Incorporating Just Transitions in Kenya's Low-Carbon Economy Development Path

south to south JUST TRANSITIONS

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Content overview

1. **Country Context:** The livelihoods of many millions of Kenyans are at risk from climate change. The impacts of climate change affect key sectors of the economy, such as agriculture, tourism, forestry, water, and transport. The effects of climate change are often most disruptive to vulnerable groups, including the poor, women, and children.

2. **Policy and Legal Framework for Climate Action in Kenya:** The Net-Zero Transition is necessary and offers many new economic opportunities, but it could worsen risks and vulnerabilities for some Kenyans. Fundamental changes in sectors like energy, transport or agriculture could mean some job losses, or higher energy prices for some consumers, or require expensive investment by smallholder farmers.

3. **Key Principles of a Just Transition:** The concept of "just transition" highlights that the transformation to a green economy should be designed and implemented in such a way that the costs are not borne by the poorest and most vulnerable groups. Many different stakeholders – particularly those who are most at risk or most marginalised – should be engaged in, and have influence over, decisions about how to manage the transition.

4. **Sectoral Impacts:**
   - **Agriculture** is a key industry that accounts for 54% of Kenya's total employment, and smallholder farmers produce over 80% of Kenya's food. Agriculture is highly vulnerable to climate change. While the transition to a more resilient and regenerative agricultural model is necessary, a clear framework is needed to avoid worsening existing inequalities and social insecurity, particularly among women.
   - **Energy** provides a key avenue for restorative justice. Kenya's energy consumption is dominated by biomass, and although electricity access has increased in recent years, rural populations still struggle to access electricity, and women continue to be impacted by dirty cooking fuels. Increasing women's capacity to participate in green energy could have significant health, economic, and social co-benefits.
   - Changes to the **transport** sector, such as electrification, could reduce emissions, provide green jobs, and reduce inequality. However, current policies or plans for promoting more climate-friendly transport do not include clear mechanisms to deal with potential livelihood losses resulting from transition. There are already historical injustices in the sector, and care must be taken to avoid further marginalization.
   - **Industrial** production, such as cement and steel production, contributed to 7.6% of Kenya's GDP in 2019. The sector created 293,800 formal jobs in 2020, but caused significant emissions. A just transition will need to support regional diversification, as well as retraining and re-skilling, to support affected workers.
   - **Forestry** is vital for carbon sequestration and biodiversity. As a result, efforts to increase forest cover have environmental benefits, but transition policies must consider rural households, forest-dependent communities, indigenous people like the Ogiek, and women. Close to three million people's livelihoods could be at risk if the forest sector transition plan is not socially and gender inclusive.
   - **Waste production** is increasing in Kenya. Nairobi produces around 2,400 tons of waste every day, of which only 38% is collected, and less than 10% is recycled. Transitioning to a more sustainable waste management system will have health and environmental benefits. However, the relocating dumpsites could jeopardize the livelihoods of many informal workers who depend on the waste sector for survival.
   - The **tourism** sector contributes about 10.4% to GDP and employs 990,000 people directly. The sector is reliant on resources, like beaches and wildlife, which are sensitive to climate. Making tourism more sustainable is therefore essential, but proper care must be taken to ensure that changes are holistic, inclusive and participatory.

5. **Overarching Concerns:**
   - **Gender:** Mainstreaming gender needs into climate action will be an integral part of transitioning to a low-carbon economy. To mitigate existing gender inequalities, the country could introduce gender quotas in newly established green sectors, build inclusive work environments, ensure gender representation in stakeholder consultations, and account for women's care and informal work in decision-making processes.
   - **Youth:** 29% of the Kenyan population is between 18-35 years old. the transition will need to endow young people with the capacity to participate in decision-making and guarantee their right to participate in international and national processes. Kenya needs to invest in re-designed education systems that reflect the new low-carbon industries that are being established.

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- **Social Inclusion:** Social protection policies can protect people from deprivation, loss of livelihoods or income, and social exclusion. Social protection has been recognized as a human right and an essential pillar of just transition. As a result of low capacity and a lack of coordination, a gap exists in how social protection aspects will be incorporated into climate change action in Kenya.

6. **Stakeholder Perceptions:** Stakeholder engagement found that many workers are concerned that the transition to a more environmentally-friendly economy (e.g., shifting from matatus to the new Bus Rapid Transport system) could have a serious impact on their livelihoods. Some workers also expressed a desire for government support in the form of re-training and social security.

7. **Conclusion:** It is critical that researchers and decision-makers work together to understand and address the distributional impacts of transitions. When doing so, they must recognise and account for the role of intersectional vulnerability in creating transition risks for some groups – including gender, youth, or other marginalized groups – and ensure that these sustainability transitions, and the country's recovery from the COVID-19 pandemic, are used as a window to bring about long-lasting improvements in social equity across Kenyan society.

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1. Introduction

Despite its low contribution to global greenhouse gas (GHG) emissions, Kenya bears a disproportionate burden of climate change impacts, which have been exacerbated by COVID-19. These impacts are disrupting the country's economic performance, as seen in sectors such as agriculture, tourism, forestry, water, and transport. In many cases, the catastrophic effects of climate change are most disruptive to vulnerable groups, such as the poor, women, and children. While a transition to a low-carbon and resilient society can ease some of these effects, the costs associated with the transition may be unequally distributed, compounding the challenges that marginalised communities face.

An inclusive, equitable, and just approach is therefore needed to reduce distributive and procedural inequality, as well as enhance the co-benefits of a transition to net-zero in Kenya. This process, which leverages the transition to a low-carbon society to tackle historical injustices and ongoing inequalities, is referred to as the just transition.

For Kenya, the transition will need to ensure that the transformation from a carbon-intensive economy to a green economy does not unfairly disadvantage those relying on extractive and carbon-intensive industries. Addressing historical injustices, reducing poverty, closing the gender gap, and uplifting marginalized communities will also be key.

2. Country Context

Economic Slowdown Resulting from the COVID-19 Pandemic

Kenya is a low-middle-income country with an estimated population of 56 million, which is projected to reach 60.4 million by 2030 (KNBS, 2019). The country's economic growth in the pre-COVID-19 period was robust and resilient, expanding by 6.3% in 2018 and 5.4% in 2019. The COVID-19 pandemic affected economic performance, and while nominal GDP increased marginally in 2020, real GDP contracted by 0.3% compared to a revised growth of 5% in 2019 (KNBS, 2021). Agriculture remained the dominant sector in 2020, and despite the contraction of global demand, agriculture, forestry, and fishing activities grew throughout the year, with the agricultural sector registering a growth of 4.6% in 2020 compared to 2.3% growth in 2019. The manufacturing sector's growth, however, slowed from 2.8 % in 2019 to 0.2% in 2020 (KNBS 2021).

Increased Vulnerabilities and the Informal Sector

Kenya's economic sector is predominantly informal. The sector employs roughly 80% of the working population in Kenya (ILO, 2021). Informal sector enterprises in Kenya are commonly referred to as jua kali (hot sun) and they comprise informal traders and artisans who produce goods and services for market. These enterprises are not listed in the register of companies and are not covered by the government's Social Security Scheme or any other employment-related government regulations, for example, the minimum wage and non-payment of social security contributions. This informal sector includes a variety of professions, such as welders, cooks, tailors, butchers, and hairdressers. The sector therefore constitutes an integral part of the Kenyan economy and employment creation, production, and income generation, including amongst smallholder farmers.

Total employment (outside small-scale agriculture and pastoral activities) contracted to 17.4 million in 2020, down from 18.1 million in 2019. Of the figure, 14.5 million workers were informally employed, with the formal sector registering only 2.9 million people. Informal workers are particularly susceptible to shocks, such as climate change and the COVID-19 pandemic, which have hindered efforts to end poverty by 2030 (SDG 2).

These vulnerabilities are compounded by the significant variations in the amount of rainfall, fog, and temperature witnessed in the last few decades. This has particularly affected informal smallholder farmers, as rain seasons have changed, making it hard to predict the weather and prepare the land (Cuni-Sanchez et al., 2019). Given the country's high reliance on rain-fed agriculture, rain variability has threatened food security and complicated life in rural areas. During severe droughts, women, especially those from pastoralist communities, walk long distances in search of water and firewood, increasing the risk of sexual abuse and domestic violence. Moreover, loss of livestock, the primary livelihood source for these communities, can result in increased child sexual exploitation, teen pregnancies, and early marriages. This exacerbates the systemic exclusion that many are already grappling with.

On the one hand, mitigating and adapting to climate change is essential to Kenya's wider efforts to reduce poverty, given that many of Kenya's poorest communities will be severely impacted by changes to the global climate. On the other hand, efforts to reduce GHG emissions, such as shifting to agroecology, improving the regulation of mining, and limiting deforestation, could, if not carefully designed, reduce access to critical resources and income for many of these informal workers and poor communities. Informal workers typically lack access to formal representation, such as unions, and are therefore frequently excluded from discussions related to the impacts of transition policies.

This paradox, in which those most affected by climate change are also those who will be most impacted by transitioning to a low-carbon society, is at the heart of the just transition. It is therefore critical that any efforts to respond to the impacts of climate change foreground procedural justice and inclusivity.

Threats to Agriculture and Food Systems

Kenya's contribution to GHG emissions constitutes less than 0.1% of global emissions (GoK, 2020). However, the impacts of climate change on the economy and livelihoods are substantial, due to the economy's dependence on natural resources and climate-sensitive sectors. The National Climate Change Adaptation Plan (NCCAP) 2018-2022, recognizes that different sectors are impacted differently by climate change. For instance, agriculture is highly prone to climate change and variability events such as low rainfall, frequent recurrent floods, droughts, and other severe climatic calamities that contribute to crop failure, livestock

deaths, and endanger human lives. The frequency of these events have greatly increased in the past decade. The crop sub-sector has witnessed a decline in overall crop yields in most parts of the country due to insufficient water, excessive moisture conditions, and more resistant pests, diseases, and weeds. Moreover, lower production has been recorded in the arid and semi-arid lands (ASALs) due to temperature increases and lower precipitation.

The future of Kenya's food production systems is therefore under threat, as climate change and variability continue to eat into the remaining 16% of Kenya's arable land, thus compromising the country's ability to feed itself. On a positive note, however, higher temperatures in highland areas may increase agricultural production in that region. In the livestock sub-sector, however, climate change impacts have caused livestock deaths due to drought, lack of pasture, reduced access to water, heat stress, changes in disease patterns, and potential for re-emergence of Tsetse and African Trypanosomiasis in the highlands.

Disruptions to Coastal and Marine Resources

In the fisheries sub-sector, the country is likely to experience reduced biodiversity and biomass abundance because of temperature increases and the increased risk of invasive species. Moreover, in the country's predominately low-lying coastline and surrounding islands, communities are at risk from sea-level rise. This has significant implications for the fisheries sector, and storm surges may endanger human lives. Other impacts include the submergence of low-lying areas and increase in water-logged areas, and saltwater intrusion along the coast due to sea-level rise. These changes have implications for domestic, industrial, and agricultural uses. Further, the destruction of coral reefs and damage to coastal ecosystems are likely if the current climate impact trajectory persists, which may impact tourism. There are also ports at risk as sea-level rises, which could damage crucial infrastructure affecting trade, business, and livelihoods. Lastly, the rate and extent of sea acidification could affect, among other things, the biotic composition of Kenya's marine territories, threatening food security and worsening biodiversity loss.

