idea of a social guarantee to life's basic needs helps us to empirically define the socially useful goods and services that are foundational to a caring right based economy that satisfy human and planetary wellbeing. A social guarantee recognises that we all have shared basic needs to survive and thrive. These shared needs are not substitutable, are complementary to each other and may come in the form of living incomes and universal basic services. Living incomes consist of a) universal basic incomes for all and b) living wages that should be derived from work that is secure and non-threatening. Need theorists have identified essential needs that can be satisfied by universal basic services. This has implications for production and what activities are valued and prioritised. Therefore production can be focused on human needs such as education, social infrastructure, health, public transport, cultural activities – as well as broader ecological needs such as rehabilitation and biodiversity. This alternative economy must be oriented to mitigating the climate crisis by reducing environmentally harmful activities and industries, and ensuring that adaptive capacities and capabilities are built to secure the well-being of all. This is not only about social services, but creating the conditions for all people to live their lives with purpose, in solidarity and with the resources to flourish. This vision lays the foundation of a just transition. Figure 3 provides an incomplete list of examples of these essential needs.

FIGURE 3

A social guarantee for wellbeing



Source: Authors construction adapted from Cootes (2021)

Crucially, social guarantee can take a normative position that is grounded in a moral framework. Therefore, basic needs that constitute a social guarantee can be restated as social economic rights or entitlements aimed at securing human and planetary well being. Social economic rights are legal claims "possessed by right bearers that corresponding duty bearers must take seriously" and "social rights have provided a fundamental moral argument for welfare states that recognise collective obligations to meet basic needs of citizens for health, care and education".

4.2. A just transition must be economy-wide and result in low carbon and climate resilient economy

Climate change will impact every aspect of society and the economy. It will require changes of some kind in every industry, whether that be to technologies, value chains, or adaptive infrastructures. There will also be economy-wide changes that need to be mainstreamed across society, such as refocusing the economy on human needs and well-being. Industries are also intersecting, interdependent, and inevitably in flux, and therefore to ensure job protection and creation, and successful planning for the transition, a co-ordinated, holistic, and economy-wide approach is essential.

Our economy-wide approach is not sectorally neutral. It recognises that there are certain sectors, such as electricity, that need to be prioritised due to their emissions-intensive nature. There are also other sectors such as transport and industry that will require change. And because of their linkages to other sectors, a reduction in emissions will lower the carbon intensity of the economy and have a widespread impact on the structure of the rest of the economy. There will also be impacts of climate change which necessitates changes for adaptation, such as in climate resilient infrastructure and agriculture.

All of these changes will require new forms of production and work, which needs investment and planning. Therefore, taking an economy-wide approach to a just transition, that acknowledges sectoral specificities and linkages, is required to plan for changes across different sectors, to account for complete shifts in production and consumption and to ensure that where jobs are lost in one sector they can be picked up in another.

This also requires an understanding of shorter-term and longer-term needs. A just transition must address the social and environmental crises people are experiencing currently. However, it must also take into account longer-term changes and requirements to help provide the structures for improved well-being for future generations.

This level of planning requires a capacitated and aligned state. It is through the state that priorities can be made, cross-sectoral intersections identified and managed, and provisioning made for social infrastructure and protections. However, this does not mean that the state acts in isolation. The state must act in the interests of well-being for those who live in South Africa, and beyond, and therefore must be guided by those people, without whom, the transition will not be just.

4.3. A just transition must allow for the transformation of ownership, distribution and access to resources

A caring rights based economy considers the system of provision that will best deliver on a low carbon and climate resilient economy for planetary (including human) wellbeing. The current economic system is predicated on private ownership of land, capital and resources, which has allowed for the accumulation of wealth in the hands of the few. This has meant that while a few have profited from highly polluting activities which have caused climate change, as well as affected the health of millions of people, it is the majority that will have to face the consequences. By recognising that climate change will affect those least responsible, a just transition must re-establish common ownership of resources so that benefits and opportunities can be shared.

The question is how are these essential needs to be provided? Figure 4 is adapted from Cootes (2021) and shows a spectrum of needs based on different systems of provision. Where the needs are situated along the spectrum is highly dependent on the social contexts of the country or locality in question. However, the figure represents what is typical based on the evidence provided by Needs researchers. There are needs that can be satisfied by the individual through market transactions (for example, food, clothing).

