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The evolving just transition: definitions, context and practical insights for Africa

To cite this article before publication: Monkogoi B Othogile *et al* 2022 *Environ. Res.: Infrastruct. Sustain.* in press <https://doi.org/10.1088/2634-4505/ac9a69>

Manuscript version: Accepted Manuscript

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The Evolving Just Transition: Definitions, Context and Practical Insights for Africa

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Submitted to: Special Issue in Environmental Research: Infrastructure and Sustainability, “Energy Transitions and Sustainable Transformations in Africa”

Revision Version: 2

Editor’s Decision Received Date: September 13th, 2022

Revision Submission Date: October 7th, 2022

Abstract

Sub-Saharan Africa is one of the world’s most climate-vulnerable regions, with impacts on food security already being felt while the continent also battles unprecedented levels of unemployment and economic recovery from the Covid-19 pandemic. The inherent connectivity between the twin challenges of climate and economic vulnerability is becoming more and more apparent, and the concept of the Just Transition is gaining traction across development spheres to address these multidimensional problems, albeit with many different interpretations. Different interpretations of the Just Transition movement can lead to vastly different priorities, policy routes and outcomes—a concerning risk especially where the governing definitions and principles are not produced, advanced, or owned by African stakeholders. This commentary aims to bring more clarity and specificity to the discourse on Just Transitions in Africa. We first provide a short history of the Just Transition movement and its evolution, and then demonstrate how the term has become an umbrella for more specific interest groups and communities, as seen through the expansion of the Just Urban, Rural, Circular Economy, and Energy Transition movements. Through a literature review, drawing from pivotal international examples, and based on the authors’ perspectives, we offer insights into the meaningfulness of these distinctions and posit clearer working definitions. We then explore the direct relevance of these movements to the African context through case studies of successful local and regional initiatives and programs. This commentary aims to provide readers with a simple, succinct, and structured explanation of the Just Transitions movements, and practical insights for their further advancement in Africa. Our exploration does not aim to be definitive or exhaustive, but rather demonstrates that truly just transitions on the continent will require attention first and foremost to consensus-building at the local and national level. This will require shareable research and data about programs and initiatives for each other to learn from and significantly more climate financing dedicated to African-led initiatives.

Keywords: climate change, just transition, sub-Saharan African, climate financing

1. Introduction: The Shift Towards ‘Just Transitions’

The latest science from the Intergovernmental Panel on Climate Change (IPCC) makes it clear that climate change is an emergency that demands unprecedented, rapid, and far-reaching global action (1). Updated climate models show a shrinking carbon budget that requires deep and immediate decarbonization in industrialised economies, and swift action to ensure sustainable, low carbon development pathways in emerging economies (1). However, at the same time the climate crisis is embedded within a global context of historic, systemic, and growing inequality which perpetuates deep poverty, resource and labour exploitation, unemployment, unfair distribution of the burden of pollution and emissions, and ultimately heightened social and economic vulnerability to climate impacts (1,2).

In the face of this complex and interweaving feedback system of created vulnerabilities, local movements have emerged to advocate that a **low carbon environment and a fair global economic system can and must co-exist** (2,3). In fact, these movements and ‘frontline communities’ argue that if the process of transitioning to low carbon economies is not “just”, the outcomes cannot be sustainable (4). The focus must be on more than carbon—sustainability must be a transformation of our entire global construct. These movements thus aim to build economic and political power from the bottom up to embed the shift from extractive and exploitative economies to sustainable economies with principles of fair participation, fair distribution, and fair compensation and leave no one behind (4). That cause is highly relevant to the African agenda where sustainable development and climate action must occur simultaneously to address the unique social, political and economic challenges of each country across the continent (5).

This commentary explores, from the authors’ perspectives, the evolution of the Just Transition movement, its application to African contexts and considerations for transition initiatives and programs. Using global and Africa-specific case studies available in the literature, this commentary explores the structural complexities that just transitions initiatives in Africa must address and highlights factors that have both aided in and impeded successful transitions to date. Based on extensive review of global and local case studies we recommend actions to solidify and operationalize the Just Transition concepts within African contexts, so that the breadth and generality of the concept does not limit its own effectiveness. Ultimately, the authors caution against the dangers of poorly defined concepts and argue for centring community-driven visions, definitions, and principles. This writing is published as a commentary as the arguments are based on our practitioner experience and we are actively seeking feedback from academic and practitioner communities such that this text can be updated to become a helpful reference guide on Just Transitions, especially for stakeholders engaged in African development.

1.1 *The Origins of the Just Transition Movement*

Just Transition principles are widely accepted to have first been developed by U.S. trade unions in the 1980s campaigning for benefits to allow workers to transition away from hazardous jobs in pollutive industries (such as nuclear and atomic industries) coming out of the Cold War and moving to peacetime economies (6–8). The term broadened to advocate for the development of new energy and extractive industries in a way that secured workers’ rights, pathways for their transition to alternative sectors, and accounted for any negative effects on communities and livelihoods (7–9). Just Transitions integrated into European discourse in the early 2000s where it had a strong association with the specific social and economic fallout for coal-dependent communities and workers (10).

It became heavily influenced by the Environmental Justice movement, also emergent in the 1970s-80s, which was a response to the system of environmental racism that disproportionately exposes low-income communities and those of colour to the impacts of pollution and hazardous industrial practices and strips them of access to a clean environment in which to live, work, and play (9,11). The environmental justice movement, centred on concepts of distributive and procedural justice at the local level, has fought for those impacted to have decision-making power about their environment (7–9). Labour unions sought to mobilise the just transition campaign as a means of addressing tensions and creating alliances between the labour and environmental justice movements (9). Through