Rising Temperatures, Declining Forests

Sustainable Development Goal 15 (SDG 15, Life on Land) aims to protect, restore, and promote the sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss. According to KNBS (2020), the forest sector accounts for about 1.3% of Kenya's GDP, with an approximate economic output of Ksh. 125.6 billion, although its contribution is likely to surpass these estimates. Many forest and indigenous communities depend on and derive their livelihoods from forests (e.g., food, firewood, building materials, medicine and cultural areas). The linkage between this sector and others, such as agriculture, water, and energy, makes this sector an important regulator of climate change impacts. Unfortunately, anthropogenic factors, such as unsustainable logging, threatens forests' existence. The potential impacts of climate change in this sector include increased exposure to fire, pathogens, invasive species, and reduced provision of environmental resources and associated economic activity. A decline in forest productivity could also result in a reduced availability of fuelwood. These impacts could have far-reaching social, economic, and environmental consequences.

Changes to forest cover can also have implications for the energy sector. Interference with the water towers and aquifers will cause a decrease in hydroelectric power production capacity due to reduced river flows and reservoir siltation. Forests also have a cooling effect, and their decline will cause a rise in temperatures, leading to increased demand for energy for air conditioners and refrigeration.

The water sector, more broadly, will also be affected by the impacts of climate change. This includes reduced surface water availability for irrigation, livestock production, household use, wildlife, and industry, as well as increased water loss from reservoirs due to evaporation. In addition, the continued retreat of glaciers on Mount Kenya, which feed the Tana and Ewaso Ng'iro Rivers, has led to lower water levels, particularly in the dry season for residents and farmers who depend on the rivers (NCCAP 2018-2022).

Impacts on the Manufacturing and Energy Sectors

The manufacturing sector depends on climate-sensitive sectors for raw materials, which are key inputs for manufacturing. Moreover, the reductions in hydro-electricity generation will cause energy fluctuations or blackouts, impacting manufacturing processes. Climate change and increased extreme weather events can also increase the risk of

infrastructure damage and supply chain disruption (NCCAP 2018-2022). As such, climate change is affecting this sector's ability to fully contribute to economic development.

Furthermore, the energy sector currently contributes 18% of GHG emissions in the country. However, projections show that if a business-as-usual scenario continues, this sector will be the leading emitter by 2030. Therefore, the government is heavily investing in sustainable options for energy generation. Nonetheless, the effect of climate change on access to electricity could be devastating.

Damage to Transport Infrastructure and the Tourism

The transport sector ensures the movement of goods and the mobility of people. It is, however, among the leading contributors to carbon emissions. Climate change also adversely affects this sector in several ways, such as damage to infrastructure and interruptions to maritime, road, rail, and air networks because of flooding and heavy rainfall events. Softened and expanded pavements may also create rutting and potholes, and warped rail tracks from increased temperatures can disrupt access to work, markets, education, and healthcare facilities.

These reductions in accessibility can also impact the tourism sector. The tourism and wildlife sectors are essential economic drivers in Kenya, yet they are susceptible to climate change. In addition, water scarcity and infrastructure damage, such as roads and railways, may render tourist destinations and facilities unreachable.

Adverse impacts on ecologically sensitive tourist destinations, such as marine parks, can cause wildlife migration, with implications for park boundaries and human-wildlife conflict. In extreme cases, climate change may also cause species extinction. In addition, increased occurrences of viral infections and pandemics, which are associated with the changing climate and biodiversity collapse, have disrupted tourism in the country.

Although the activities that cause global warming are localized, the effects are transboundary and impact both perpetrators and non-contributors, with poor and marginalized communities bearing the greatest burden of both the impacts of climate change and the impacts of efforts to reduce GHG emissions. Such complexities are evident in Kenya and generate challenges that are not simple to solve.

However, concerted efforts from all stakeholders can deliver a low carbon and equitable just transition. A climate-safe future requires robust legal frameworks and clear policies to generate united and inclusive climate action. A just transition also requires a growth strategy that places the environment and people at its centre. This strategy must tackle existing inequalities and should be developed in a participatory manner that prioritizes social inclusion and restorative justice.

3. Policy and Legal Framework for Climate Action in Kenya

Kenya has a relatively robust climate change legal and policy framework. Efforts to tackle current and emerging challenges are anchored in the Climate Change Act (2016), the first comprehensive legal framework for climate change governance and low-carbon development for Kenya. However, recent development policies, such as the big four agenda, have not prioritized climate change. Moreover, although Kenya ratified the 2015 Paris Agreement, which included the just transition in its preamble, the nation has not enacted any laws or developed any strategies to mainstream just transitions into the development agenda. This presents a massive gap in the fight for a just transition to a low-carbon economy.

Kenya has had several national development plans, most of which span only five years and follow the election cycle (GoK, 2012). However, in 2008, the country launched its first long-term development blueprint, The Kenya Vision 2030. This vision intends to transform the country into a newly industrializing, middle-income country, providing a high quality of life in a clean and secure environment to all its citizens by 2030. The Vision is anchored on three main pillars; economic, political, and social, and aims to be all-inclusive and participatory (GoK, 2012). The country also ratified and adopted the Sustainable Development Goals and has streamlined its development plan to align with the SDGs and other global and regional development plans, such as the African Agenda 2063. In addition, the Vision 2030 identified tourism, agriculture, livestock, wholesale & retail, trade, manufacturing, financial services, business process outsourcing, and IT-enabled services as key sectors in driving the national development agenda.

The Kenya Vision 2030 identified climate change as a risk that could slow the country's development. Although mitigation is essential to the national climate change response strategy, the country's focus tilts towards adaptation. As a result, climate change actions have been incorporated into the Medium-Term Plans (MTP), starting from the second MTP (2013-2017). Further, climate change was mainstreamed across sector plans in the Third Medium-Term Plan (MTP III) (2018-2022). The government has also established four priorities for 2018 to 2022 through the Big Four Agenda (2018–2022). These are improving food security, increasing affordable housing, more manufacturing, and more affordable healthcare. Sector plans and budgets are to be aligned with these four priorities. However, climate change-related aspects are not explicitly covered in the country's growth plans, which prioritize manufacturing, affordable housing, universal health coverage, and food security (MyGov, 2020).

The success of Vision 2030, the SDGs, and the Paris Agreement commitments will require a transition to a more equal, socially just, and ecologically sustainable economic model. One of the significant challenges the country will face is enabling a low-carbon economy that simultaneously delivers poverty reduction and climate resilience. Therefore, in 2015 the country committed to the Paris Agreement Nationally Determined Contributions (NDCs), including mitigation and adaptation contributions. For adaptation, Kenya seeks to ensure enhanced resilience to climate change and aims to achieve Vision 2030 by mainstreaming climate change into the MTPs and implementing adaptation actions (GoK, 2016). For mitigation, Kenya seeks to abate its GHG emissions by 32% by 2030 relative to the BAU scenario of 143 MtCO2eq (NDC, 2020).

Consequently, the country has developed a relatively robust legal and policy framework to achieve its adaptation, mitigation, and sustainable development goals. Further, counties have established climate change units and climate change-related plans and policies through County Integrated Development Plans (CIDPs), national ministries, and departments to guide and mainstream climate actions into different sectors. Some of the notable policy and legal interventions developed in the country are discussed hereunder.

In 2010, Kenya developed the **National Climate Change Response Strategy** (NCCRS 2010), the first national policy document on climate change to advance the integration of climate change adaptation and mitigation into all government planning, budgeting, and development objectives. The NCCRS is operationalized in the **National Climate Change Action Plans** (NCCAPs). The NCCAPs are five-year

plans which help Kenya adapt to climate change and reduce greenhouse gas emission, and the current plan covers 2018-2022.

The National Adaptation Plan (NAP) (2015-2030) provides a climate hazard and vulnerability assessment and identifies priority adaptation actions in the 21 planning sectors identified in the MTPs. The NAP aims to consolidate the country's vision of adaptation and enhance long-term resilience and adaptative capacity. It is supported by macro-level adaptation actions related to the economic sectors and county-level vulnerabilities (GoK 2016).

The Climate Change Act (2016) was the first comprehensive legal framework for climate change governance for Kenya. It aimed to enhance climate change resilience and low carbon development for the country's sustainable development. The Climate Change Act has guided all NCCCAPs since 2016, as it mandates that the government must develop action plans to guide the mainstreaming of climate change into sector functions. The current NCCAP (2018-2022) aims to further Kenya's development goals by providing mechanisms and measures to achieve low carbon climate-resilient development.

The Climate Risk Management Framework (2017) integrates disaster risk reduction, climate change adaptation, and sustainable development. The framework considers these goals to be mutually supportive. It promotes an integrated climate risk management approach as part of policy and planning at the National and County levels.

The National Climate Change Framework Policy (2016) ensures the integration of climate change into planning, budgeting, implementation, and decision-making across all sectors of the economy, both at National and County levels.

The **National Policy on Climate Finance (2018)** establishes the legal, institutional, and reporting frameworks to access and manage climate finance. This policy aims to support Kenya's national development goals through enhanced mobilization of climate finance to contribute to low-carbon climate-resilient development.

This strategy is further elaborated in the **Green Economic Strategy and Implementation Plan (GESIP, 2016-2030)**, which supports Kenya's efforts to attain a higher economic growth rate consistent with Vision 2030, and firmly embeds sustainable development principles in the overall growth strategy (GESIP 2016-2030). The GESIP identifies other enabling conditions, which are essential for a quick and smooth transition to a green economy. These include a sustainable trade regime, exploring market opportunities associated with the transition to a green economy, and creating green jobs. This approach, which integrates environmental and economic priorities, is critical to the just transition.

4. Key Principles of the Just Transition

The concept of a Just Transition captures the deep and multi-dimensional undercurrents of the de-carbonization agenda, especially for people and regions that depend heavily on carbon-intensive sectors. It aims to use the necessary transition away from fossil fuels as an opportunity to transform economies and societies. Key themes include de-carbonization, climate change adaptation, poverty eradication, decent work, social inclusion, justice, and equity. For Kenya, a just transition should involve fair transformations from the carbon-intensive sectors to green ones while creating green jobs for those impacted by the transition and climate change. Addressing historical injustices, reducing poverty, closing the gender gap, and uplifting marginalized communities should also be critical objectives.

Evolution of the Just Transition

The concept of a just transition, which has its origins in the labour movement in the United States, has evolved and spread to other geographies and regions, from environmental justice groups to the international trade union movement, international organizations, and the private sector. Since its inclusion in the preamble of the Paris Agreement, it has transformed into global, national, and subnational policy circles (Smith, 2020). According to Atteridge & Strambo (2020), just transition captures a wide array of issues that raise fundamental questions about fairness, which are surfacing in the global shift to a low-carbon economy, particularly for people and regions that depend on carbon-intensive industries and sectors such as coal, transportation, and agriculture. Just transition, as set out in the Paris Agreement and as defined by trade unions, focuses on how the transition can create decent work and quality jobs. Ensuring global temperature stay below 1.5°C, while upholding the aspirations of SDG 8 (decent work and economic growth), SDG1 (ending poverty), SDG 10 (reduced inequalities), and SDG 13 (climate action), is a key part of the just transition.