There are those in the middle of the spectrum that are usually satisfied by some combination of collective system of provision and direct payment to ensure the affordability and access (for example, energy, housing, transport) because provision by markets alone would make these needs unaffordable and inaccessible. Finally, there are needs that most people can only satisfy through a collective system of provision (for example, water and sanitation, education, healthcare).

FIGURE 4

Spectrum of provisioning for essential needs

Source: Authors construction adapted from Cootes (2021)

This can take several forms and state ownership, investment, and provisioning is central at the national and local levels. Ownership by the state allows for redistribution and cross-subsidising, as well as socialising the benefits of public investment, which otherwise ends up in private hands. When essential services such as education and healthcare are privatised, it also results in a shift in power and reduced democratic control. For example, in the case of electricity, generation must remain in public hands so that a select few companies are not benefiting while the rest pay for the transition through higher tariffs.

This privileged ownership has also inhibited access to common resources for the majority. For example, most people do not have access to adequate land. This is highly determined by race and gender, even with processes such as land reform disproportionately benefitting men, which has implications on other resources such as water. Access to resources must be equitably shared, with considerations of the climate impacts and how they will affect availability and quality of resources.

4.4. A just transition must be democratic, empowering and context-specific

The just transition must be done in a participatory and democratic way that empowers the vulnerable and marginalised, and values local knowledge and experience. Mainstream approaches to the just transition, as well as policy making more broadly in South Africa, have been top-down, undemocratic, and biased towards private sector interests, and the opinions of 'experts'. In doing so, they have failed to acknowledge the embedded knowledge held by communities and the value of their experiences and solutions for addressing the problem. This has often meant that policies are implemented without an understanding of the local context, resulting in outcomes which leave people worse off. Highlighting the importance of local knowledge also allows for the dominant narratives, which are used to perpetuate injustices and inequalities, to be questioned, in line with feminist critiques of knowledge creation.

Mainstream approaches to the environment fail to challenge existing power structures, rather acting within them.

However, advocacy for participation should also recognise that truly empowering and transformative participation cannot be reduced to representation and consultation. In many cases, public participation is simply used as a cover for legitimising pre-existing processes and outcomes. Therefore, all participatory processes must be based on the aim of improving the social conditions for those involved, and helping transform society based on equity and justice. It should be based on non-hierarchical relations, recognising and valuing diverse forms of knowledge, including participants at multiple stages in the process, highlighting a diversity of voices, and providing adequate time, space, and conditions for participants to express themselves. It must also recognise that 'communities' are not monolithic; they show the same power relations of society more broadly. Therefore, it is essential that all participatory processes, particularly at a local level, also actively provide space for vulnerable groups, such as women and disabled people, and do not perpetuate structures of marginalisation.

4.5. A just transition must address power using an intersectional feminist lens

The problem of climate change and the failure to adequately address it, are the result of imbalances in power between those that are invested in the current system and profit from its continuation, and those that will be most harmed by unmitigated climate change. Mainstream approaches to the environment fail to challenge existing power structures, rather acting within them.

There is also social inequality in who bears environmental costs and how these are experienced depending on class, gender, and race. This inequality also affects how resources are distributed, who has access, and who has control. Therefore, climate change and environmental degradation need to be re-politicised to challenge technocratic policies and interventions by exposing the interests and influences of various lobbies. This also requires re-politicising climate change from a perspective of race and gender, recognising that the harms and benefits are also co-determined by existing forms of oppression.

(Photo:Alamy Stock Photo)

The demand at its most fundamental level is for the provision of basic services that are necessary in order to live with dignity (housing, electricity, water, education).

Therefore, central to the debate on the just transition is the question of power. Because of the ways in which power is distributed, the benefits and harms of the transition may also be to the detriment of vulnerable communities and society at large. In order for a transition to be just, the question of power must be addressed and these imbalances challenged. It is only in this way that a transformative alternative can be created. The main mechanism through which this will be achieved is through social movements and solidarity.

Power also manifests at multiple levels, from the international to the local, to the community (and even to the household). Power must be addressed at all these levels to ensure justice that is multi-scalar and truly reaches those least empowered.