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3 partnerships established between labour unions and environmental organisations such as Greenpeace, the just
4 transition movement offered a counter to the idea that valuing job security and caring for the environment were
5 mutually exclusive goals (9,12). For instance, out of this collaboration the Just Transition Alliance was created in
6 1997 and is still active in rallying the movement today (3,11,13).
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9 The Just Transitions movement was also influenced by the Climate Justice movement, itself emergent as a response
10 to mainstream environmentalism's move away from traditional identities of race and class (9,14). As
11 environmentalism was taken up by the U.S. political class, it embraced more individualist tendencies and adopted
12 post-racial ideologies. "Organizations which became the voice for the environment in Washington D.C. were the
13 product of, and themselves contributed to, the migration away from ideologically-based movement politics and
14 towards individual consumer choices... and the free market" (14). As climate change became an environmental
15 priority, the climate justice movement emerged as a concerted attempt to re-establish the centrality of grassroots
16 and civil society movements in the discourse (8,14). Climate justice seeks to reframe climate change as an economic
17 and political issue, rather than a physical one, by directly relating the causes and effects of global climate change to
18 equality, human and collective rights, and historic responsibilities (15).
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21 Advocates have had much success incorporating just transition principles into the global dialogue. Indeed, the 2015
22 Paris Agreement preamble explicitly enshrines concepts of decent work and the Just Transition. The participation
23 of workers (including trade unions), communities, civil society organisations, and other stakeholders in the
24 development of transition policies is a paramount principle (16). The International Labour Organization (ILO), a
25 key voice on Just Transitions, begins its policy statement on just transition affirming that the four pillars of the
26 Decent Work Agenda—social dialogue, social protection, rights at work, and employment—are indispensable for
27 building blocks of sustainable development and must be at the centre of policies for transitioning to sustainable and
28 inclusive economies (17).
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31 Thus, the Just Transition has become a formally established concept. However, based on this path of evolution there
32 is now a wide spectrum of conceptualizations, ranging from the narrower jobs and local environment focus to the
33 broader social justice and systemic transformation visions. Indeed, demands for a just transition can range "from a
34 simple claim for jobs creation in the green economy to a radical critique of capitalism and refusal of market
35 solutions. This range can make it difficult to clearly identify what Just Transition stands for" (18). While the broader
36 framings are compelling, these definitions overlap heavily with Climate Justice, perhaps suggesting a less niche
37 role for the Just Transition concept to fill. In contrast, the narrower jobs, livelihoods, local community, and local
38 environment framing is more specific, and that narrowness makes the concept more actionable though less
39 transformational in terms of global system architecture and root causes of injustice.
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43 Tracing the deep-rooted connectivity and co-evolution of the three movements described above – Environmental
44 Justice, Climate Justice, and Just Transitions - and drawing on our own practitioner experience, we adapt elements
45 of definitions forwarded by various Just Transition alliances and initiatives, and offer the following as a working
46 and operationalizable definition of a Just Transition: **the set of principles, strategies, and practices required to**
47 **transition workers and their surrounding communities into thriving economies that provide dignified,**
48 **productive and ecologically sustainable livelihoods, participatory and democratic governance, and ecological**
49 **resilience** (adapted predominantly from (9)). We hope that this simple working definition provides sufficient
50 structure for measurable action while also being aspirational in terms of transformational change. We are eager to
51 have other practitioners' feedback and hope this definition can be used and augmented by others.
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1.2 The Evolution of Distinct Just Transition Streams

The growing interconnectedness of resource governance, supply chains, global trade, and the geopolitical implications of new technology shifts, means that even communities beyond the direct and formal workforce are impacted by inertia or change. As such, based on the authors' practitioner experience and corroborated through literature review, we posit that the Just Transition concept has organically evolved into at least four distinct streams. These are the Just Energy Transition, the Just Rural Transition, the Just Urban Transition, and the Just Circular Economy Transition. These streams, while distinguishable, remain highly interconnected with areas of heavy overlap. We have found that people are most aware of the Just Energy Transition, especially after the announcement at the latest COP of a \$8.5 billion commitment from the United Kingdom, the United States, France, Germany and the European Union to assist in the decarbonization of South Africa's economy, with a specific focus on its electricity system (19). However, significant progress in mobilization, advocacy, and action is currently being experienced across the lesser-known streams. While these concept terms are in regular use, we have not found literature that explores them together and helps to nuance their distinctions and similarities. As such, we provide what we hope are best-available working definitions of these transition movements, along with specific examples of both historic and current initiatives underway for each, drawn from extensive literature review. There are possibly other streams that we do not acknowledge here based on the limits of our practitioner knowledge and experience, so we welcome feedback to update this text and develop a helpful reference guide that provides a more systematic introduction to the Just Transition concepts.

1. *Just Energy Transitions:* Acknowledging that a transformation of the global energy sector from fossil-based to zero-carbon by the second half of this century sits at the core of limiting severe climate change, the Just Energy Transition specifically focuses on energy sectors, both upstream and downstream, to secure workers' rights, to provide social protection for affected workers and communities, to remove barriers to integrating fossil fuel workers into clean energy sectors, and to build the necessary workforce capacity to deliver clean energy goals. It is often expanded to include delivering universal, reliable, affordable energy access (20).
2. *Just Rural Transitions:* Putting rural and indigenous communities at the centre of low-carbon food and land use transformations is the goal of the Just Rural Transition. It is focused on creating resilient livelihoods and jobs in the evolving rural economy through the promotion of sustainable food production; good stewardship of land, forests, oceans; ensuring adequate land tenure and land rights; and securing economic compensation for communities that protect and restore critical ecosystems and carbon sinks (21).
3. *Just Urban Transitions:* By contrast, the Just Urban Transition puts the urban population and urban workforces and livelihoods at the centre of transitions to low-carbon consumer goods, buildings, transportation, manufacturing, and industrial production, which all predominantly affect city workers and communities. This agenda centres on alternative urban futures – that is, cities where the distribution of environmental risks and benefits do not disproportionately burden marginalised groups; where decision-making is transparent, engaged, and democratic; and where policies seek to remedy structural inequalities and prior injustices in the urban context (22).
4. *Just Circular Economy Transition:* The Circular Economy is generally defined as the redirecting of flows and closing loops of materials, resources, and waste, along the life cycle of products. However, the needs of critical stakeholders such as consumers, workers and affected communities, especially in the global South, are often overlooked. The Just Circular Economy Transition focuses on the needs of communities involved in the mining, electronics, textiles, garments and digital technology supply chains which sit at the

heart of technology-oriented low carbon transitions (23,24). This movement focuses on labour, trade and monetary practices and policies that support and encourage sustainable resource extraction, waste management, recycling, and repair, throughout new low carbon ‘supply loops’ (24).

To further illustrate these distinctions, we highlight both historic and more recent initiatives from the literature that respectively exemplify the Just Energy, Urban, Rural, and Circular Economy Transitions in practice across the globe (see Table 1). As mentioned, though the Just Energy Transition has more history in the zeitgeist, relatively newer streams like the Just Circular Economy Transition have gained prominence, especially as waste becomes an increasing concern for people’s livelihoods and carbon emissions (24). These are each still evolving concepts, with different levels of engagement. Therefore, it is worth noting that the initiatives in Table 1. vary in scale and are not to be seen as equivalents but rather initiatives that both showcase the key tenets of the Just Transition movement (see our definition above) and the “stream” they represent.