The just transition was a key part of the COP26 (Glasgow) negotiations and resulted in a commitment from several developed economies to support the net-zero transition in developing economies. There was particular focus on supporting domestic workers, the role of indigenous people and knowledge, the importance of engaging local communities and traditional culture, and participatory climate action and policy design.

The just transition speaks to the transformation of economies and societies toward environmental sustainability, de-carbonization, climate change adaptation, eradication of poverty, decent work, social inclusion, justice, and equity (Friedrich-Ebert-Stiftung, 2020). At its core, it envisions *"leaving no one behind"* by providing social safety for workers, families, and communities. The key elements spurring the just transition include; institutional arrangements and policy coherence (including macroeconomic and labour market policies), social dialogue, skills development, occupational health and safety, and social protection (Ibid). A just transition should, therefore, provide a robust description of how a low-carbon economy could function, and how the process of transitioning to such an economy could occur. The just transition's inclusion in the Paris Agreement was a major landmark in linking climate action with worker's rights, sustainable development needs, and the idea of leaving no one behind.

The **Silesia Declaration** adopted at COP25 in 2018 provided additional political support, and further national commitments to include just transitions in Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs), and other climate-related policies and plans. The notion that "one size does not fit all" is vital in working towards this goal, as policymakers must recognize the different contexts, impacts, vulnerabilities, and needs across diverse communities, sectors, countries, and regions (Just Transition Research Collaborative, 2018).

Just Transition in Kenya: In December 2020, Kenya submitted its updated nationally determined contribution (NDC). The updated NDC has a revised commitment of 32% reduction in GHG emissions by 2030, up from the previous 2016 target of 30% (Ministry of Environment and Forestry, 2020). Although the revised NDC does not commit to a just transition, it mentions it as an aspiration. Achieving the just transition will require any subsequent climate policies and development plans to foreground this framework, including COVID-19 economic recovery

plans that engrave elements of equity and social inclusion.

While labour issues remain essential to the just transition discourse, the concept has expanded to highlight various other risks and equity issues associated with climate change impacts, mitigation, and adaptation. Just transition frameworks illustrate that reducing GHGs and adapting to changing climatic conditions will require actions across many dimensions, including social inclusion, distributional impacts, and other cross-cutting elements (Cahill et al., 2020). The social inclusion component refers to the importance of recognizing marginalized groups by including them in discussions and decision-making. This enables broad stakeholder participation to shape the outcomes, and ensure that governance structures are in place to influence local, national, and international transitions (Ibid).

Procedural Justice: Procedural justice requires the recognition and participation of diverse stakeholders and vulnerable groups, allowing them some degree of influence and ownership in transition planning. Beyond superficial consultation, a more expansive approach to social inclusion is needed, which would empower different groups to influence (and potentially own) the decision-making processes that affect their economic and social well-being. This, in turn, requires governance structures and institutions at the local, national, and international levels that facilitate a high degree of stakeholder engagement in transition planning. Further, social inclusion means the voices of marginalized and vulnerable groups should be elevated. Genuine recognition also allows diverse perspectives to exist alongside each other without discrimination (Cahill et al., 2020).

Distributive Justice: Just transition frameworks highlight the importance of addressing distributional impacts, and advocate for the fair allocation of the benefits and costs associated with transitions. This includes reducing access issues, addressing historical injustices (restorative justice), and considering the future impacts of transition processes on vulnerable groups. A narrower interpretation of distributional impacts might focus on direct impacts, such as on workers whose jobs may be lost, in sectors like agriculture and energy. A broader interpretation would encompass impacts across many sectors and groups, including economic, social, and environmental justice concerns.

In summary, just transition frameworks involve procedural and distributive justice in the process of transitioning to a net-zero economy. They also involve cross-cutting challenges such as *intention*, meaning the extent to which transition is intended to reform, or to transform, the current context. *A reform-oriented just transition* approach aims to achieve change within existing social and economic systems. Reform may be needed for incremental steps towards transformation. A *transformation-oriented* just transition has the ambition to more significantly overhaul existing social and economic systems where these are incompatible with sustainable development and social equity.

The specific context in given regions, countries or even sectors will shape the most suitable just transition approach (Cahill et al., 2020). One useful approach, proposed by Jenkins et al. (2016), explores the key dimensions of the new energy justice agenda i.e. distributional justice, recognition-based justice, and procedural justice. These have been assessed through evaluative and normative dimensions to determine existing injustices and make recommendations regarding how these should be approached. This model could be extended and customized to other sectors.

5. Just Transition Challenges and Recommendations for Various Sectors in Kenya

In many instances, when climate action is designed at the national level, it tends to ignore the lived experiences of the poor and most vulnerable at the local level, thus failing to leverage the contextual knowledge and participation of communities (Islam and Winkel, 2017). Existing challenges in finances, capacity, and skills are evident at the country-level, and COVID-19 aggravated these challenges on a global level. More than ever, an innovative and robust just transition approach is essential. Pandemic recovery responses present a huge challenge and an opportunity for a coordinated effort to accelerate inclusive efforts to meet mitigation ambitions. Climate change affects sectors differently, and so a transition towards a low-carbon development pathway requires diverse approaches. As such, a more equal, social, and sensitive process will be needed to address the just transition challenges that may arise in different sectors. To avoid exacerbating existing and historical inequalities in the transition process, it is necessary to formulate inclusive and evidence-based policies and strategies. This will enable policymakers and researchers to analyse cross-cutting issues in a participatory manner, including those related to gender, youth, vulnerable communities, marginalized groups, and the recovery from the COVID-19 pandemic.

A gender-sensitive just transition, for example, must consider the role of women's unpaid care work, particularly in developing countries, as well as women's informal work, both of which essentially subsidize our current economic systems, but are financially unrecognized or undervalued. Moreover, just transition strategies must internalize the precariousness of women's work, which is further compounded by current trends like seasonal and forced migration, the feminization of agricultural labour, the lack of formal recognition for women as farmers, and the lack of health protection

5.1 Agriculture Context and Challenges

80% of national food is produced by smallholder farmers

53.82% of Kenyan workers are employed in the agricultural sector

9 million Kenyans are employed in the agricultural sector, 8.3 million of whom are informally employed

Food production systems are major greenhouse gas emitters. Globally, they contribute to up to 30% of emissions, contributing to widespread environmental degradation and destruction through land clearing, use of inorganic fertilizers, emission of greenhouse gases from livestock, and the use of fossil fuels by agricultural machinery. At the same time, agricultural systems are vulnerable to climate risks and change, including droughts, floods, temperature increases, erratic precipitation patterns, and sea-level rise. Moreover, the current food production system has resulted in an inefficient and unequal food distribution system, resulting in millions of people being forced into food insecurity. This is particularly important in the context of COVID-19, which has highlighted and amplified inequalities, inefficiencies, and vulnerabilities in existing food systems.

Considering current trajectories, it is imperative for food production systems and agriculture to move away from a carbon heavy, resource-intensive, and industrialized approach to more resilient, regenerative, and agroecology-based modes. While this transition is environmentally essential, it can cause significant negative effects on livelihoods within a sector that already experiences inequality and injustice. The transition, therefore, must take a targeted approach to ensuring that that every stakeholder is considered. A blanket approach to transitioning, without considering impacts on specific stakeholders, will only exacerbate and amplify climate impacts. Additionally, the transformation must be inclusive of different stakeholders, such as rural

5. Just Transition Challenges and Recommendations for Various Sectors in Kenya

farmers, low-income consumers, women, farming and processing workers and others. The just transition must ensure their livelihoods and social protection, bridge existing inequalities, and facilitate equitable distribution of resources and benefits.

Smallholder farmers produce over 80% of Kenya's food, with women providing the larger share of labour on these farms. However, men dominate the subsequent stages of the food system value chain. Climate change may impact high value agro-ecological zones, which produce goods such as tea and coffee, impacting millions of people employed in the sector. Gender representation in these sectors is skewed towards women, yet women are not formally recognized as farmers in many areas in the country as they own no farmland, so benefits accrue to men. According to the World Bank (2014), women constitute 42-65% of agricultural labour, with numbers likely higher in developing countries. Due to these existing inequalities, women and other marginalized groups may be neglected, and their intersectional realities and related impacts may be ignored in the transition process.

The World Bank (2020) estimates the agricultural sector accounts for 53.82% of Kenya's total employment. According to the Agriculture Sector Transformation Strategy (2017-2026), 9 million Kenyans are employed in the agricultural sector, 340,000 of whom are formally employed, and 8.3 million of whom are informally employed. The sector is dominated by smallholder, rain-fed production farming systems of between 0.2 and 3 hectares, which account for 78% of total agricultural production and 70% of commercial production (World Bank, 2015).

Small-holder farming is dogged by issues related to human rights violations, deep inequalities, social insecurity, lack of social recognition and environmental harm, with women suffering the most. According to the Kenya Climate Smart Strategy 2017-2026, the impact of climate change is evident in the country, as the occurrence of extreme climate events increases. For instance, a temperature rise of 2°C would lead to large areas of Kenya, currently suited to growing tea, becoming unsuitable. This would have an enormous impact on the tea industry, which directly and indirectly employs three million Kenyans.

Smallholder farmers in Kenya are already experiencing declining yields due to climate change. Historically, they have responded by increasing the area under cultivation and clearing additional land. However, increasing agricultural production through land expansion has resulted in ecological challenges. Kenya has several adaptation plans and strategies, and has implemented several climate-smart programs to meet these challenges. For instance, Kenya's Climate-Smart Strategy and Agricultural Sector Transformation Strategy. These strategies have proposed initiatives such as adopting climate-smart technologies and agricultural intensification.

However, Amwata (2020), using situational analysis of the agriculture sector in Kenya, reports that gender inclusion in most of the agricultural sector transformation and climate programs is lacking. She reports the glaring existence of gender inequalities as most programs and initiatives only aim at increasing productivity and ignore gender dynamics, risking expanding the inequality gap. Although transformation in the agricultural sector is inevitable and necessary, the lack of an inclusive framework means that wide-scale change risks plunging up to 8.3 million informal farmers, particularly women, into poverty.

Recommendations

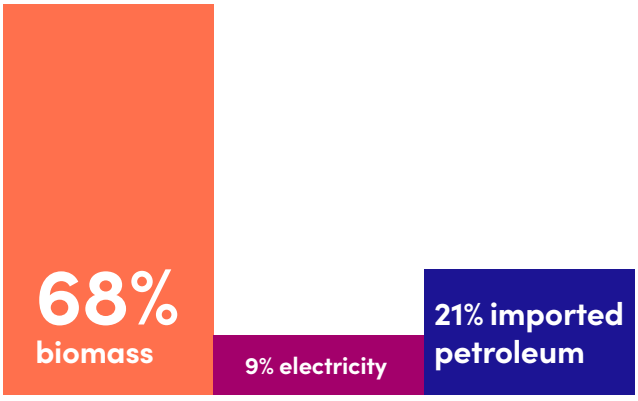
One of the roots of this issue is that there is also a low representation of women in the policy-making organisations that develop climate policies.