4.6. A just transition must demand restorative justice in order to be transformative

Contemplating what justice means to various interests and how it should be embedded in policy and action in the context of a just transition is ongoing. McCauley and Heffron (2018) discern three aspects of justice that could be institutionalised to address climate, energy and environmental injustices more broadly; distributional justice, which addresses inequities in risk, responsibility and resource allocation (i.e. Principle 4.3); procedural justice (i.e Principle 4.4), which ensures inclusive and representative participation in decision making; and restorative justice, a deep approach to providing not just reform, but redress for the historical economic, environmental and social losses and damages incurred by individuals and communities. Montmasson-Clair (2021) recognises these dimensions of justice as falling within the narrative of transitional justice- thus situating the need for justice to be cognisant of and to respond directly to a history of large- scale and normalised human rights abuses (Office of the United Nations High Commissioner for Human Rights, etc), such as those established during colonisation, apartheid and further entrenched by neoliberal economic policies. The IEJ position paper supports procedural and distributional justice and restorative justice.

Restorative justice supports the call for transformational and fundamental change to be realised through the just transition process. It acknowledges that a just transition must result in net positive effects in all spheres and cannot perpetuate inequalities in rights realisation and well being. Key to implementing restorative justice is identifying the losses and harms incurred by communities under extractive industry and providing redress for these harms. The demand at its most fundamental level is for the provision of basic services that are necessary in order to live with dignity (housing, electricity, water, education). Further to this, it must be ensured that the deployment of green technologies, most importantly renewables, be socially- owned, at least in part, and that the benefits from these technologies are accrued to communities. Additionally, the question of compensation or reparation for past, current and projected damages must be addressed as part of the application of restorative justice principles at both the local and global climate scale.

These measures are aimed at building a caring rights based economy in which low carbon and climate resilience is fundamental to planetary wellbeing

5

MEASURES FOR A JUST TRANSITION TO A LOW CARBON AND CLIMATE RESILIENT ECONOMY

A caring rights based economy must ensure that people have access to living incomes that are derived from a combination of work that is secure and non-threatening, and universal basic income support for all. These living incomes will ensure that they can at the very least meet their basic needs that can be provided for by the individual through market purchases (for example, food and clothing).

Green industrial and labour market policy can make this possible if it is geared towards: a) generating employment through the production of socially useful goods and services that satisfy human and planetary wellbeing; and b) ensures that the 'green' jobs that are created are 'decent green jobs'. Social policy can also meet these needs through social protections such as through a universal basic income guarantee. Dis-

Kids play in Alexandra, Gauteng.
(Photo:Rick Senley / Alamy Stock Photo)

tributional policies are also essential. For example, equitable land redistribution policies instil dignity and can help people diversify their livelihood strategies.

Essential needs that can be provided through collective systems of provision require social policies that ensure access to universal public services that not only serve human wellbeing but also have been produced in a manner that preserves the environment. However, none of this is possible without green macroeconomic policy. Macroeconomic policy is required to mobilise the necessary domestic resources required to build a caring economy that centres human and planetary wellbeing. Figure 5 below illustrates the policy instruments needed for a caring economy.

This outlines the measures (that is, social policy, green industrial, labour market policy, land reform and green macroeconomic policies) that can be used to meet the principles for a just transition. These measures are aimed at building a caring rights based economy in which low carbon and climate resilience is fundamental to planetary wellbeing.

FIGURE 5

Policy instruments for just transition based on a caring economy

Source: Authors construction

5.1. Social policy for low carbon and climate resilient universal public services and social protection

Access to quality and universal public services, social and economic infrastructure, and social protection are essential parts of a caring rights based economy based on well-being and are fundamental to the realisation of many human rights and rights imbued by our Constitution. However, these services have been systematically underfunded, corrupted, and mismanaged resulting in poor accessibility for the poor and privatisation for the rich. In this section, we discuss care, public services, and social protections that are fundamental to a just transition.

Care: All people need care as it forms the bedrock of a society based on well-being. Care work includes all activities that entail looking after the "physical, psychological, emotional and developmental needs of one or more other people" which is essential for sustaining life and well being (Care Work, 2021). It includes activities such as cooking, cleaning, and creating the enabling environment for healthy development. Care work is under or unpaid work often conducted in the home and community by women (350.org, 2020).