Table 1. Examples of Just Energy, Rural, Urban and Circular Economy Initiatives

Stream	Just Transition Initiative	Notable Achievements	Relevance to Stream
Just Energy Transition	Coal companies, trade unions and the government agreed to phase out hard coal mining in the Ruhr region in Germany in response to cheaper coal imports, increasing subsidies and a national shift towards renewable energy in 2007. This was coupled with investments in education, service, tourism and infrastructure sectors to absorb the workforce and utilize existing assets (25).	<ul style="list-style-type: none"> Coal workers were offered early retirement for those who had worked over 20 years, employee commitments to re-train and re-employ workers to other energy jobs within the companies and additional support for those who decided to transition to service jobs. The last hard coal mine in Germany was closed in 2018 (25). 	The Ruhr region presents an exemplary agreement that included a slow phase-out of subsidised coal that allowed for a clear and comprehensive plan for affected workers. International, national and local planning and investments were mobilized to ensure that the transition included clean energy jobs as well as a transformation towards a knowledge- and tourism-based economy (25).
Just Rural Transition	In 1995, indigenous Mayan communities were granted rights to 350, 000 hectares of the Maya Biosphere Reserve in Guatemala through community concession contracts(26). Under the management of the Association of Forestry Communities of Peten (ACOFOP), the community participates in conservation activities, sustainable use of timber and non-timber species and manages tourism services (27).	<ul style="list-style-type: none"> Between 2014-2019, the ACOFOP have created more than 7000 jobs and \$50 million in income (26) Less than 1% of forest fires in the MBR occur in the areas managed by the community concessions (28) Now at over 500, 000 hectares, this area is one of the world's largest certified forest areas under community management (26,27). 	The gains of the Maya Biosphere Reserve community concessions showcase how effective rural and indigenous communities can be at simultaneously improving livelihoods and caring for critical ecosystems when given the ability to plan economic activities, invest in and protect environmental resources over longer periods. In particular, the ability to maintain a deforestation rate of under 1% annually, is indicative of the communities' ability to manage a massive carbon sink (27).
Just Urban Transition	EcoCasa was launched by the Mexican government in 2013 to address its impending housing shortage. The program aims to improve the affordability, waste, and energy efficiency of homes. EcoCasa provides real estate developers with financial incentives and technical assistance to construct energy-efficient housing for low-income families. It has also contributed to national housing standards and an energy performance evaluation tool for houses in Mexico (29) .	<ul style="list-style-type: none"> As of 2019, EcoCasa had financed 79 developers to build 57,859 energy-efficient homes for 267,456 citizens in Mexico Using its performance evaluation tool, EcoCasa certified over 66,000 homes in 2019 It is estimated the homes built by EcoCasa between 2013 and 2019 could prevent almost 2 million tonnes of CO2 emissions over the lifetime of the homes (29). 	Attending to the aging infrastructure, lack of affordable housing and climate vulnerability of homes especially for low-income communities is essential to addressing the structural inequalities in Mexican cities. The urban population requires programs like EcoCasa to reduce the costs of building and buying of low-carbon homes and to improve the standards of existing houses as it means better access to jobs, services and less spent on energy, especially for already marginalized communities (29).
Just Circular Economy Transition	The Ella Pad is a social initiative created in 2013 in Bangladesh that uses garment waste from textile factories to make low-cost sanitary napkins. The initiative was borne out of the needs of female garment workers who were forced into absenteeism because of a lack of access to menstrual products and hygienic disposal options at work (30,31). In response to the pandemic, Ella Pad has been making reusable masks (Ella Mask) from garment waste and has been distributing them for free across Bangladesh (31).	<ul style="list-style-type: none"> Garment workers save money on sanitary pads. The Ella pad is 17 cents (USD) and can be used 5-6 times while commercially available disposable pads are 23-29 cents. However, some garment factories give them to their female employees for free The Ella Pad improves the health and livelihoods of workers who would have to otherwise forgo workdays and therefore, income (30) 	The Ella Pad makes use of textiles that would otherwise end up in landfills, therefore reducing the waste and closing the materials' loop in garment factories. In addition, the Ella Pad could provide a new revenue stream for garment factories and workers in Bangladesh, which would further encourage innovate ways of reducing waste in factories (30).

From our point of view, these branched Just Transition movements are integrally connected, are derived from shared principles, and are the connective tissue needed to achieve global and national commitments such as the Paris Agreement and the Sustainable Development Goals in a timely fashion. However, as much as there are agreed principles and some useful elements of distinction, Just Transition terminology can be understood and used in increasingly divergent ways, in service of different ideological views. Furthermore, it is often said that these concepts are Eurocentric, catering to the more privileged challenges of high-income countries. For example, there is a Eurocentric understanding that existing and “proposed technoscientific ‘solutions’ to the climate crisis are commodified and profitable” (32). This understanding of Just Transition, however, can be detrimental to the Global South and its people (32,33). With policy makers in Europe and the United States of America turning to a Just Transition framework that addresses domestic environmental justice, “outsourcing harm” to the Global South to ensure continued profitability could further entrench climate inequalities globally (34).

The Just Transition in Africa will have to look different in meaning and in practice. Considering the unique social, economic, and political contexts in Africa, and given the upswing in attention to supporting just transitions in Africa especially from the philanthropic donor community, the discourse deserves urgent attention. The remainder of this commentary serves as our argument for the relevance of Just Transitions in Africa through exploration into the Just Transition movements and initiatives emerging specifically in the African context. Through our literature review, we have found African experiences in the Just Transition space that can contribute to the limited research available. We hope that by pooling this collection of experience we can encourage academics and practitioners to further expand the research and data available about African dialogue, theories, programs, and initiatives at this critical juncture.

2. The Just Transition in the African Context

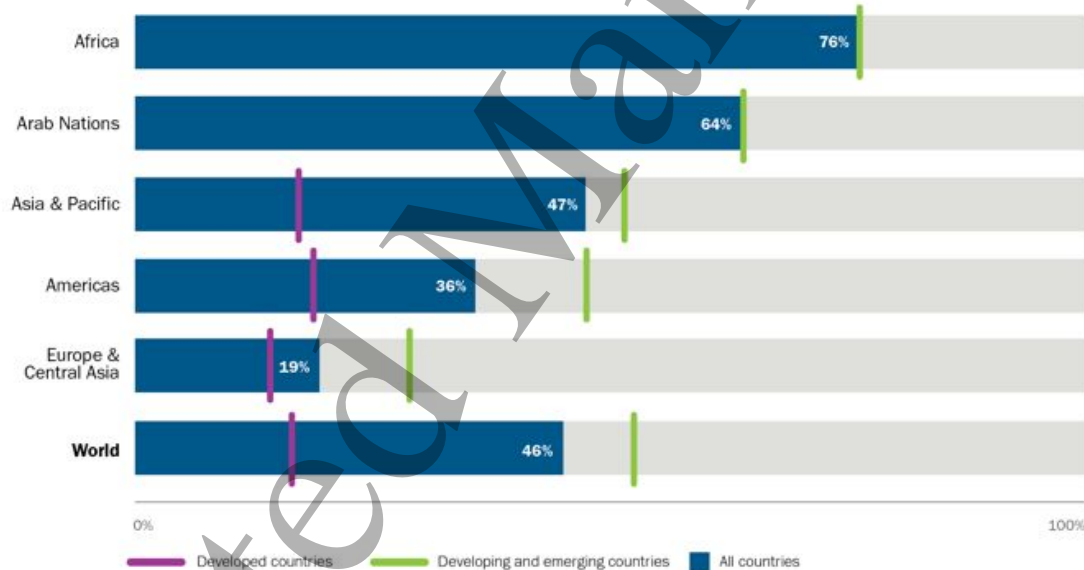
The African Union’s Agenda 2063 acknowledges the need to refocus the continent’s agenda around inclusive development, regionally integrating supply chains and commitment to democratic governance (35). Similarly, the African Development Bank has defined the Just Transition in Africa as the means of improving the lives of the most vulnerable while also building low-carbon, resilient economies (5). We believe the Just Transition concept has resonance in Africa as it has potential to highlight, address and alleviate specific environmental, societal, and economic issues. However, there are specific challenges in Africa that complicate this work, making initiatives harder to replicate across countries and necessitating local examination, leadership, and execution. The particularities of the African labour force and the power imbalance between the Global North and Africa means that Just Transition initiatives must consider not only the local context but global linkages (34). This has significant implications for the “stakeholders” involved in African Just Transition initiatives or policy. We provide examples here, by focusing on how linkages between local labour forces and global product flows influence the meanings of the Just Circular Economy and Just Rural Economy transitions in Africa. These examples demonstrate how the defining and execution of specific just transitions initiatives become a challenging endeavour, and why community-driven framings and visions are so crucial.