Communities, particularly women and marginalized community members, should be given the opportunity to map and discuss their concerns and aspirations in participatory planning processes. The lack of such opportunities and spaces results in skewed policies that often ignore important aspects of the transition. The government must therefore facilitate effective transformations on the scale required, by involving communities who can identify gaps in new and existing policies. In this way, many communities, who might otherwise have resisted climate action, could become powerful advocates for change.

5. Just Transition Challenges and Recommendations for Various Sectors in Kenya

Summary: Agriculture is Kenya's biggest emitter (40%) and employs over 8 million people, mostly informally. A business-as-usual approach to this sector will cause long-term environmental damage, including to smallholder farmers, forest conservation, and water access. With 80% of the rural population depending on the sector, and women providing much of the labour force (42-65%), this sector is a vital intervention point for both cutting GHG emissions and ensuring an equitable and socially just transition. Despite the strides made in the sector through several strategies, glaring fissures of injustice still exist. These include a lack of women's representation in policy circles, low recognition of women, and high inequalities among women and youth, marginalized communities, and the poor. The informal component of the sector is also not fully represented in the policy discussions.

5.2 Energy Context and Challenges



The energy sector has far-reaching implications for economies, businesses, and local communities. It plays a particularly vital role in transportation and employment. As a result, the energy and extractive sectors are central for just transition and climate change mitigation. A transition to renewable energy is a prerequisite for curbing global warming and achieving the targets of the Paris Agreement. On the one hand, such a transition will require large-scale changes to infrastructure, technology, socio-economic frameworks, and behaviours. A spectrum of stakeholders will be socially and economically implicated by such a transition. On the other hand, postponing the transition in the energy sector will result in higher economic, social, and environmental costs.

In Kenya, energy transitions will involve restructuring the economy and labour markets, leading to short- and long-term market changes. However, if these outcomes are modelled into the transition mechanism early enough, policymakers could significantly minimize adverse impacts and maximize the co-benefits of the transition, such as new green jobs in renewables-based industries. According to national energy situational and stakeholder analysis, energy consumption in Kenya is largely dominated by biomass (68% of the national energy consumption), electricity (9%) and imported petroleum (21%). Biomass (wood fuel, charcoal, and agricultural waste) provides for the basic energy needs of rural communities, the urban poor, and the informal sector. About 55% of biomass consumed for primary energy consumption is derived from farmlands in the form of woody biomass, crop residue, and animal waste, with the remaining 45% derived from forests.

The energy sector in Kenya is leading the transition to low-carbon development pathways. The country's generation mix now comprises 86% renewable energy (Hydro 826MW, Geothermal 713MW, Thermal 253MW, and Wind 26MW) (KenGen, 2022). Moreover, electricity connectivity reached 73% in 2018. Although the government reports electricity access of 75% nationally, in the rural areas, it is estimated at 65% (IEA 2020). Further, according to IEA, only 10% have access to clean cooking energy. From a policy perspective, the energy sector in Kenya has performed well with the enactment of the 2019 Energy Act, the 2020 Bioenergy Strategy, and the 2018 Energy Policy. These policy documents prioritize the shift from fossil fuels and biomass to renewable energy sources. However, there is a provision in the Energy Policy that indicates that if geothermal energy cannot be leveraged quickly enough to meet energy needs, then the country will consider fossil fuels (e.g., clean technology for coal) for baseload generation (NESA, 2020).

A transition to green energy and increasing energy access, however, does not guarantee restorative or gender-centred justice. For example, the sector may not have a supportive environment, such as tailored education programs, flexible work hours, and training opportunities. Cultural and social norms regarding gender roles, the double burden of work and family responsibilities, and a lack of access to financing opportunities can also hinder women's progress in the sector. Moreover, women lack or have limited land rights, reducing their participation

in renewable energy discussions. Thus, promoting women's land-owning rights is essential to ensuring a just and gender-responsive energy transition. The energy sector also lacks effective gender strategies, including sexual misconduct policies that limit their full participation. Better policies can prevent an increase in violence against women in the energy sector and the workplace more generally.

Kenya has accelerated green energy generation, but access and inclusion remains an issue, suggesting that the energy transition has not yet become a 'just' energy transition. For example, poor rural households may struggle to afford connection fees, which are high compared to income. In addition, the energy sector is not performing well in gender inclusion. According to the Ministry of Energy's disaggregated data, only 35% of the total staff and 15% of the technical leadership positions in the Ministry of Energy's headquarters are filled by women (MoE, 2019). There is progress, however, as leadership roles in different energy departments and parastatals are filled by women.

It's is also worth noting that progress at the leadership level has not always resulted in women having increased access to energy. In rural areas, women continue to suffer due to the use of dirty cooking fuels (MOE & CCAK, 2019). The Ministry of Energy's gender policy (2019) aims to correct some of these gaps by raising awareness among communities on the importance of gender inclusivity in energy issues, strengthening institutional capacity, and mainstreaming gender issues in policies and programmes at all levels. The effective implementation of the gender policy could catalyse a gender-centred just transition by establishing a gender quota for the renewable energy sector. It is also crucial to build female workers' capacity and ensure an inclusive work environment that provides, for example, childcare services, work-life balance, and family-friendly spaces. Other relevant social services include ensuring an income, particularly for women who engage in multiple forms of labour. The transition to renewable energy could, therefore, provide an opportunity to rewrite past injustices and engage in restorative justice.

Recommendations

Transitioning to renewable energy will present significant challenges. The implementation phase will be critical, and policymakers must beware of bottlenecks such as energy pricing, punitive tax regimes, limited data availability, poor physical access to infrastructure, issues with land permits and land ownership, gaps in communication and coordination between local and national government authorities, lack of regulations or the poor enforcement of existing regulations, and lack of financing mechanisms.

A key step will be to address capacity building and the need for a coherent policy framework. Kenya's current policy and legal frameworks do not provide a fertile environment for steering the transition to low carbon energy, as just transition principles are not integrated into climate-related plans and policies. The rural poor, especially women and girls, will be key stakeholders in the transition to clean cooking energy, and they must be active participants in all decision-making processes. It is worth remembering that gender issues in energy are not homogenous, and vary depending on locality, economic status, culture, education status, and caste. Thus, transition discourse must be sensitive to those differences if the marginalized and disadvantaged are to become agents of change.

Summary: Kenya is doing exciting work on renewable energy generation, with over 80% of the total energy covered by clean energy. In addition, access to clean energy for lighting has surpassed 75%, thanks to several targeted state efforts such as rural electrification programs and last-mile connectivity. However, clean cooking energy access remains a challenge, especially for rural households and the urban poor. In addition, women and girls are disproportionally affected by a lack of energy access, reduced decision-making power, and limited employment opportunities in the sector. Gender-related injustices may be transferred from the existing energy sector to the growing green energy sector if targeted action is not taken to address inequalities. More concerted efforts are needed to close or narrow the gender gap and improve access to marginalized groups as the energy transition heats up.

5.3 Transport and Urbanisation

Context and Challenges

Urban areas produce 80% of global GDP, and, as of 2020, are home to an estimated 56% of the human population (World Bank, 2020). Due to

the concentration of economic activities in cities, pollution from industries and transportation are key drivers of climate change. Given the social and economic importance of urban areas, and their significance in the COVID-19 pandemic, it is crucial that national recovery strategies and long-term visions post-COVID centre cities. In the transport sector, experts agree cities and public transport will play a central role in both COVID-19 recovery and climate change mitigation. This process is labelled as 'urban opportunity.' Examples include investment in sustainable mobility, electrification of public transport. These processes could reduce green emissions, provide green jobs, and increase urban equity post COVID-19.

Often, the transition of the transport sector has failed to include informal workers. Yet, the workers in this sector will be vital to supporting and executing the transition to a low-carbon pathway. First, however, policymakers must recognize that workers in the transport sector are not only limited to public transport drivers. Maintenance staff, administration, ticketers, cleaners, conductors, and marshals intervene in transportation (in both passenger transport and delivery) (Spooner & Manga, 2019). In cities of the Global South, and in Nairobi in particular, a large section of these workers are informally employed. As a result, they do not have access to social security, stable pay, safe working conditions, or union recognition. The government of Kenya has, however, organized public transport workers into groups of savings and credit cooperative societies (SACCOS). This has provided a structured transport sector that can be involved in an inclusive and participatory transition (GoK, 2019).

The climate emergency, coupled with the critical role of transport sector workers during the COVID-19 pandemic, suggests that any 'green' changes to the transport will have to include a just transition for workers that these climate measures might displace. It is often the most vulnerable transport workers who are worst impacted by the consequences of climate change (through air pollution and extreme weather events), and it is these same workers who may be displaced by top-down policies.

Several state initiatives have been introduced in Kenya to secure a climate-friendly transport. Some include developing knowledge products on electric mobility, creating awareness, and providing facts on electric vehicles. In addition, there is an ongoing public and private sector effort to identify barriers to the uptake of electric vehicles. Further, through the finance bill of 2019, the government proposed a reduction in tax on electric vehicles from 20% to 10%. The government has also developed standards for electric vehicles, with 21 standards approved to govern their import into the country (GoK, 2019).

The government is also introducing a Bus Rapid Transit system, upgrading and electrifying Nairobi commuter railways to reduce urban carbon footprints and congestion on roads (GoK, 2019). This system will likely reduce the number of public transport vehicles in cities, a reality that will translate into some of today's transport workers losing their jobs, even as it creates new jobs. The International Transformation Foundation (ITF) commissioned a labour-impact assessment that showed that the introduction of Bus Rapid Transit in Nairobi will leave behind thousands of workers, mainly in the informal transport economy, who will be displaced from their jobs (Spooner & Manga, 2019).

Despite being organized in SACCOS, these workers are not formally employed, and hence have neither job security nor social security. Unfortunately, current policies or plans for promoting more climate-friendly transport do not include clear mechanisms to deal with potential livelihood losses resulting from transition. There are already historical injustices in the sector, and thus care must be taken to avoid further marginalization during the transition process.

Recommendations

A just transition for transport workers in major cities in Kenya could look like:

- Access to formal, secure employment
- Extreme weather pay
- Access to social security
- Improved health and safety in their working conditions
- Recognition of their employment status for app-based workers
- Formalization within the transport system for informal workers
- Technological changes that benefit workers
- Special attention paid to the gender implications of the transition and the specific needs of women workers

A just transition would also mean redefining how we organize the transport system, who benefits, and how we change the structural conditions that

have produced and reproduced existing inequalities. If a 'green' policy worsens privatization, displaces workers, and leads to further precarity and informalization, it may require reconsideration, even if it reduces emissions.

A comprehensive public transport strategy that incorporates transport workers' needs, visions, and experiences is necessary for a socially just transformation. As such, the new road system, BRT bus parks, and loading points need to be friendly for people with disabilities, safe for women and girls, and incorporate non-motorized transport aspects (cycling and walking lanes), as over 50% of city dwellers in Nairobi walk daily to their destinations. To this end, the city needs to increase its NMT transport budget from the current 2% (Nairobi NMT policy 2017).