Care needs are heightened in times of crisis, as in the climate crisis. Acute crises of climate change in the forms of droughts, heat waves, floods, or fires all increase the burdens of care. Climate change is also ex-

pected to impact food access and reduce water availability, affecting the amount of time and effort required to provide these. Without addressing the needs for care, and valuing it as essential work, women will disproportionately bear these burdens, unable to address their own livelihood needs and reducing the potential for political involvement (Coffey et al., 2020). Care has received inadequate investment, been chronically undervalued and ultimately dismissed of its economic importance. Public provisioning of social infrastructure and care must be prioritised as this has social, economic and climate benefits. The creation of decent jobs within the care economy has the potential to address the social and justice concerns regarding caring for those most vulnerable in society, while producing almost no emissions and increasing society's overall resilience to crisis (350.org, 2020).

Sustainable public infrastructure services: Care needs to be supported by adequate public infrastructure such as housing, transport, water, electricity, and public facilities such as schools, clinics, libraries, and community halls, all of which are essential to wellbeing. These public infrastructure services play an essential role in a just transition. Therefore, access to these services are crucial socio-economic rights realisation. For example, by radically improving the quality and availability of public transport, car use can be substantially reduced. Improving spatial equality through high-density housing close to economic centres, transport emissions can be further tackled, while at the same time improving the quality of life for workers, reducing the time required to commute, increasing accessibility to jobs, and allowing more time for care and leisure. Housing provides the opportunity to address energy efficiency, while improving resilience to high heat and protection against fire. Safe, secure, and comfortable housing also increases community resilience and well-being as a whole. For example, by improving resilience to fire in one home, it reduces the risks to all those around them. Similarly, by addressing water needs as a whole, waste can be reduced.

These examples illustrate the interrelations between reducing emissions and climate change, as well as adapting to its impacts. Therefore, by addressing public infrastructure in a holistic way, there is a potential to address the well-being of people; provide them with shelter, water, and mobility; and tackle unequal access to space and resources; providing the basis for which individual and community development can occur. This is the basis of a just transition.

Social Protection: Social protection is a central component to all conceptions of the just transition. This is because social protection increases resilience of communities to negative impacts, whether it be from climate change or from the transition to a low-carbon economy.

Social protection [as defined by the International Labour Organisation (ILO)] refers to interventions such as social insurance schemes (schemes which require a contribution from the beneficiary which then provides compensatory support in the event of illness, injury, disability, death of a spouse or parent, and so on), social assistance schemes (schemes which do not require a contribution and provide support in the form of services or cash to individuals in need) (Carter et al., 2019), negative income tax schemes (schemes which provide cash payments for those below a certain income level which adjusts based on income), universal benefit schemes (the provision of services or cash to every individual, not based on need) (Linke, 20180, public employment schemes (schemes which provide employment to those in need), and employment support schemes (provision of support services for employment such as training and job matching) (Carter et al., 2019).

Social protection builds direct resilience through absorptive anticipatory and adaptive capacities (Bahadur et al., 2015). Absorptive capacity during and after extreme weather events such as flooding, heat waves and droughts allow vulnerable communities to absorb and cope with shocks and stresses. This can be achieved through social protection measures that support households in meeting their consumption needs arising immediately after a climate disaster such as: safety nets, weather indexed insurance. Anticipatory capacity builds direct resilience by allowing communities to plan and prepare for climate shocks to reduce their

Crucially, the realisation of a system of accumulation based on a caring economy will not only require a capable state able to implement green industrial policy, it is also dependent on the extent to which there is a break from the elitist formation of and the alignment of political and economic vested interests with MEC.

impacts. This can be achieved through social protection measures such as building infrastructure that can withstand natural disaster, or disaster response plans. Adaptive capacity provides long-term resilience, as communities are empowered to learn and adjust after a climate disaster to reduce vulnerability to similar shocks in the future. This will enable them to adapt to long term climate risks. This can be achieved through, for instance, public employment schemes and employment support schemes that assist communities to transition to livelihoods that are less exposed to climate risks.

5.2. Green industrial policy

A well-designed industrial policy is needed to shift away from the dominance of the MEC. The shift away from the MEC must take place by developing capabilities for sectoral diversification outside of fossil fuel intensive industries towards those needed for the low-carbon and climate-resilient economy. Industrial policies that support the caring rights based economy through the development of sustainable public infrastructure services, the care sector, and other socially useful goods and services in a manner that reduces climate emissions and generates decent, stable, decent green jobs. In other words, people have the right to food and nutrition, shelter and clothing, health, energy, connectivity, recreation, and education as these are needs for human wellbeing. All of these are in service of the right to dignity and are necessary for human flourishing. This requires investments and planned production targeted towards socially-necessary things as opposed to industrial policy geared solely at improving labour productivity and consumer innovation; the reduction of waste throughout the production cycle and greater use of recycling. Critical to this is an industrial policy that aims to build resilience and mitigation on at least two different dimensions.