2.1 Understanding the African Labour Force

We are living at a time of unprecedented unemployment rates which are heightened by the continent’s youth explosion. Over 34% of the continent’s working-age population are 15-24 years old with over 10 million young people pouring into the job market every year (36). Added to this, African economies are largely undiversified, depending predominantly on agriculture, a climate-dependent, primary-commodity, export-oriented industry limited in local value-addition (37). In agricultural and extractive industries, which comprise the bulk of African GDP, very few jobs are formal wage-paying positions (37,38). This makes understanding and accounting for the labour force, a key component of just transition programs, very difficult. However, there are few incentives to

formalise labour laws, so Africa's record on addressing wages, social security, occupational health and safety, migrant workers, human resource development, and Indigenous peoples is sparse (39). This is especially important as the exemplary just transition initiatives, such as in Germany's Ruhr region (see above), are based on strong labour laws and do not infringe upon the rights of the affected workers (25).

As per our Just Transition definition and other examples above, the benefits of Just Transition initiatives centre workers who are usually unionised, and their communities. However, unionising informal workers in Africa continues to be a great challenge (40). The informal sector (see Figure 1) currently accounts for 70% of employment and 55% of GDP in sub-Saharan Africa, with 9 of 10 informal workers being women and youth – the highest share of informal labour in any world region (41). ILO evidence suggests that women comprise a much larger share of Africa's informal economy and are given fewer opportunities for social mobility (42). Wage exploitation and the lack of social protection often trap informal communities in poverty and exclusion (38,43). Africa has the largest share of informal work in the world (see figure below). This fragile employment landscape stifles local spending, leaving economies highly susceptible to external shocks and further exacerbating the continent's economic and social vulnerability to climate change (37). It also signals a different approach to a Just Transition is required in Africa. As an example, informal communities and others on the margins may be vulnerable to short term price increases caused by policies that spur energy transition such as the removal of fossil fuel subsidies (44). These policies could further entrench poverty and inequality. It is critical that these price changes are addressed through social protection programs, in addition to providing the right conditions for employment opportunities (44).



Notes: South Asia has a higher rate of informal employment than Africa: 78 percent. Because South Asia is grouped with more developed countries in Asia and the Pacific Islands in the chart, this fact is not visible.

Source: ILO, 2018.

Figure 1. The percentage of people who are employed in the urban informal sector across the world. Downloaded from (45), CC BY 4.0.

2.2 Global Dynamics and Implications for Just Circular Economy Transitions in Africa

These untenable employment conditions are perpetuated in part by external forces as well – the very same donor countries funding transition initiatives in African countries paradoxically penalised their labour protections. Therefore, there is a perverse foreign and national incentive to keep informal workers in a perpetual state of non-protection. For example, to protect the local textile industry and reduce waste (see Just Circular Economy Transition

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3 above), the East Africa Community proposed a complete ban on used clothing imports (the majority of which come
4 from Europe and the USA) by 2019 (46). The ban, coupled with an increase in taxes on clothing imports by Uganda,
5 Rwanda and Tanzania, was met by action from US lobbyists and the suspension of some of their benefits under the
6 US African Growth and Opportunity Act (46,47).
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9 Additionally, as the world moves towards net-zero, the same low carbon technologies that are often touted as much-
10 needed innovations can become sources of grave injustice when seen in this light. For instance, the lithium battery's
11 life cycle starts with exploitative cobalt mining in the Democratic Republic of Congo (DRC) and ends in e-waste
12 processing and recycling in Ghana (48,49). While this might be seen as closing the materials loop of lithium batteries
13 (as outlined in the definition of the Just Circular Economy Transition), it is not just. The lithium battery of an electric
14 car may reduce carbon emissions in a developed country but Africans endure the harsh working conditions for little
15 pay and the environmental consequences of 'decarbonization', which perpetuate the very systems of inequality that
16 the environmental justice movement originally sought to address (33,48,49).
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19 Healthy and diversified economies cannot be sustained on such a precarious employment foundation. Securing jobs,
20 livelihoods, and workers' rights is thus central to achieving sustainable and inclusive development pathways in
21 Africa. However, we can see the complexity involved in focusing on workers in Africa, when work itself is a largely
22 informal exercise, a situation perpetuated in part by perverse local and international profit-driven incentives. If the
23 Just Transition movement can articulate and highlight these often-unseen linkages, it can be an extremely helpful
24 asset for African development. Therefore, while the concept was derived outside of Africa, Just Transitions can be
25 a useful adoption into the African climate discourse, directly addressing the labour conditions of vulnerable
26 communities and building programs and policies that link from the local to the global.
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29 *2.3 Global Dynamics and Implications for the Just Rural Transitions in Africa*

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31 Similarly, consideration must be made for how African farmers and agricultural workers are connected into global
32 markets. The Just Rural Transition is predicated on enabling farmers to provide the world with food sustainably
33 while also improving their own livelihoods. However, Africa becoming a part of the global food and agricultural
34 commodities supply chains will require reckoning with how African farmers bear the brunt of volatile commodities
35 prices and have little to no bargaining power (50). For example, at the start of the 2020-21 season, Ghana and Ivory
36 Coast began charging an extra \$400 per tonne of cocoa exported under a scheme called the Living Income
37 Differential (LID) (50). The LID was meant to increase farmers' incomes and protect them from volatile prices.
38 With the dampened demand for chocolate by COVID-19, cocoa buyers have been circumventing the LID levy by
39 buying cocoa beans from the futures market. Farmers are now facing prices that are even lower than before the LID
40 was introduced (50).
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44 To complicate things further, the IPCC warns that climate-induced declines in crop production can increase local
45 commodity prices which in turn can affect competitiveness and patterns of regional and international trade (1).
46 Smallholder farmers are particularly vulnerable given the lack of linkages to fair markets, lack of opportunity for
47 value-addition, and lack of price-setting power. For instance, experts are concerned that under the Africa
48 Continental Free Trade Agreement (AFTA) smallholder farmers may be further exposed to increased competition
49 without the ability to access markets, deliver better-quality produce, or engage in value-addition (51). Studies that
50 simulate the impact of climate shocks on future agricultural trade find that Africa is likely to see the most negative
51 impacts on welfare, the burden of which will be borne by smallholder farmers, further reducing the continent's
52 adaptive capacity (52). Thus, international, and regional trade policy is directly connected to the Just Rural
53 Transition in Africa and how we plan for food systems transformations that can provide climate-resilient jobs and
54 livelihoods (see Just Rural Transition above).
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2.4 Local Interlinkages and Implications for Just Transitions in Africa

Through exploring the dynamics of African labour and global markets, we see the potential opportunity for the systemic change Just Transitions could represent, and the challenges in delivering these visions. We have offered the example of Just Circular Economy and Rural Transitions, but the same applies to all four chords of the Just Transitions movement, which are closely knotted in Africa in part due to these local-global dynamics. Thus, we believe that planning for a Just Transition in Africa will require experts to acknowledge, plan for and maximize where the Just Transition streams overlap. An example of the streams overlapping is that of the Just Rural and Just Urban Transition in Africa. A large share of Africa's urban population is now residing in what are classified as secondary and tertiary towns, closely tied to the agricultural activity in surrounding rural areas (53). These urban areas often do not exhibit the dramatic shift from agricultural to non-agricultural activities and employment that economic theories or traditional definitions of urbanisation presume (53). Farming and agri-food systems are likely to play a significant role in employment growth in these towns (53,54). Food systems transformations will thus be critical to delivering economic and livelihood bases in both rural and urban contexts in Africa. Just transition policies and programs will need to be developed with both rural and urban communities considered.