Summary: The transport sector in Kenya today depends on fossil fuels and contributes significantly to GHG emissions. Thousands of people use public transport daily in Nairobi and other major towns; and many Kenyans work in the sector as informal workers. Workers are exposed to poor working conditions, and lack social security, stable pay, safe working conditions, and union recognition, despite the sector organization into SACCOs. Several State initiatives have been proposed and initiated, such as creating the Bus Rapid Transit system, upgrading Nairobi commuter railways, electrifying the Standard Gauge Railway, and increasing non-motorized transport (NMT) spaces. These aim to reduce congestion and pollution. However, the policies lack a clear mechanism for dealing with job losses and the inclusion of women in the sector. Kenya needs to chart a new way, with increased representation of informal workers, people with disabilities, women, and other stakeholders who are likely to be affected by the changes.

5.4 Industry

Context and Challenges

In the industrial sector and heavy industries, cement and steel are among the worst emitters of GHGs. However, cement and steel are significant employers in Kenya, and most employees are contractual and semi-skilled. These industries need to transition and become more sustainable, but finding ways to ensure a *just transition* will not be easy. These industries rely on fossil fuels to power their operations, as the iron, metal, and cement industries consume large amounts of power (electricity and diesel). For instance, it is estimated that in the metal sector, electricity accounts for 40-50% of total conversion costs (KAM, 2018).

These industries are already at risk of being forced to transition due to socioeconomic and environmental factors. According to the KAM (2020) resilience and sustainability strategy report, the lack of a skilled labour force, and the high cost of power, are the major factors affecting the sector. The report further recognizes the danger posed by climate change, as manufacturing depends heavily on climate-sensitive sectors like agriculture, water, and forestry for raw materials. Therefore, the shrinking agricultural, water, energy, and forest sectors will also affect Kenya's manufacturing sectors and its contributions to GDP, revenue, and employment. During the COVID-19 period, the sector suffered, with part-time and casual workers bearing the greatest burden.

The sector sustainability report suggests the need for a national strategy to green the industrial sector, with a focus on responsible production and consumption under the circular economy, and an unemployment insurance fund to provide benefits for workers, including part-time employees who may become involuntarily unemployed (KAM 2020).

The transition to new low-carbon technologies and the de-carbonization of industries require access to abundant clean energy, attracting large-scale investments, and creating an opportunity for a just transition. For instance, the manufacturing sector in Kenya contributed 7.6% of the national GDP in 2019 (KAM, 2020). The sector also created 293,800 formal jobs in the private sector in 2020, compared to 329,000 jobs in 2019. Thus, the sector's importance in the country's economic development is unquestionable.

On the other hand, employment conditions in these sectors have worsened as the number of informal workers has increased. Therefore, workers' contract security, personal safety, and wages must be prioritized in the transition process. This transition to renewable industrial production will require investment in renewable energy generation and new clean technologies. Reducing emissions in these sectors depends on infrastructure that either significantly expands renewable and zero-emissions electricity production, or permits carbon capture and

storage or use at scale. The challenge is to do this in a way that includes people and improves society. Cement and steel industries tend to employ large numbers of workers in particular areas or towns. A just transition is necessary for this transformation to ensure that workers continue to have good quality jobs and avoid regions' de-industrialisation and political instability.

Recommendations

The Kenyan government needs to move quickly to establish a framework to implement the Kenya Association of Manufacturers' recommendations, including operationalizing SDG12, banning plastics, and establishing an insurance fund for workers. In addition, since the sector employs many semi-skilled workers, proper care must be taken to include these people in the transition, ensuring gender and social inclusion.

Therefore, the government needs to implement well-consulted policies and programs that support retraining, reskilling, and finding new jobs for workers affected by the new technologies. This transition risks leaving people behind, as in the case of the Indian cement industry, when it transitioned and adopted cleaner technologies. The biggest challenge in the cement and steel sectors will be to enact a just transition based on social dialogue, which provides social protection, material investment in de-carbonization, and regional development. The priority for the country is to develop an industrial strategy that is coupled with climate plans, social plans, regional development, and economic diversification. The reforms in the power sector, energy prices, and industrial policy must be linked to the transition of the cement, steel, and the entire manufacturing sector. The effect of transition in the sector should be equitably distributed and socially inclusive to all Kenyans involved.

Summary: Kenya's industrial sector (e.g., cement and steel) contributes to the national GDP and employs many people directly and indirectly. The sector is, however, a heavy emitter due to the use of diesel fuels. Workers are mainly semi-skilled and employed on a short-term contract basis. Thus, improving contract security, personal safety, and wages for workers must be a priority in the transition. Social security for workers and the adoption of clean technologies must go hand in hand to protect job and livelihood losses. The biggest challenge in the cement and steel sectors is providing a Just Transition based on social dialogue and protection alongside material investment, de-carbonization, and regional development. An inclusive, just transition in this sector must include an industrial strategy coupled with climate plans, social plans, regional development, and economic diversification. The strategy must be sensitive to reforms in the power sector, energy prices. Industrial policy must be linked to the transition of the cement, steel, and the entire manufacturing sector.

5.5 Forest Sector

Context and Challenges

The Kenya Forest Service (KFS) estimates that Kenya has 6% forest cover, including indigenous, open woodland, and plantation forests. The forest sector is vital for carbon sequestration, preserving biodiversity, and controlling the impacts of climate change. It is also a source of livelihood for different communities, and generates revenue for the government. The sector employs many Kenyans directly and indirectly through linkages with other sectors like agriculture, manufacturing, tourism, and water. The charcoal industry, the largest informal sub sector in the forest sector, employs 700,000 people and support 2.3–2.5 million dependents (MENR, 2016). Further, it is estimated that the formal forest sector employs 18,000–50,000 people directly and 300,000–600,000 indirectly, making it a source of employment particularly in the rural areas of Kenya (FAO, 2014; KFS 2015).

Besides economic considerations, forests have cultural, ecological, and hydrological significance. They are essential for cultural purposes as they provide places for traditional rights. In addition, the five major water towers of Mt. Kenya, Mau Forest Complex, Cherangany Hills, Mt. Elgon and the Aberdare Ranges act as the primary water catchment areas for the country (KFWG, 2018). Forests are also a major biomass energy source, with a large proportion (68%) of the Kenyan population relying on wood fuel.

Forest degradation and deforestation, exacerbated by climate change and increasing demand for agricultural land and urban development, have led to reduced canopy cover, altered biodiversity composition, and increased GHG emissions. As a result, the value of the forest ecosystem, its ability

to mitigate the impacts of climate change and its support of human livelihoods, are under threat. This is due to anthropogenic effects such as land-use change for agricultural purposes, urban development, encroachment into protected areas, and illegal and unsustainable extraction of forest products.

Kenya has made certain notable efforts to preserve, conserve and increase forest cover to 10%. However, several challenges persist, such as increasing demand for land and forest resources, inadequate funding, poverty, and inadequate forest governance. To mitigate these challenges, the government (Ministry of Environment and Forestry) has embarked on a journey to improve forest governance, For example, the revised Kenya Forest Conservation and Management Act 2016 and draft Forest Policy 2020.

Recommendations

These laws and policies aim to improve forest resource management, conservation, and the sustainable extraction of forest resources. Therefore, the country must reclaim public forests, rehabilitate dilapidated forests, and encourage communities to adopt agroforestry to achieve mitigation targets. While these actions are beneficial, several categories of people, including traders and forest community members, will lose their livelihoods in the process. Close to three million people's livelihoods could be at risk if the government transition plan is not socially and gender inclusive. The policies must consider rural households, forest-dependent communities, indigenous people like the Ogiek, and women. A just transition discourse is therefore essential in this sector, and the process must be carefully crafted, involve all stakeholders, and be guided by a socially inclusive drive that aims at leaving no one behind.

Summary: Kenya has 6% forest cover but aims to achieve 10%. The sector is critical due to its direct and indirect linkages with other sectors. Forests also provide carbon sequestration, preserve biodiversity, and control the impacts of climate change. In addition, a significant proportion of the Kenyan population (68%) relies on biomass from the forest (wood fuel and charcoal) for energy, supporting over 3 million people. The livelihoods of forest-dependent people and communities could be at risk if the just transition plan is not socially and gender-inclusive. A just transition discourse is therefore essential in this sector, and the process must be carefully crafted, involve all stakeholders, and be guided by a socially inclusive drive that aims at leaving no one behind.

5.6 Waste Sector Context and Challenges

The world creates 90 billion tons of waste annually, according to International Resource Panel Report (2017), and this may more than double by 2050. However, less than 10% of the produced waste is recycled, while the remainder ends up in landfills, dumpsites, rivers, and oceans, adversely affecting our ecosystems. Kenya generates an estimated 25,000 tons of solid waste per day, translating to almost 10 million tons annually. An estimated 40% of this waste is urban. The primary sources of waste are households, manufacturing, commerce, health care, agriculture, waste treatment, construction industry, and mining waste (GoK, 2021). Generally, there is no distinction between the various waste categories, as all household, industrial, and healthcare waste is referred to as municipal waste. Municipal waste is mixed, unsorted, and contaminated. Those who cannot afford the waste services depend on informal "pickers."

Kenya's urban population is increasing and will generate an estimated 5.5 million tons of waste annually by 2030, which is three times more than the amount of waste generated in 2009 (GoK, 2021). Past inventories indicate that 60%-70% of waste is organic, 20% is plastic, 10% is paper, 2% is metal, and 1% is medical waste. However, inefficient production processes, low durability of goods, and unsustainable consumption patterns have led to excessive waste generation (MoEF, 2019). Nairobi, for instance, produces around 2,400 tons of waste every day, of which only 38% is collected, and less than 10% is recycled (JICA, 2010). The remaining 62% is disposed of at the uncontrolled Dandora dumpsite, illegally dumped in roadsides and waterways, or burned. Illegal dumping and burning are particularly common

in low-income areas of the city, which are home to over 2.5 million people who cannot afford waste collection services.

Informal waste pickers at these uncontrolled dumpsites are exposed to toxic chemicals, air pollution, and pests that spread diseases. Nevertheless, over 3000 families derive their livelihoods from the Dandora dumpsite (Osman, 2019). The informal metal sector, locally known as juakali, depends heavily on recycled metal. This sector directly employs 500,000 artisans in Nairobi, with even more people indirectly deriving their livelihoods from the sector. According to the Guardian (2019), electronic waste is also ballooning in the cities in Kenya, with Nairobi being heavily affected. Some of it is collected by informal pickers and informally sorted and resold, e.g., copper wires, motherboards etc. There are very few e-waste recycling companies in the country. According to Waste Electrical and Electronic Equipment Centre, in 2016, only 1% of all e-waste was recycled in Kenya.

Kenya has made commitments to environmental protection. Article 42 in the Constitution of Kenya (COK 2010) acknowledges that every person has the right to a clean and healthy environment. The Kenya Vision 2030 sought to relocate the biggest dumpsite in Nairobi (the Dandora dumpsite) and develop functional and sustainable waste management systems in Nairobi, Kisumu, Eldoret, Nakuru, Thika, and Mombasa in the year 2030. The National Waste Policy 2021, National Waste Management Strategy (2015), alongside the Environment Management and Coordination Act (EMCA) Cap 387 and subsidiary legislations, provide the framework for managing waste in Kenya. In addition, the ban on polythene carrier bags in 2017 decreased solid waste generation in Kenya. Moreover, the 2021 e-waste conference in Nairobi forms a key milestone in integrating e-waste management into national policy and development discourse. However, regulatory frameworks envisage linear models and do not adequately recognize the circular model for waste management provisions.