The first are those quite obviously and directly linked to the climate crisis. These are policies to account for likely population migration (building public housing in areas where people are likely to move to); accounting for more extreme temperatures by building smart buildings that can regulate temperatures while being energy efficient; and building out renewable energy sources by producing the materials needed for solar, wind, and other renewable energy production. Our industrial strategy should be geared towards resilience and mitigation through the production of materials that will assist in the provision of buildings that are energy efficient and adaptable to changing weather conditions and in the provision of public goods and services (described above) that do the same. A similar logic can be extended to non-climate environmental areas such as improving water and sanitation where support can be given for improving industrial development in this sector (TIPS, 2020).

The second type of resilience policies are about building resilient economies by ensuring that they are diversified across different sectors. A co-ordinated, centralised industrial strategy aimed at providing especially semi-skilled employment within the kind of industries needed for renewable energy and low-carbon, socially-useful goods is critical to this. Localisation should be focused on a set of key subsectors, chosen because they have a high employment multiplier, can provide decent work, assist in the shift to low-carbon industries and improve overall resilience. This can be done through a broad range of instruments including trade policy, local content requirements, industrial finance, innovation policy etc. In this way a green industrial policy sets socio-economic parameters from the outset with a strong normative frame about the kind of industrialisation we are pursuing (TIPS, 2020).

However, what must be avoided is a 'transition at all costs' which does not account for job losses and energy security.

Crucially, the realisation of a system of accumulation based on a caring economy will not only require a capable state able to implement green industrial policy, it is also dependent on the extent to which there is a break from the elitist formation of and the alignment of political and economic vested interests with MEC. Such a break would help to ensure establishment of a caring rights based economy is not disrupted by reproduction of the MEC.

Green industrial policy: The case of sustainable energy systems

A transition in the energy sector is a priority for the just transition due to its significant contribution to emissions. However, what must be avoided is a 'transition at all costs' which does not account for job losses and energy security. In order to prioritise justice in the energy transition, justice in production, consumption, and distribution of electricity must be considered, and industrial policies for a sustainable energy system may support these objectives. This means that consideration should be made about the type of electricity systems that are in place, the opportunities for job creation in the shift to renewable energy technologies, and an assessment of what key priorities are in the context of a carbon budget.

Public ownership: There exists a dangerous trend in South Africa where the transition to renewable energy has also meant privatisation. Increased privatisation of the electricity systems puts energy access and equity at risk, and it has been found that it does not necessarily improve efficiency (Foster and Rana, 2020). We therefore advocate that the electricity system must remain in public hands so that a select few companies are not benefiting while the rest pay for the transition through higher tariffs. Privatisation leads to higher costs of electricity which would reduce access. Public ownership should also mean greater accountability and transparency in electricity pricing and distribution. Crucially, the positive developmental impacts of public ownership require a well governed and functioning Eskom.

Localisation of manufacturing of renewable energy technologies: Localisation of the manufacturing of renewable energy technologies must be established in order to create jobs to mitigate the job losses in the coal value chain, as well as to promote industrialisation. Public procurement of renewable energy technologies would allow workers to benefit from the energy transition. This will require a set of interventions including training programmes for reskilling and industrial policy to promote localisation. The minerals required for renewable energy technology manufacturing could also be linked to this local manufacturing to increase beneficiation of our primary commodities. However, the ownership of mines and the practices around mineral rights, community benefits from extraction, and realisation of workers' rights within the mining industry must also be transformed in line with our principle five on transformation of ownership and access to resources.

Carbon budget: One of the principles which South Africa has agreed to implement through climate policy is a carbon budget. A carbon budget is an annual limit placed on carbon emissions in order to limit the impacts of climate change, such as keeping increases in temperature to an agreed level. A national carbon budget requires decisions about what carbon emitting activities are most important to achieve national development objectives. There is an acknowledgement in the framework of a carbon budget that there is a need for prioritisation and trade-offs in order to reduce emissions. The naïve assurance of a win-win transition does not acknowledge the stark inequalities and existing burdens carried by workers and their communities in the neoliberal economy, which will be exacerbated through climate and transition impacts. There will be trade-offs in the just transition, and decisions about what to 'spend' the carbon budget on should support socially just outcomes, and will require rethinking how best to improve well-being for all.