Likewise, increased food demand in these growing cities has led to projections that African agribusiness could be a trillion-dollar market by 2030. Local value-addition is expanding, and electricity demand for agro-processing is growing rapidly. Clean, decentralised energy technologies, such as mini-grids, have an important role to play in servicing the near-term agro-processing needs of the thousands of communities without reliable grid access (55). Productive use of energy in agriculture may not only expand energy access opportunities but also generate strong jobs multiplier effects in the energy sector as well as downstream agri-food sector and broader non-farm economy-diversifying job opportunities in rural areas, secondary and tertiary cities. This has important gender implications, as women and youth are the hardest impacted by the dearth of rural employment opportunities (56). Similarly, rural access to transportation and the potential for electric mobility interventions represents another important area of overlap between these transition spaces.

As with the tight linkages between African economies and global market dynamics, the local interlinkages have significant implications for the definition, design, and evaluation of Just Transitions initiatives. The risk of poorly defined or ill-contextualised concepts driving the Africa agenda can turn into false solutions that ultimately do not benefit affected communities. Actions taken in the name of 'just transition' can accentuate inequalities and socio-economic divisions by not fully understanding the local and global linkages. This is an important nuance to articulate because while global transitions to low-carbon economies may be inevitable, justice is not. For instance, market-based solutions that perpetuate the commodification of local resources in the name of carbon offsetting and job creation can maladapt those communities and ecosystems to a changing climate (34). Likewise, global industries that decarbonize in the name of the green economy while remaining profitable through continued exploitation of workers in vulnerable countries can widen the inequality divide, further destabilising these communities (see lithium battery example above) (34,49). Thus, clear, inclusive, community-driven, consensus-built principles for just transitions in Africa are critical.

3. Interpreting Just Transitions for Africa: from Concepts to Practice

To gain a better grasp of the intrinsic differences that Just Transition initiatives may encounter in Africa, the authors undertook a literature review of initiatives across the continent. To give a precursory look at the just transition initiatives across Africa, Table 2 outlines a few of these initiatives and showcases the different levels at which action is currently taking place. We found that the majority of the initiatives are very recent (see the Just Energy and Just Urban Transition examples in Table 2.) which makes gleaning programmatic guidance from them very difficult. In addition, projects like the Western Cape Industrial Symbiosis Programme (WISP) in South Africa are the first of their kind in Africa (57). Though WISP is a successful example of a Just Circular Economy initiative, as a one of very few data points on the continent, the concern is that it would sway the outcome of other African initiatives in

ways that may not benefit their context. Finally, despite being one of the oldest Just Transition initiatives in Africa, the 15-year-old Great Green Wall (GGW) programme has been plagued with the issues discussed in section 2 of the article. GGW has faced a lack of funding, a lack of communication across countries and varying land rights in the Sahel countries, even at the village level (58,59). These issues have made land restoration slow and in certain places, the restoration has come to a halt (59). However, even with accelerating desertification and the latest pledge from the Global North yet to be disbursed, the GGW is still intent on improving the livelihoods of the most vulnerable in the Sahel (58,60).

Similarly, South Africa's Presidential Climate Commission Towards a Just Transition has been lauded for moving quickly on its framework, which includes a Just Transition definition and timeline specific to South Africa (61). South African private, public and development finance institutions are well placed to finance the energy transition domestically. Many of them are already invested in renewable energy through the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) and have the experience necessary to manage and finance new energy infrastructure investments in South Africa (62). However, the estimated \$250 billion needed over the next 30 years as compared to the initial \$8.5 billion pledged by the Just Energy Transition Partnership (see table below) has raised concerns about the pace and types of funding needed in the future to achieve a timely and net-zero transition (61–63). Additionally, the disbursement of the \$8.5 billion has been hampered by negotiations between South Africa and its partner countries about how the funds should be spent (64). South Africa is acutely aware that they will require significant private and public capital from both domestic and international financial institutions to implement its Just Transition (61). The Just Energy Transition Partnership is expected to play a significant role in catalysing transition finance in South Africa and around the world as others look to South Africa as a contemporary example for the Global South (19,62).

Table 2. Characterization of Just Transition initiatives across Africa

Stream	Just Transition Initiative	Initiative's Leadership	Funding	Notable Achievements
Just Energy Transition	The Just Energy Transition Partnership (JETP) is an agreement struck in 2021 between the governments of South Africa, France, Germany, the UK, the US and the European Union to support and accelerate South Africa's decarbonisation efforts in the next 5 years (63).	In South Africa, most of the JETP funding is expected to be directed to Eskom, the power utility (19). The President Climate Commission, through the Presidential Climate Finance Task Team is expected to play a major role in the negotiation and management of funds (61,65).	\$8.5 billion has been made available to South Africa through the JETP over the next 3-5 years through various mechanisms including grants, concessional loans, and investments (19). South Africa will require over \$250 billion over the next 30 years to transition completely (62).	The JETP is expected to prevent up to 1-1.5 gigatons of emissions over the next 20 years (63).
Just Rural Transition	Africa's Great Green Wall (GGW) programme is designed to restore land in over 20 countries to combat desertification and improve agricultural productivity in the Sahel (66). The GGW aims to restore 100 million hectares and to create 10 million jobs in rural areas (67).	Launched by the African Union in 2007, the GGW is headed by the presidents of the implementing countries under the Pan-African Agency for the Great Green Wall (68). Their international partners include FAO, World Bank, EU and GEF amongst others (69).	Having had insufficient and inconsistent funds throughout the years, after COP-26, \$19 billion was pledged and a half has already been committed (59,68).	Senegal has planted 12 million drought-resistant trees and Niger is producing 500,000 additional tonnes of grain per year after land restoration (70).
Just Urban Transition	Acorn Holdings in Kenya became the first to close on a green bond in the country in 2019. The Climate Bonds certified issuance was intended to finance green buildings for 5000 university students in Nairobi (71).	Acorn Holdings	\$40 million (71).	The first tranche attracted double the minimum that Acorn set while the second tranche of the green bond was oversubscribed by 146%. The additional funding has increased the number of beds to over 7000 (72).
Just Circular Economy Transition	Western Cape Industrial Symbiosis Programme (WISP) is Africa's first industrial symbiosis project and provides free facilitation services in 2013. WISP matches companies across industries so that under-utilised and waste resources from one company can be recovered, reprocessed and re-used by others (57).	WISP is funded by the City of Cape Town and is delivered by GreenCape, a non-profit organisation (57).		Over the last eight years, WISP has resulted in 119 000 tonnes of waste diverted from landfills, 362 000 fossil greenhouse gas emissions saved and over \$9 million generated in financial benefits (73).