Recommendations

Addressing waste management effectively is critical to delivering Kenya's constitutional right to a clean and healthy environment, advancing the circular economy to create green jobs, and realizing the nation's sustainable development goals. Transitioning the waste sector will affect how production and consumption systems are designed and implicate many value chains.

Promoting and adopting efficient production systems, a circular economy, and turning to renewable energy is key to promoting a cleaner environment and encouraging a just transition. Many people depend on the waste sector for survival, including garbage truck loaders, drivers, pickers, and sorters. Most of these workers are informally or self-employed, with no social insurance or job security, making them vulnerable to disturbance in the sector. For instance, the planned relocation of the Dandora dumpsite will improve air quality and property prices but will jeopardize the livelihoods of over 3000 families directly, and many more indirectly.

The waste sector contributes to climate change, accounting for about 3% of national GHG emissions in 2015. Transitioning to a more circular, greener, and sustainable waste system will create greener jobs in recycling, refurbishment, and repurposing. As in many other sectors, the transition in the waste sector will require a consultative process involving all stakeholders and adopting a fair and holistic approach. Waste management strategies must focus on sustainable production and consumption patterns, as well as reducing, reusing, and recycling waste. These strategies should also incorporate all stakeholders, including the informal sector, in order to have an immediate environmental impact by diverting waste from landfills and conserving natural resources.

Kenya produces 25,000 tons of solid waste daily and 10 million tons annually. Urban areas account for 40% of this total. The primary sources of waste are households, manufacturing, commerce, health care, agriculture, waste treatment, the construction industry, and mining. Nairobi produces over 2,400 tons of waste daily, of which only 38% is collected and less than 10% is recycled. The remaining 62% is burned, creating harmful air emissions and particle pollution, disposed of at the unregulated Dandora dumpsite in Nairobi, illegally dumped on the roadside and waterways, or both. Despite the poor conditions in the Dandora dumpsite, more than 3000 families rely on it for their livelihoods, and it supports another 500,000 artisans in the informal metal (Juakali) sector in Nairobi. While some milestones have been realized, such as the ban on polythene carrier bags, more robust action that is inclusive, green, socially acceptable, and just is needed.

5. Just Transition Challenges and Recommendations for Various Sectors in Kenya

5.7 Tourism

Challenges and Context

The tourism sector contributes about 10.4% to GDP and employs 990,000 people directly, and millions more indirectly (KTSA 2019). The sector is instrumental in the social-economic wellbeing of the country's citizens, with multiplier effects in trade, agriculture, construction, manufacturing, and transport. However, the tourism sector is prone to shocks. According to the Annual Tourism Sector Performance Report 2021, the sector lost about 1.2 million full-time jobs (permanent and casual) and Kshs 152 billion during the COVID-19 peak (Tourism Research Institute, 2021).

The tourism sector is also almost entirely dependent on sensitive climate resources, from wildlife to coastal beaches. Coastal rainforests, marine ecosystems, wildlife, and Mt. Kenya's glaciers make Kenya one of the top tourist destinations in the world and Africa's fifth-largest tourist destination. However, climate change has melted glaciers on Mt Kenya, damaged marine ecosystems and coastlines, affecting tourism destinations.

New sustainable tourism efforts can provide improvements for tourists, tourist destinations, local people, the environment, and businesses. There is also an increasing appreciation of the potential role of tourism in addressing poverty by bringing sources of income to the heart of some of the poorest communities (KPSA, 2014). However, transiting to low-carbon sustainable tourism will require change, affecting businesses and livelihoods. Therefore, economic development and environmental protection within the tourism sector should not be seen as opposing forces, but should be pursued concurrently as mutually reinforcing aspirations.

Climate change adversely impacts the sector, but accounting for climate change is uncommon among businesses. Moreover, the sector accounts for significant GHG emissions, mostly through linkages with other sectors like transport. Overall, however, GHG emissions in the tourism sector are low relative to Kenya's national emissions, which are mainly from transport and energy use. Despite its low GHG contributions, tourism is heavily impacted by climate change (KEPSA, 2014).

Recommendations

Policies and actions must aim to strengthen the benefits and reduce the costs of tourism. To this end, many low-carbon actions are being applied by tourism operators, such as solar water heating, energy-efficient lighting and appliances, and more efficient passenger vehicles (KEPSA, 2014). The sector, therefore, needs to take a low-carbon approach, including adopting solar heating and lighting systems, waste management practices, adopting eco-designs, and sustainable marketing, among others. If proper care is not taken to adopt a holistic, inclusive, and participatory approach, transition programs could inadvertently cause more job losses than they create.

The interlinkages between tourism and other sectors mean that the transition will affect people working directly in the industry and many others. Coastal communities, hotel industry players, communities adjacent to parks and reserves, tour companies, suppliers, and others will be key stakeholders in ensuring that decisions are socially responsible and economically inclusive.

Summary: Tourism contributes to 10.4% of Kenya's GDP. It is the third largest foreign exchange earner and employs over 990,000 people. However, the sector's vulnerability to shocks such as COVID-19 was demonstrated by massive job losses (about 1.2 million jobs) in 2020. Although the sector's contribution to GHG emissions is minimal, the impacts of climate change on the sector are enormous. Therefore, an inclusive green agenda in the sector is vital. The tourism sector implements several fragmented low-carbon measures, including solar water heating, energy-saving lighting and appliances, and more efficient passenger vehicles. However, the sector lacks a coordinated inclusive green strategy and has glaring gender inequalities. As a result, targeted strategies involving all stakeholders must be developed to ensure an inclusive, socially, ecologically, and economically sound transition process.

6. Gender, Youth, Social Inclusion and Protection

Transitioning to a low-carbon economy and creating a climate-safe future, while ensuring that economies can efficiently cater to a growing population and provide decent and sustainable work for all, is one of the critical challenges of the 21st century. Achieving this in a manner that ensures the participation of vulnerable groups will be vital for achieving both the SDGs and the targets of the Paris Agreement. However, there is presently fragmentation and a lack of coordination among existing social security programs, schemes, and policies, as well as gaps in crucial data and the capacity to use information alongside other resources to create a robust plan. To bridge the existing inequalities and current capacity gaps in the transition, it is necessary to formulate inclusive and evidence-based policies and strategies. It is also critical that researchers and policymakers work together to analyse the just transition's cross-cutting issues, including those related to gender, youth, vulnerable communities, marginalized groups, and the recovery from the COVID-19 pandemic.

6.1 Gender

This is a crucial component for a just transition. While gender equality has gained traction within climate actions, exclusion, heightened vulnerability, and discrimination have not disappeared. Most climate mitigation and adaptation policies and actions are not responsive to gender, and do not account for gender-specific vulnerabilities. Mainstreaming gender needs into climate action will be an integral part of transitioning to a low-carbon economy in Kenya, as impacts of climate change are sometimes gender-specific and can worsen existing gender vulnerabilities.

As such, gender justice needs to be included as a principle of the just transition, and the just transition should be ensured across diverse communities. To mitigate existing gender inequalities, the country could introduce gender quotas in newly established sectors (green sectors), build inclusive work environments, ensure gender representation in stakeholder consultations, and account for women's care and informal work in decision-making processes. This must be coupled with increased financing and small grant opportunities to support community-based just transition initiatives. Gender must be systematically included in NDC and all sectoral plans. A just transition that is gender-sensitive could contribute to changing gender norms across the country. Kenya adopted the gender policy in 2019, aiming to mainstream gender issues in all development discourses, including climate change discussions. Further, there are sectoral efforts to achieve specific sector gender policies, for instance, the energy gender policy 2019 and the NEMA gender policy. These efforts are fundamental to ensuring gender issues and perspectives are accounted for in every transition step.

Summary: Gender mainstreaming is evident in the fight against climate change, but exclusion, heightened vulnerability, and discrimination are still persistent issues. Gender inclusion, therefore, forms a fundamental part of the just transition discourse. Just transition and gender inclusion present a rare opportunity to cure existing gender infirmities through targeted policies and strategies in the just transition process and the green sectors. Several gender mainstreaming milestones can be identified in the country, e.g., the gender policy 2019, the Energy Gender Policy 2019, and the NEMA gender policy etc. Opportunities still exist for the deliberate inclusion of gender considerations in the NDC and MTPIV, among others. However, there is more ground to be covered, and everybody is needed onboard.

6.2 Youth

The transition to a low-carbon economy should be centred on the youth. According to the 2019 census, 29% of the Kenyan population is between 18-35 years old. Further, 69% of the population is unemployed or underemployed, and most of the unemployed are youth (GoK, 2019). The transition will heavily affect the youth as their future and livelihoods will be impacted by changing sectors. The struggles and opportunities that will emerge with the transition to a green economy will require youth to adapt. Addressing the issues youth face in a just transition could reduce existing challenges and inequalities, and build a fairer and more inclusive economy. Therefore, the transition will need to endow young people with the capacity to participate in decision-making and

guarantee their right to participate in international and national processes.

Kenya needs to invest in re-designed education systems that reflect the new low-carbon industries that are being established. Transitioning sectors will face a key challenge: attracting and keeping the young workforce. Therefore, new policies related to just transition must also consider strategies that support and encourage youth to stay and work in sectors such as energy or agriculture. Re-orientating the work environment towards new climate-friendly and climate-safe work and practices, through capacity building and targeted funding, could also facilitate a just transition.

Additionally, developing new skills in line with the transition, reskilling, and promotion of green jobs should be firmly incorporated into the energy sector and the economy. Finally, social protection systems are also essential to shield youth from adverse impacts on their education, development, health, and safety during large-scale economic and societal transformation. To this end, the government of Kenya, through the ministry of environment, has developed and adopted a Youth Climate Action Strategy for Kenya from 2021 to 2030. The strategy addresses three key priorities to empower youth (Youth Climate Action Strategy for Kenya 2021-2030):

- Integration of the youth in climate action
- Capacity building of the youth to take climate action
- Inclusiveness of youth-led climate action

Summary: Youth must be at the center of Just Transition discussions and action, as 29% of the Kenyan population is aged 18-35, and most of the unemployed population is youth (GoK, 2019). The struggles and opportunities that will emerge due to the transition will be unique but will provide an opportunity to build a fairer and more inclusive economy. Key actions include redesigning the education and working environment, building capacity, developing new skills, reskilling, and implementing social protection. Notable progress is starting to be seen in Kenya's youth climate action strategy from 2021 to 2030.

6.3 Social Inclusion and Protection

Social inclusion and protection are critical cross-cutting elements of a just transition. The IPCC's Fifth Assessment Report emphasized the importance of assessing synergies between social protection, disaster risk reduction, and social development. The report highlighted opportunities to strengthen social protection schemes for a just transition and connect them to other processes and mechanisms, such as inclusive insurance.