5.3. Labour policy for green decent work

Job losses are one of the major transition impacts which will impact workers. Industrial policy's prioritisation of enterprise development has a tendency of not fully accounting for the labour process. Moreover, while industrial policy has the potential to meet the right to work, working conditions can also be exploitative which is why there is a need for standards of work (McLaren, 2018). Therefore, industrial policies must not only target employment creation but must be complemented by labour policies that uphold a decent work regime. These ideas are captured in the ILO Decent Work Agenda (DWA) which was established through social dialogue. Decent work is vital for a just transition to counteract the increasing trend of poverty, inequality, unemployment, and increasing casualisation of labour.

The DWA has four pillars, the first pillar is employment creation which highlights the role of employment in poverty reduction due to income generation based on productive work. This pillar aims to counter the tendency towards jobless growth within the neoliberal economic paradigm. The second pillar is social protection which we discussed in detail in section 5.1. The third pillar is on labour standards and rights at work which include minimum requirements for working time, stability and security of work, equal opportunity and treatment, and safety in the work environment. The last pillar is social dialogue which highlights the need for public engagement on policy at various levels from national to firm level.

Job creation: In line with pillar one of the DWA, the creation of decent green jobs in the just transition is an opportunity for policy intervention. The United Nations Environment Programme's (UNEP) definition of green jobs are jobs that "1) are low in emissions of greenhouse gases, 2) are efficient in resource use, 3) maintain biodiversity and ecosystems, and 4) enhance social inclusion" (van der Ree, 2019). Climate policy should promote the creation of these decent green jobs in sectors such as electricity and renewable energy, transport, construction and repairs, agriculture, waste, industry, and care (such as education and health). In order to promote job creation in these sectors, industrial and macroeconomic policies are required which targets job creation and environmental sustainability. An example of a campaign for climate jobs is the One Million Climate Jobs Campaign (OMCJ). The OMCJ was established in South Africa in 2011 by a grouping of activists in civil society, labour, and academia. The OMCJ campaign holds publicly driven, decent jobs as the basis for the campaign (AIDC, 2016).

As South Africa leads unemployment worldwide, the country is desperately in need of work, and this is particularly true for rural areas such as Mpumalanga where expanded unemployment rates are nearing 50% (Godfrey-Wood and Flower, 2017). A job guarantee is also a strategically important intervention in the context of the just transition. Much debate is had about the net effect of the transition on jobs, but it is difficult to trust projections from models based on assumptions when you need to put food on the table. A job guarantee is a public employment scheme which can improve resilience to climate change. The job guarantee can be a safety net to smooth incomes and accumulate assets to manage climate-related shocks. Further, it can form part of public employment schemes in the construction, maintenance, and service provision of public goods that increase resilience. Finally, it has the potential to shift power relations and empower the poor through the provision of alternatives so that workers have more options and can push back against exploitative employers because they have a back-up in the form of public employment.

Rights at Work and Living Wages: The third pillar of the DWA highlights the fact that green jobs must be decent jobs in that they ensure safety and health at work, a living wage, and the realisation of workers' rights. The South African government has the obligation to progressively realise rights for all workers. Despite legislation and constitutional obligations, remuneration of workers continues to be inadequate to provide for a decent living – the minimum income necessary for a worker to meet their basic needs. Significantly more must be done both within the private sector and government to change this and meet these obligations. Food insecurity will only increase as climate change impacts increase and a living wage will be vital to support resilience to climate change.

South Africa has one of the most unequal, racist, and privatised land systems in the world, with a long history that has deprived the majority of South Africans, and particularly women, of land access, ownership, and security. This is intimately tied to climate change.

Decent working time, stability and security of work, equal opportunity and treatment in employment and a safe work environment are some of the broader standards that encompass rights at work. Decent working time provisions ensure that work time is not excessive. Stability and security of work -provisions ensure that people are not locked into precarious conditions associated with short term contracts or work without a formal contract. Equal opportunity and treatments rules out any forms of discrimination including race and ethnicity, gender and ableness. Finally, safe work environment provisions support the occupational, health and safety of workers at work.