3.1 Addressing the Challenges of the African Just Transition

African activists, youth groups, trade unions, civil society, and researchers are now deeply engaged in raising much-needed awareness on just transition and identifying challenges such as those in section 2 and section 3. This vision varies by region, country, and group, producing many interpretations of what just transition looks like in practice (74). Despite the promise of the initiatives in Table 2 and many like them, they are often plagued by insufficient funding, administrative issues and many of the systemic roadblocks that have come with Covid-19. Not only do African countries have to maintain and expand their current initiatives, but they also must contend with the rapid shift necessary as a result of the dire climate consequences in Africa (75). While COP-26 was a watershed moment for climate financing for Africa, major gaps remain in interpreting the Just Transition concept for the African context, for example:

- What does it mean programmatically and politically to develop and implement a Just Transition agenda in Africa's hydrocarbon, agriculture, or mining-dependent economies?
- How do we ensure that historically marginalised voices and voices at various "power levels" are included when planning and implementing Just Transition initiatives in Africa?
- How do we ensure that the Just Transition in Africa does not reinforce local, regional, and global inequalities and biases such as the under-representation of women and other marginalised groups in governance and formal employment?
- How do we pursue, recognize, monitor, and measure "just" transitions in Africa, especially when the funding comes with pre-determined definitions and uses?
- How do we account for variation across cities in developing evaluative frameworks?

4. Where to From Here for Africa?

African countries require attention to and financing for a comprehensive COVID-19 response and recovery, poverty reduction and the institutionalisation of a low-carbon, fair and inclusive future. Supporting the tenets of a Just Transition and Africa's development simultaneously will thus be a crucial yet enormous feat. The Just Transition framework is still actively evolving. How the movement advances in Africa could have ramifications for its evolution more globally, especially given the turn to an African presidency for the next UNFCCC COP (76). For instance, it remains to be seen how local trade unions in Africa will continue to position themselves in the context of climate and energy diplomacy. This global climate juncture represents an opportunity for African countries to pivot to healthy, people-centred, sustainable economies, and there the Just Transition movement perhaps has greater relevance now more than ever. This is a crucial time to develop local visions and bridge the conceptual-communicative gaps between non-state actors, national policymakers, and subnational planners in Africa. The transition must be Africa-led. The public discourse that is currently taking place is essential to making sure that no one is left behind. To strengthen, expand and apply this discourse, we recommend the following:

- Create dialogue spaces at the international and national levels to contribute to a common understanding of the concept of a Just Transition for Africa. These spaces should include marginalised voices and engage various stakeholders across the Just Transition streams (Urban, Rural, Energy and Circular Economy).
- Engage funding agencies and high-income countries to share accurate and complete information about the availability and terms of climate finance for Africa.
- Expand on the research and data available to the public about transition programs and initiatives in Africa and globally. In particular, sharing experiences, practical programmatic guidelines and policy recommendations will be integral to clarifying the pathway for the African transition.

We hope that this commentary has been useful to our reading audience. We aim to bring more clarity and specificity to the discourse on Just Transitions in Africa by looking at the history of the movement, its evolution, and examples of Just Transition initiatives in practice. We aim to communicate the heightened relevance of Just Transitions to

Africa, given the centrality of unprotected workers and communities to African economy, and the heightened challenge of delivering Just Transitions in Africa given the myriad of global and local interconnectivities. Our exploration does not aim to be definitive or exhaustive, but rather simply aims to demonstrate that truly just transitions on the continent will require attention first and foremost to consensus-building at the local and national level. We hope that our perspectives provide useful insight to African development stakeholders and the international community working engaged in designing and advocating Just Transitions in Africa.

Data Availability Policy

The authors confirm that data sharing is not applicable to this article as no new data were created or analysed in this study. The data supporting the findings of this perspective are available within the article's references and its supplementary materials. The majority of the perspective's references are open access and are accessible via the links in the references.

References

1. IPCC, 2021: Climate change 2021: The physical science basis. Contribution of working group I to the sixth assessment report of the Intergovernmental Panel on Climate Change. Masson-Delmotte V, Zhai P, Pirani A, Connors SL, Péan C, Berger S, Caud N, Chen Y, Goldfarb L, Gomis MI, Huang M, Leitzell K, Lonnoy E, Matthews JBR, Maycock TK, Waterfield T, Yelekçi O, Yu R, Zhou B, editors. Cambridge: Cambridge University Press, 2021.
2. Islam SN, Winkel J. Climate change and social inequality. Working Papers 152, United Nations, Department of Economics and Social Affairs. 2017. :32.
3. What is just transition? [Internet]. Just Transition Alliance. [cited 2022 Jul 30]. Available from: <https://jtalliance.org/what-is-just-transition/>
4. Just transition [Internet]. Climate Justice Alliance. [cited 2022 Mar 30]. Available from: <https://climatejusticealliance.org/just-transition/>
5. Just Transition Initiative to Address Climate Change in the African Context [Internet]. African Development Bank. 2022 [cited 2022 Jul 30]. Available from: <https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/climate-investment-funds-cif/just-transition-initiative>
6. Henry MS, Bazilian MD, Markuson C. Just transitions: Histories and futures in a post-COVID world. *Energy Res Soc Sci*. 2020 Oct; 68:101668.
7. Cahill B, Allen MM. Just Transition concepts and relevance for climate action. Just Transition Initiative. 2020. :18
8. Morena E, Stevis D, Shelton R, Krause D, Mertins-Kirkwood H, Price V, Azzi D, Helmerich N. Mapping Just Transition(s) to a low-carbon world. United Nations Research Institute for Social Development. 2018. :36
9. Pinker A. Just Transitions: a comparative perspective. Just Transition Commission. 2020. :74.
10. McCauley D, Heffron R. Just transition: Integrating climate, energy and environmental justice. *En Pol*. 2018 Aug 1; 119:1–7.
11. Spanne A. Just transition: History, principles, and examples [Internet]. Treehugger. 2021[cited 2022 Jul 17]. Available from: <https://www.treehugger.com/just-transition-history-principles-and-examples-5190469>
12. Eisenberg AM. Just transitions [Internet]. *Southern California Law Review*. 2019 [cited 2022 Jul 17]. Available from: <https://southerncalifornialawreview.com/2019/01/04/just-transitions-article-by-ann-m-eisenberg/>
13. Nguyen L. A beginner's guide to a Just Transition [Internet]. School of Marine and Environmental Affairs. 2022 [cited 2022 Jul 17]. Available from: <https://smea.uw.edu/currents/a-beginners-guide-to-a-just-transition/>
14. Thomson J. A history of climate justice [Internet]. *The Solutions Journal*. 2016 February 22 [cited 2022 Mar 30]. Available from: <https://thesolutionsjournal.com/2016/02/22/a-history-of-climate-justice/>