Trade unions, Civil Society Organizations (CSOs) and Community Based Organizations (CBOs) can play a crucial role in determining social protection policy measures. As socio-economic and environmental risks are strongly interlinked, climate policies and economic transitions can leave large sub-sections of society vulnerable to loss of livelihoods, exploitation, loss of subsidies and disposable income, and other adverse impacts. Social protection policies can protect people from deprivation, loss of livelihoods or income, and social exclusion. Social protection has been recognized as a human right and an essential pillar of just transition. Nevertheless, globally, only a quarter of the population has access to adequate social protection coverage (ILO, 2016) and more than half lack any coverage at all. Social protection systems for a just transition should be shock-responsive, holistic, inclusive, and able to adapt to progressive climate change impacts and transforming economies.

Social protection schemes can be contributory and non-contributory. Such schemes include income support, unemployment insurance or benefits, maternity protection, healthcare, pensions, social assistance and other benefits. Reskilling and retraining, psycho-social support, compensation for temporary income losses, and job guarantee will play a critical role in the transition. Some policies can also support adaptation, such as minimum crop price guarantees, payment for environmental services, disaster risk financing and climate risk insurance.

The government of Kenya developed five-year labour and protection strategy, with the latest being the Ministry of Labour and Social Protection Strategic Plan 2018-2022. This strategic plan aims to ease the challenges the country is facing, such as high levels of unemployment (especially amongst the youth), increased industrial strikes in the public sector, weakening institutional capacity, skills mismatch, and low productivity and competitiveness. In addition,

in the Social Protection sector, the country faces challenges such as weak community organization and participation, abuse and violation of the rights of children, older persons and Persons with Disabilities (PWDs), and increasing demand for social assistance (Ministry of Labour and Social Protection 2019). Additionally, climate change may increase the vulnerability of the poor. As a result of low capacity and a lack of coordination, a huge gap exists in how social protection aspects will be incorporated into climate change action, especially in just transition spheres.

Summary: The impacts of climate change have heightened challenges for the vulnerable and the most at-risk members of society. A lack of deliberate efforts to incorporate the needs of these groups is evident in current climate change documents in Kenya. Social protection has been recognized as a human right and an essential pillar of just transition, as it helps insulate people from risk, exploitation, and exclusion. Notable plans and strategies have been developed in the country, e.g., the Ministry of Labor and Social Protection Strategic Plan 2018-2022, which aims to protect the poor, unemployed, children's rights, the old and the vulnerable, and people living with disabilities (PLWDs), but further planning and coordination is needed.

7. Stakeholder Perceptions

Just transitions are mentioned in Kenya's updated NDC. It is therefore critical to examine how well the idea is understood within government operations, and how the country plans to incorporate it in development plans and climate action.

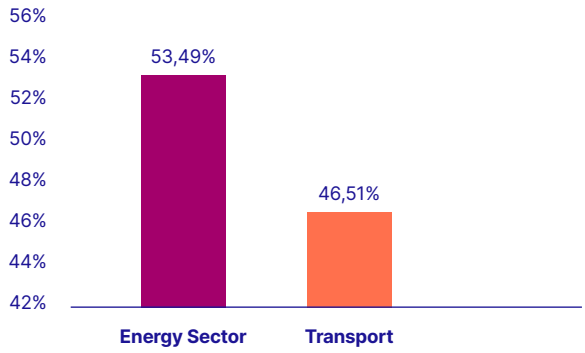
Broad stakeholder engagement is also necessary to ascertain how well climate change, and the just transition, are understood among the public. To assess public understanding, this project conducted interviews in November 2021. Three sectors (energy, transport, and waste management) were earmarked for the exercise, which targeted low-level workers in each sector. These sectors are among the most affected by climate change and subsequent just transition initiative policies.

Most of the engagement occurred in the energy and transport sector. We sought to understand whether those working in the sectors were aware of climate change and its impacts. We also sought to understand their awareness of how climate change influences their day-to-day work and the proposed government policies to mitigate the impacts of climate change. We also hoped to discover what the workers thought about these policies, such as the transition to renewable energy sources, and whether they thought the policies would affect them, and if so, how. We discussed their views on the measures they have taken to ensure that the proposed changes have minimal impact on their livelihoods. The engagement also sought to get their views on measures the government should take to cushion them from the adverse impacts of low carbon policies.

7.1 Preliminary Findings

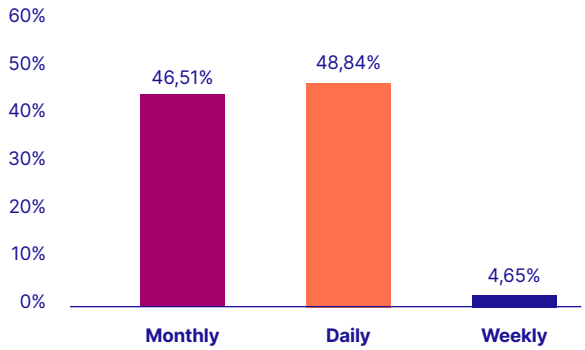
We interviewed 43 participants working in energy and transport sectors. Out of the 43, over half (53.5%) were from energy sector (petrol stations workers, charcoal vendors, paraffin vendors, customer service agents, etc.) while 46.5% were from the transport sector (drivers, conductors, stage managers, route marshals, public service vehicle owners, etc.). Close to half of the respondents were young and had worked in the sector, on average, for 14 years.

Figure 1: Participation from the Economic Sectors



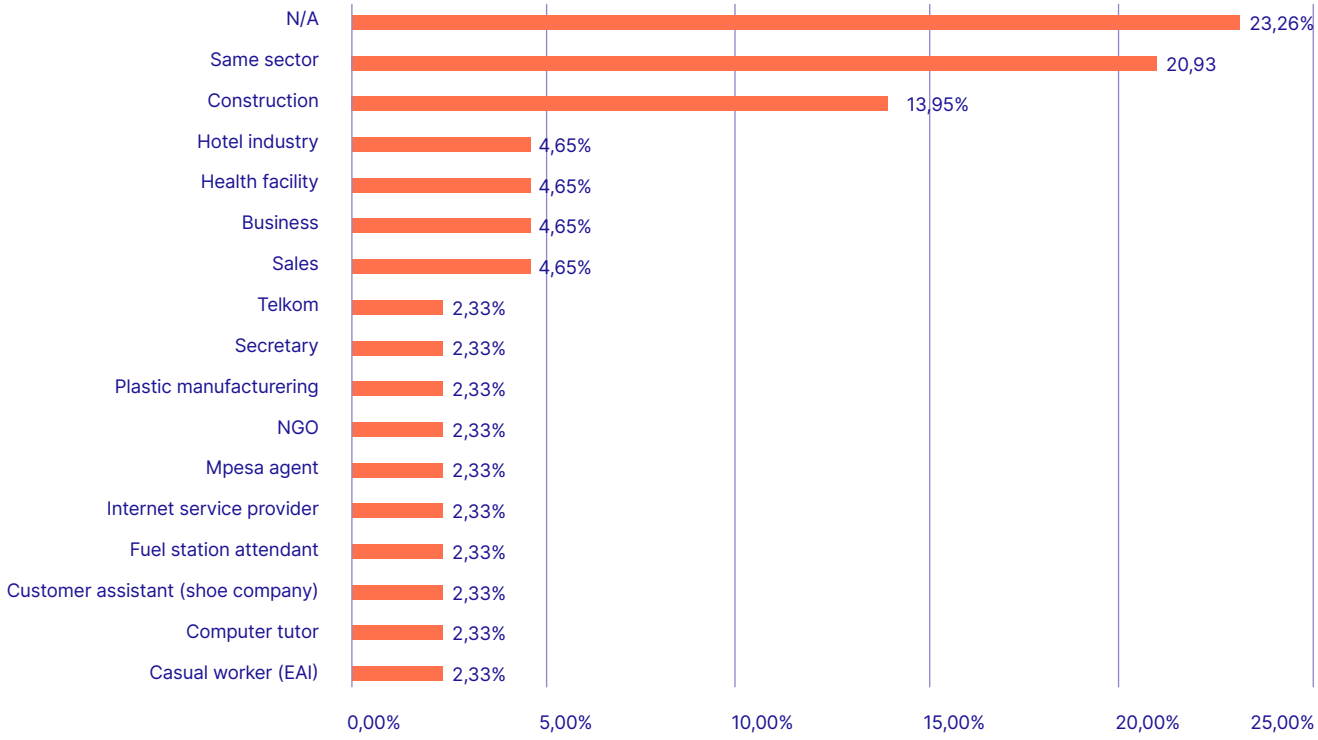
About 48.8% received daily wages, implying a daily pay for work done, where absence from work meant no pay for that day. About 46.5% were renumerated monthly, while close to 5% of the workers were paid on a weekly basis (Figure 2). Whether they have security of tenure for their jobs or not could be ascertained.

Figure 2: Frequency of Payment



7. Stakeholder Perceptions

Figure 3: Previous Employment

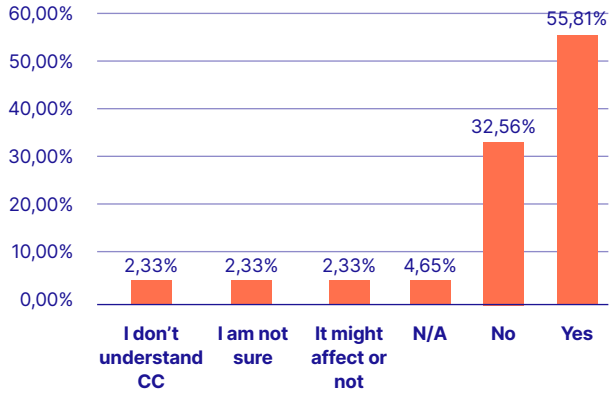


Over 76% of the participants had previously been employed before their current jobs, while 23% had no previous employment. However, some of those with previous employment worked in different sectors, while others were still in the same sectors (energy and transport). Many were in the construction sector, health, and service industries. Nonetheless, about 20% worked in the same sector in their previous employment (Figure 3).

The majority (84%) of the participants in the two sectors reported hearing or knowing about climate change, while 16% had never heard about climate change. This contrasts with findings in an AfroBarometer report (2022), which found that only 54% of Kenyans have heard about climate change. This discrepancy may be explained by different levels of awareness and education amongst urban and rural populations. In our survey, about 56% of the participants reported that climate change might affect their work, 37.2% reported that climate change did not affect their work, 2.3% were not sure, 2.3% were indifferent, and 2.3% didn't understand climate change and could not tell if it affected on their work or not (Figure 4).

We presented three government policy interventions that have been proposed to transition the two sectors to low-carbon sectors, and asked

Figure 4: Influence of Climate Change on Work



participants whether they thought the policies would affect their work. The interventions were: Bus Rapid Transportation in Nairobi, energy saving models (like electric cars), and waste management policies. Close to 54% of the participants felt that renewable energy policies applied to their work, over 46% indicated that Bus Rapid Transportation (BRT) and other energy-saving modes of transport applied to their work, and a further 46% said waste recycling or landfills for waste management policies applied to their areas of work. The participants had mixed feelings about whether the policies would affect their lives. A majority (83.72%) reported that the policies would influence their lives, while 16.28% felt that the policies would not affect their lives. In the

transportation sector, our target group included bus drivers, bus conductors, and route marshals, mainly along Thika road transport route. The stakeholder engagement deliberately chose the Thika road route, as this will be the highway where the government will pilot a BRT system.