Social dialogue: The last pillar of the DWA on social dialogue should also be held at the centre of the just transition in order to highlight the needs of those most vulnerable to climate change, and least responsible for it. Social dialogue can be defined as engagement between key stakeholders including government, employers and workers, and can happen at the national, sectoral, or firm level. Social dialogue is crucial to achieving procedural justice; that is, the need for fairness and representation in the way a just transition is planned and implemented. Meaningful social dialogue is achievable through effective participation. Effective participation requires that the right people are in the room – including those most affected and vulnerable groups. This requires transparent and inclusive processes in which people are empowered to actively participate in the process. Participants are empowered through communication, popular education, free and prior consent and that they are part of the process of setting the agenda.

5.4. Equitable land and ownership reform for just transition

A just transition must address the needs of equitable distribution of resources. South Africa is the most unequal country in the world. These conditions are partly to blame for the high levels of emissions we produce, but also the extreme vulnerability of many people, both of which create the necessity of a just transition. It is the wealthiest who are largely responsible for the high levels of carbon emissions in South Africa, and have profited from their production. Conversely, it is the poorest who have had to bear the brunt of these impacts, and are in a position where climate change and transition impacts may harm them the most.

In order to address this, from a perspective of justice and resilience, wealth redistribution is required. This needs to occur through the equitable distribution of resources itself, but also the redistribution of the means of production which create wealth (Borras and Franco, 2018). This subsection discusses two measures that address wealth redistribution for a just transition, land redistribution and shifts in ownership, while the following subsection discusses the third, macroeconomic policy.

Land redistribution: Wealth and wealth inequality in South Africa is not only a matter of income and capital, but is embedded in the land and other resources. South Africa has one of the most unequal, racist, and privatised land systems in the world, with a long history that has deprived the majority of South Africans, and particularly women, of land access, ownership, and security. This is intimately tied to climate change. Land plays an important role as a means of production and as a site for producing emissions and environmental degradation, as well as being susceptible to climate change and a sink for waste. The vulnerability of individuals and communities is linked to their ability to control, have access to and be secure in their relationship with land. Land ownership is closely linked to power, and its redistribution would contribute to challenging existing power structures, in line with our third principle.

Unless redistributive land reform is effectively pursued, with adequate support to beneficiaries, climate change may undo some of the limited progress made on addressing past injustices. Climate change is likely to affect

those whose tenure security is poor, the landless and the marginalised, the worst. This will result in further consolidation and concentration of land amongst the wealthy. This has impacts on climate change itself, as it is industrialised, mono-culture agriculture that is most responsible for land-based emissions. Therefore, redistributive land reform, coupled with water rights and adequate support, provides the foundation on which a just transition in agriculture can occur, which addresses both issues of mitigation and adaptation.

Changes in ownership: In South Africa, ownership over the means of production, industry, resources, and land, has been highly concentrated, and in many cases privately owned, as described in Section 2. Even in instances where public ownership has predominated, this is increasingly being undone through mechanisms such as unbundling, which in many instances acts as a necessary first step to privatisation (Heddenhausen, 2007). A just transition requires orienting the economy towards well-being. It must be coordinated and economy wide, and ensure the redistribution of the costs and benefits of the transition. Control and ownership needs to be shifted from the hands of a few, whether that be to state, common or social ownership, in line with our fifth just transition principle.

5.5. Macroeconomic policy for a just transition

The climate crisis is a structural crisis, requiring innovative, deeper, and long-term interventions. This requires additional spending from the government and shifts in where and how money is spent, with particular considerations for climate-friendly investments and attention to its distributional impacts. These policies include fiscal and monetary instruments that will support maximum domestic resource mobilisation for a just transition. These instruments are important to financing the expansion of and access to sustainable public infrastructure, social protections, green industrial policy, decent work, and land reform. These are all measures required for climate mitigation and adaptation.

Green macroeconomic policy, comprising fiscal and monetary policies, which help to generate green decent work by augmenting the aggregate demand for, and aggregate supply of, socio-ecologically useful goods and services. Deliberately expanding aggregate demand can create green jobs by changing the level and composition of expenditure towards socio-ecologically useful goods and services. This can be achieved through expenditure-raising policies (for example, government spending, monetary policy measures) supported by revenue raising policies (for example, wealth, land and carbon taxes). It can also be achieved through expenditure switching policies (for example, exchange rate management, import tariffs) that promote domestic production and exports over imports. Using macroeconomic policy to directly target expanding aggregate supply can generate the future conditions necessary for green jobs. This can be achieved through measures that generate the availability of, and raise the quality of, the factors of production needed in the sustainable production of socio-ecologically useful goods and services. For instance, adequate spending on human development, via expenditures on health and education, is critical to ensuring skills for green jobs are present. Similarly, physical investment, for example, in improved water management systems, will make industries such as agriculture more resilient.