15. Climate justice - definition [Internet]. United Nations Environment Programme Law and Environment Assistance Platform. [cited 2022 Jul 30]. Available from: <https://leap.unep.org/knowledge/glossary/climate-justice>
16. Preamble to the Paris Agreement Under the United Nations Framework Convention on Climate Change. United Nations Framework Convention on Climate Change. 2015. :7
17. International Labour Organization. Decent work [Internet]. International Labour Organization. 2015. [cited 2022 Mar 30]. Available from: <https://www.ilo.org/global/topics/decent-work/lang--en/index.htm>
18. Barca S. Greening the job: Trade unions, climate change and the political ecology of labour. In *Social and Political Ecology*. Bryant RL editor. London: Edward Elgar; 2015. p. 387–400.
19. Plumer B. South Africa secured \$8.5 billion to transition away from coal. It'll be a test case. *The New York Times* [Internet]. 2021 Nov 3 [cited 2022 Mar 31]; Available from: <https://www.nytimes.com/2021/11/03/world/africa/south-africa-coal-renewables.html>
20. United Nations. Technical Working Group 3: Enabling SDGs through Inclusive, Just Energy Transitions [Internet]. United Nations. [cited 2022 Mar 30]. Available from: <https://www.un.org/en/hlde-2021/page/technical-working-group-3-enabling-sdgs-through-inclusive-just-energy-transitions>
21. Vision statement [Internet]. Just Rural Transition. [cited 2022 Mar 30]. Available from: <https://justruraltransition.org/vision-statement/>
22. Just Urban Transitions [Internet]. Just Urban Transitions [cited 2022 Mar 30]. Available from: <https://justurbantransitions.com/>
23. Lisca A, Feeley J, Lozano AO, Wang K. Circular economy action agenda: Textile. Platform for Accelerating the Circular Economy. 2021. :56
24. Schröder P. Promoting a just transition to an inclusive circular economy. Chatham House, the Royal Institute of International Affairs. 2020. :33.
25. Germany: The Ruhr Region's pivot from coal mining to a hub of green industry and expertise. [Internet]. World Resources Institute. 2021 Apr 1 [cited 2022 Mar 30]; Available from: <https://www.wri.org/update/germany-ruhr-regions-pivot-coal-mining-hub-green-industry-and-expertise>
26. Just Rural Transition. Land tenure in a just rural transition: Restoring our relationships to land and natural resources. 2021. :31.
27. About Us - ACOFOP [Internet]. Association of Forestry Communities of Peten. [cited 2022 Jul 17]. Available from: <https://acofop.org/en/sobre-acofop/>
28. Impact [Internet]. Association of Forestry Communities of Peten. 2019 [cited 2022 Jul 17]. Available from: <https://acofop.org/en/impacto/>
29. Oates L, Luviano-Ortiz JR, Torres AB, Sudmant A, Gouldson A. Creating safe, affordable and sustainable housing in cities: lessons from Ecocasa in Hermosillo, Mexico. 2021. :35.
30. Kanya P. Ella Pad: Eco-friendly sustainable sanitary napkins for women [Internet]. *The Business Standard*. 2020 September 25 [cited 2022 Mar 30]. Available from: <https://www.tbsnews.net/feature/panorama/ella-pad-eco-friendly-sustainable-sanitary-napkins-women-137392>
31. Jahan N. Made for poor, eco-friendly too [Internet]. *The Daily Star*. 2020 [cited 2022 Mar 30]. Available from: <https://www.thedailystar.net/backpage/news/made-poor-eco-friendly-too-1887529887529>
32. Solomonian L, Di Ruggiero E. The critical intersection of environmental and social justice: a commentary. *Glob Health*. 2021 Mar 25;17(1):30.
33. Zografos C, Robbins P. Green Sacrifice Zones, or Why a Green New Deal Cannot Ignore the Cost Shifts of Just Transitions. *One Earth*. 2020 Nov 20;3(5):543–6.
34. Martin LJ. Avoiding 'carbon colonialism': Developing nations can't pay the price for pollution [Internet]. *The Hill*. 2021 [cited 2022 Jul 17]. Available from: <https://thehill.com/opinion/energy-environment/550313-avoiding-carbon-colonialism/>
35. Agenda 2063 - The Africa we want. African Union Commission. 2015. :24
36. Ighobor K. Africa's jobless youth cast a shadow over economic growth [Internet]. *Africa Renewal*. 2017 [cited 2022 Mar 30]. Available from: <https://www.un.org/africarenewal/magazine/special-edition-youth-2017/africas-jobless-youth-cast-shadow-over-economic-growth>

37. Economic development in Africa report 2022: Rethinking the foundations of export diversification in Africa – The catalytic role of business and financial services. United Nations Conference on Trade and Development. 2022 :192.
38. Guven M, Jain H, Joubert C. Social protection for the informal economy: Operational lessons for developing countries in Africa and beyond [Internet]. World Bank. 2021 [cited 2022 Jul 30]. Available from: <http://elibrary.worldbank.org/doi/book/10.1596/36584>
39. International Labour Organization. Labour standards in Africa (Africa) [Internet]. International Labour Organization. [cited 2022 Mar 30]. Available from: <https://www.ilo.org/africa/areas-of-work/labour-standards/lang--en/index.htm>
40. Organizing informal economy workers into trade unions: A trade union guide. International Labour Organization. 2019. :56
41. Economic Commission for Africa (ECA) contribution to the Economic and Social Council (ECOSOC) integration segment. United Nations Economic Commission for Africa. 2015. :5
42. Women and men in the informal economy: A statistical picture (third edition). International Labour Organization. 2018. :164
43. Holmes R, Scott L. Extending social insurance to informal workers. ODI Working Paper. 2016. :49.
44. Marleba D. Just transitions: A review of how to decarbonise energy systems while addressing poverty and inequality reduction. [Internet]. German Development Institute. 2022 June [cited 2022 Oct 5]. Available from: <https://www.idos-research.de/discussion-paper/article/just-transitions-a-review-of-how-to-decarbonise-energy-systems-while-addressing-poverty-and-inequality-reduction/>
45. Chen M, Beard VA. Including the excluded: Supporting informal workers for more equal and productive cities in the global south. [Internet]. World Resources Institute. 2018 May 29 [cited 2022 Mar 30]. Available from: <https://www.wri.org/research/including-excluded-supporting-informal-workers-more-equal-and-productive-cities-global>
46. Kuwonu F. Protectionists ban on imported used clothing [Internet]. Africa Renewal. 2017 [cited 2022 Mar 30]. Available from: <https://www.un.org/africarenewal/magazine/december-2017-march-2018/protectionist-ban-imported-used-clothing>
47. Business Daily Africa. Rwanda Agoa exit signals era of reciprocal trading [Internet]. Business Daily Africa. 2018 Aug 5 [cited 2022 Mar 31]. Available from: <https://www.businessdailyafrica.comhttps://www.businessdailyafrica.com/bd/opinion-analysis/ideas-debate/rwanda-agoa-exit-signals-era-of-reciprocal-trading-2213900>
48. United Nations Conference on Trade and Development. Commodities at a glance: Special issue on strategic battery raw materials [Internet]. United Nations Conference on Trade and Development. 2020 [cited 2022 Jul 17]. Available from: <https://www.unilibrary.org/content/books/9789210048293>
49. Sovacool BK, Hook A, Martisakainen M, Brock A, Turnheim B. The decarbonisation divide: Contextualizing landscapes of low-carbon exploitation and toxicity in Africa. *Global Envir Change* [Internet]. 2020 [cited 2022 Mar 30]; 60: 102028. Available from: <https://www.sciencedirect.com/science/article/pii/S0959378019305886>
50. Chandraseskhar A. Has a new price premium on cocoa really helped struggling African farmers? [Internet]. Swiss Info. 2021 Jul 20 [cited 2022 Mar 30]. Available from: <https://www.swissinfo.ch/eng/has-a-new-price-premium-on-cocoa-really-helped-struggling-african-farmers-/46797948>
51. The Continental Free Trade Area (CFTA) in Africa – A human rights perspective [Internet]. United Nations Economic Commission for Africa, Friedrich-Ebert-Stiftung. [cited 2022 Mar 30]. Available from: https://www.ohchr.org/sites/default/files/Documents/Issues/Globalization/TheCFTA_A_HR_ImpactAssessment.pdf

52. Gouel C, Laborde D. The crucial role of international trade in adaptation to climate change [Internet]. National Bureau of Economic Research; 2018 Nov [cited 2022 Mar 30]. (Working Paper Series). Report No.: 25221. Available from: <https://www.nber.org/papers/w25221>
53. Jayne T, Yeboah FK, Henry C. The future of work in African agriculture: Trends and drivers of change. International Labour Office. 2017. :42.
54. Potts D. Urban data and definitions in sub-Saharan Africa: Mismatches between the pace of urbanisation and employment and livelihood change. *Urban Stud.* 2018 Apr 1;55(5):965–86.
55. Banerjee SG, Malik K, Tipping A, Besnard J, Nash J. Double dividend: Power and agriculture nexus in Sub-Saharan Africa [Internet]. World Bank. 2017 [cited 2022 Mar 30]. Available from: <https://openknowledge.worldbank.org/handle/10986/26383>
56. Shirley R, Lee CJ, Njoroge HN, Odera S, Mwanzia PK, Malo I. Powering jobs: The employment footprint of decentralized renewable energy technologies in Sub Saharan Africa. *J Sustain Res* [Internet]. 2019 [cited 2022 Mar 30];2(1): e200001. Available from: https://sustainability.hapres.com/htmls/JSR_1129_Detail.html
57. Basson L, Mulcahy M, Baboolal A, Bronkhorst S. Using a sector development agency to mobilize a local green economy. *Low Emission Development Strategic Global Partnership.* 2016. :18.
58. COP15: ‘Great Green Wall’ still touted as the Sahel’s desertification solution [Internet]. RFI. 2022 [cited 2022 Jul 30]. Available from: <https://www.rfi.fr/en/africa/20220519-at-cop15-great-green-wall-still-touted-as-the-sahel-s-desertification-solution>
59. The Great Green Wall: Implementation, status and way ahead to 2030. United Nations Convention to Combat Desertification. 2020.: 68
60. Bryant L. Africa’s Great Green Wall: Researchers push new advances despite conflict, funding challenges [Internet]. VOA. [cited 2022 Jul 30]. Available from: <https://www.voanews.com/a/africa-great-green-wall-researchers-push-new-advances-despite-conflict-funding-challenges/6649279.html>
61. Making climate capital work: Unlocking \$8.5bn for South Africa’s Just Energy Transition [Internet] Blended Finance Taskforce, Centre for Sustainability Transitions. 2022 [cited 2022 Oct 5]. Available from: <https://www.systemiq.earth/wp-content/uploads/2022/05/Making-Climate-Capital-Work.pdf>
62. Presidential Climate Commission Towards a Just Transition. A framework for a just transition in South Africa. [Internet]. Presidential Climate Commission. 2022 June [cited 2022 Oct 5]. Available from: <https://pcccommissionflow.imgix.net/uploads/images/A-Just-Transition-Framework-for-South-Africa-2022.pdf>
63. Prime Minister’s Office. Joint statement: International just energy transition partnership [Internet]. GOV.UK. 2021 Nov 2 [cited 2022 Mar 31]. Available from: <https://www.gov.uk/government/news/joint-statement-international-just-energy-transition-partnership>
64. Sguazzin A, Dlouhy JA, Ainger J. A landmark \$8.5 billion climate finance deal hangs in the balance. [Internet] Bloomberg. 2022 Oct 3 [cited 2022 Oct 5]. Available from: <https://www.bloomberg.com/news/articles/2022-10-03/south-africa-s-8-5-billion-climate-finance-deal-with-rich-donors-test-for-coal?leadSource=verify%20wall>
65. About [Internet]. Presidential Climate Commission. [cited 2022 Jul 30]. Available from: <https://www.climatecommission.org.za/about>
66. Goffner D, Sinare H, Gordon LJ. The Great Green Wall for the Sahara and the Sahel Initiative as an opportunity to enhance resilience in Sahelian landscapes and livelihoods. *Reg Environ Change.* 2019 Jun 1;19(5):1417–28.
67. Great Green Wall — 2030 Ambition [Internet]. [cited 2022 Mar 31]. Available from: <https://www.greatgreenwall.org/2030ambition>
68. Back in the spotlight: Africa’s Great Green Wall [Internet]. France 24. 2021 [cited 2022 Mar 31]. Available from: <https://www.france24.com/en/live-news/20211123-back-in-the-spotlight-africa-s-great-green-wall>

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69. Great Green Wall — Partners [Internet]. [cited 2022 Mar 31]. Available from: <https://www.greatgreenwall.org/partners>
70. Great Green Wall — Results [Internet]. [cited 2022 Mar 31]. Available from: <https://www.greatgreenwall.org/results>
71. Patzdof L. First green bond from Kenya: acorn usd40m - Climate bonds certified, financing green buildings [Internet]. Climate Bonds Initiative. 2019 Oct 2 [cited 2022 Mar 31]. Available from: <https://www.climatebonds.net/2019/10/first-green-bond-kenya-acorn-usd40m-climate-bonds-certified-financing-green-buildings>
72. Njugunah M. Kenya: Final tranche of acorn green bond oversubscribed - allAfrica.com [Internet]. Capital FM. 2021 Jul 22 [cited 2022 Mar 31]. Available from: <https://allafrica.com/stories/202107220568.html>
73. African Business. Cape Town: City receives medal of honour in global sustainability award [Internet]. African Business. 2022 Jan 13 [cited 2022 Mar 31]. Available from: <https://african.business/2022/01/apo-newsfeed/cape-town-city-receives-medal-of-honour-in-global-sustainability-award/>
74. Hughes S, Hoffmann M. Just urban transitions: Toward a research agenda. WIREs Clim Change. 2020;11(3): 640.
75. State of the climate in Africa 2020. World Meteorological Organization. 2021. :44
76. Egypt to host COP27 international climate conference in 2022 -ministry. [Internet]. Reuters. 2021 Nov 12 [cited 2022 Jul 17]; Available from: <https://www.reuters.com/business/cop/egypt-host-cop27-international-climate-conference-2022-ministry-2021-11-11/>