Revenue raising fiscal policies: One of the most comprehensive ways in which redistribution can be addressed is through revenue-raising policies. This requires progressive taxation, a system of tax where higher income individuals, households and companies, pay relatively more tax than their lower income counterparts. While the South African system can be described as 'moderately progressive', there is significant space to improve. This includes through increased taxes on wealth and the income derived therefrom through increased capital gains tax; increased inheritance taxes; a financial transaction tax; taxing land, especially unused commercial land; and the institution of a net worth tax (Sibeko and Isaacs, 2020). Moreover, taxes on environmentally harmful activities are required to raise revenue, and also to ensure that polluters absorb the costs of pollution which may deter them from polluting. Other revenue sources include raising income tax on high-income earners, clamping down on tax evasion and illicit financial flows, and closing corporate loopholes.

Revenue raising monetary policy: A just transition requires a shift in how we understand the role of the central bank, as well as how South Africa is integrated into the international financial system. Monetary policies must directly discourage environmentally harmful behaviour, generate policy 'space' for actions that may not find favour with international finance, and finance a just transition. This means that monetary policy must shift away from inflation targeting. It also means that monetary policy should target full employment and environmental sustainability. This can be achieved through policies to support the financing of expanded fiscal spending. For example, monetary policy can be used to reduce the costs of borrowing through increasing the purchase of government bonds by the South African Reserve Bank. This can help to create an environment that is conducive to the development of a strong, green state that can carry out the policies outlined in the policy measures above. In line with debates globally regarding green monetary policy, the SARB should expand its role in providing direct financing specifically aimed at green investments. This can be done by providing financing to the government, development finance institutions like the Industrial Development Corporation (IDC) or the Development Bank of South Africa (DBSA), or relevant state-owned enterprises. This can be done as loans on favourable terms like multi-year payment holidays until such time as the economy has recovered.

Expenditure raising policies: These are policies that target the level of expenditure and composition of spending that may be used to support the just transition. These policies may include government spending, for instance, in support of green industrial policies, sustainable public infrastructure services, green decent work, social protection as discussed in previous subsections. These measures can also include monetary policies that can spur spending decisions and income policies (for example tax breaks, government transfers) (Sibeko and Isaacs, 2020).

Expenditure switching: These are policies that improve the trade balance by changing the relative costs of goods and services in order to promote domestic production and exports over imports (Sibeko and Isaacs, 2020). The measures can include exchange rate management, import tariffs and mechanisms for capital controls and interest rates to manage capital flows.

International public climate finance: South Africa needs an estimated R8.9 trillion (Cassim et al., 2021), or R596 billion in annual investment, over a 15-year time frame (from 2015 to 2030) to meet its nationally determined contribution. While efforts must be put into raising these funds through a green macroeconomic framework that prioritises domestic resource maximisation, where this proves insufficient, domestic resource mobilisation should be complemented by international public climate finance. However, as global financial actors have realised that global financial stability depends on addressing the climate emergency, climate finance has been co-opted into the new "Wall Street Consensus", a key feature of the dominant macroeconomic framework. This allows private finance to exploit the climate crisis for profitable opportunities that benefit financial market actors. This poses particular risks for developing countries, such as South Africa, that are integrated into a financialised global system on subordinate terms. Therefore, should there be a need to explore public international finance for a just transition, then it should be made contingent that grants are prioritised but can be complemented by concessionary finance that is not made contingent on neoliberal conditionalities.

By using these mechanisms, the state can act as an avenue for the redistribution of wealth. This is not only to be understood as a redistribution of money, but rather that this can be used to ensure the realisation of other measures necessary for human well-being and a just transition, such as sustainable public infrastructure services, social protections, green industrial policy, decent green work labour policies, sustainable energy systems, land redistribution, and so on, as described above. However, this is not possible in the context of austerity. In order for monetary and fiscal policy to be truly redistributive in nature, it cannot be used only to secure the fiscus and repay debts, but rather invest in truly transformative measures that shift the material power within society. A holistic macroeconomic framework which prioritises the well-being of people and the environment is required. This coordinated and holistic approach is also in line with our fourth principle.

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