Most of those we spoke with had heard of climate change, and their knowledge revolved around weather patterns. Since their daily work involved dealing with passengers, changes in weather such as rain affected their customer base, as fewer people travel in wet weather. However, they did not recognize that diesel-fuelled vehicles contributed to climate change. The proposed policy intervention of introducing Bus Rapid Transportation aims to reduce congestion on the main roads within and out of the city and consequently reduce emissions from vehicular transport. However, according to the public transport bus (Matatu) workers, encouraging the use of Bus Rapid Transportation would potentially lead to the loss of jobs since the BRT would require fewer people to operate. Consequently, their daily incomes will be affected, as only a few workers would be absorbed by BRT.

In transiting to the low carbon transport sector, workers reported that they may lose jobs as working in low-carbon alternatives, like BRT, may require new skills and might not create enough opportunities to absorb all the displaced workers. As such, we realized that most of those working in the matatu sector had no backup plan if they were severely affected after BRT implementation. Some, however, indicated that they would go back to their previous jobs or start businesses. Many of them wished to continue working in the transport sector in similar positions, if there were employment opportunities in the transition.

The general feeling was that the government should introduce the proposed changes in a slow manner to give them time to adjust and, to prioritize absorbing those from the Matatu sector into the BRT. This is because there are an estimated 70,000 people employed in Nairobi's matatu industry, and about half of these jobs are at risk from BRT. If BRT creates 5-6,000 new formal jobs, and no action is taken to protect livelihoods, there will be a net loss of 30,000 jobs. The government should also improve the existing transport systems to work hand in hand with them in the new transition to equip the workers with the requisite skills set for the BRT system.

In the energy sector, we focused on those in managerial positions in the fuel stations, pump attendants, and those that sell charcoal and kerosene in Nairobi neighbourhoods. Their knowledge of climate change revolved around changes in weather patterns. However, a few are aware of global warming and the relationship between climate change and the environment. When asked if climate change affects their work, the majority did not think that climate change affects their jobs. There were, however, some who felt that climate change influences their jobs. Among those who felt that it affects their work were charcoal sellers who observed low customer numbers during sunny days. They also observed fewer customers on wetter days.

The majority of those interviewed in the energy sector felt that government measures, such as encouraging the transition to and using renewable energy sources, would affect their jobs. Business people foresaw effects like job losses and reduced customer numbers. Nonetheless, a few did not anticipate any effects resulting of proposed government measures to decrease GHGs. The respondents working as petrol attendants, managers, charcoal vendors, and others, had no alternative plan in case their jobs were affected. Most workers were not willing to change jobs, and indicated they would prefer to retain their current jobs. Some alluded to searching for other jobs, while others indicated that they might establish new businesses in case the current job became unavailable. A few couldn't think of any jobs that aligned with a greener energy sector, and indicated that either way, they would prefer to retain their current jobs.

The participants strongly believe that the state plays an essential role in helping people who might be affected by the transition. Participants suggested various measures the government could take to compensate or ease the effects of transition or mitigation measures. For example, some thought that the state should provide new jobs for the affected, retrain and reskill the affected workers. Although many of these suggestions align with the just transition, the workers in the sector were not aware of the concept of Just Transition. In this regard, we explained the concept and what it aims to achieve in the process of transitioning to a low-carbon development pathway.

8. Conclusion

Kenya's NDC provides an entry point to develop inclusive, participatory, equitable, and gender-responsive approaches to a low-carbon economic transition. Further, localization of the SDGs, including national and subnational climate actions, will help strengthen the process. The process could start by prioritizing the largest emitters such as energy, transport and agriculture, and integrate just transition principles into climate commitments to ensure that climate action does not increase existing vulnerabilities and inequalities.

Skills and capacity-building, climate education, social protection risk management, and other elements must be clearly presented and mainstreamed into the county's NDC and related policies and plans. Finally, policy frameworks should provide for the inclusion and engagement of different stakeholders, including experts, technical actors, civil society organizations, and other entities who could contribute to the process and ensure that a just transition is achieved. Policies for a just transition should be data driven and evidence-based. Therefore, institutions of higher learning, like universities, could help by conducting household surveys to map out societal needs and vulnerabilities, generating the data needed to ensure policies capture the needs of diverse members of society. Similarly, public-private partnerships could play a role in ensuring holistic and grounded policy interventions for a just transition

Energy and transport sector participants had some knowledge about climate change; however, a few did not know about it at all. The majority did not understand the relationship between climate change and their work. Although some were aware that climate change could have an adverse effect on their work, they did not have knowledge of alternative employment opportunities. Nonetheless, some alluded to the idea of looking for new jobs and starting small businesses. According to the participants, the policies that steer just transition discourse should ensure that people are given alternative jobs, especially the ones affected adversely by the policies. Additionally, the state should come up with retraining and reskilling programs to equip them with new skills to adjust to low-carbon versions of their sectors or transition to other sectors. Finally, it is evident that, while ideas about social justice and fairness are well understood, the concept of Just transition has not permeated to the public.

In developing and transitioning economies, more than half of the labour force works in the informal sector (shadow economy). This is true for Kenya. According to the Kenya National Bureau of Statistics (KNBS) the country has a large and burgeoning informal sector which generated 83.6% of total employment in 2018 and 33.8% of GDP in 2015. Informal firms congest infrastructure and other public services, but do not contribute the taxes as there is no mechanism in place to pay taxes other than the value added tax that they contribute while buying goods. Since the informal workers and businesses are not formally registered, they do not pay income tax in the same way as formal ones, and most would in any case fall below the thresholds their countries set for paying personal income tax. Informal businesses also do not pay VAT to the government because they are unregistered. However, they do pay VAT on inputs they purchase, without any chance of a refund, which is only available to VAT-registered companies.

As manifested during the COVID-19 pandemic, any event that disrupts normal operations affects the informal sector more than the formal sector, due to the lack of social security. Informal sector workers and operators lost employment, income, and livelihoods, and had neither social protection nor insurance schemes to cover or cushion them from the economic effects of the pandemic. The same is likely to happen if a transition process is not well designed or lacks inclusivity. Sectors like waste, manufacturing, and agriculture will have to incorporate the informal sector and leverage their understanding of the geographic and the market dynamics if they are to transit to more sustainable sectors. Robust legal and policy frameworks will be needed to bring the informal sector to the negotiation table as it is not currently represented in many negotiations or policy public participation forums.

The COVID-19 pandemic exposed the soft underbelly of the world economic system, especially the health care and food production and distribution systems. Millions of people were plunged into poverty, while existing vulnerabilities were highlighted and amplified. However, the pandemic also provided a chance for economies to bounce back better and

stronger, and to focus on a green recovery that integrates elements of just transition. COVID-19 presented opportunities to tackle both the health crisis and the climate crisis through a society-centred approach, and approach that could be replicated as part of the just transition.

If the countries adopt a green recovery path to COVID-19, this approach will be instrumental to speeding up the transition to low carbon economy. Kenya has already rolled out a recovery path, but this does not explicitly include the green agenda. It is vital that the country incorporates climate mitigation aspects and a just transition process into development and recovery efforts to ensure that existing socio-economic inequalities are not exacerbated. The government could provide measures like grants, subsidies, loans, and tax relief programs aimed at stimulating green industries. Other options include creating a circular economy, funding research and development, instituting alternative forms of social protection, promoting improved air quality and waste management, defining more sustainable pathways for society and nature, and increasing resilience. The public, represented by civil societies, labour unions, CBOs and others, could push the state to integrate climate action, pandemic recovery, and social justice on local, and national, scales.

Governments, labour groups, investors, businesses, civil society, and multilateral agencies are increasingly using principles of just transitions to better understand where the impacts of systemic shifts will be felt, and what actions could be taken to mitigate losses and distribute gains fairly. The utility of a just transition has inspired the government to use COVID-19 recovery stimulus packages in ways that structurally transform economies, while also reducing the risks of climate change. While the government is an important player in the just transition, its overarching role is to create a conducive environment in which fair and just process can thrive. Other key players are workers, citizens, local communities, and consumers.

Many sectors will experience a degree of change, and this may result in the loss of jobs or the need for new skillsets. As such, making sure workers across sectors are actively involved in just transition plans, have access to decent and quality jobs, and benefit from training and skills development, will determine how fair and just the process will be. A citizenry that understands the importance of the transition, and the extent of the changes required, will be an asset to just transition. Therefore, creating frameworks for active citizen engagement through constructive dialogue and policy design to coordinate just transition actions at the local and national level will be essential to ensuring success. Local communities understand their environments better than anyone, and have rich cultural and traditional solutions and technologies that could compliment national efforts to achieve a just transition. Thus, there is need to maximize the positive co-benefits of the transition for communities, while also respecting local and international human rights, and enabling communities to thrive and increase resilience in the face of climate change. It is therefore imperative to involve those people in planning how their livelihoods will be affected.

One advantage of transitioning and adopting green economic models is that they provide cheaper alternative goods for consumers, but this realization may be hard to achieve in the short-term. Low carbon goods are expensive and limited in supply, especially for lower income groups in the population. Additionally, they may not be easily divisible into smaller units for individuals and small informal businesses. Therefore, ensuring that consumers, specifically low-income parts of the population, have adequate access to affordable and sustainable products (including through financial services) is important. This will not only increase public acceptance of the process, but will increase equity.

In addition, creating more environmentally friendly products and services will bring about a largescale improvement in the quality of consumption. Access to affordable and sustainable energy services will be a driver for social inclusion among the most vulnerable groups in society. Investments in sustainable production and consumption, as well as natural resource management, will produce a net increase in total employment and stimulate innovation. Setting high standards for labour rights, human rights, and sustainability throughout the supply chain could maximize the social and economic co-benefits resulting from the transition. Additionally, special attention should be paid to vulnerable groups, such as people with disabilities, minoritized and marginalized communities, and women. The transition within the categories discussed above should be inclusive and accessible.

Recommendations for a Just Transition in Kenya

Although just transition as a concept is relatively new, and its principles and definition are an ongoing discussion, there is already enough information to start the work towards a just, green, and socially inclusive economy. Thus:

1. It is extremely important that development plans such as the NDC, and Medium-Term Plans (MTP IV) and other government documents clearly map out the points of entry for the just transition in specific sector. The mapping should be informed by data and information from coordinated research through collaborative actions among government institutions, research organs, institutions of higher learning, CSOs, NGOs, and community members.

2. Although a few of the interviewed public members had some knowledge about climate change, this knowledge is limited. Further, the just transition seems not to have permeated the public domain. Therefore, it is important to have targeted awareness campaigns among the public on climate change issues, just transitions, and the implications of the two interrelated issues.

3. The informal sector is important for employment and economic growth in the Kenyan economy. The challenge is that this sector is not structured, and uses public utilities without contributing to the taxes needed to maintain or expand them. As such, there are no social security and protection programs for workers in this sector. They are therefore vulnerable to shocks, such as climate change impacts and the impacts of transition policies. Thus, all sectors should deliberately incorporate the informal sector in their transition plans, strategies, and action.

4. The outbreak of the COVID-19 pandemic exposed the weaknesses in global and national systems of production, distribution, and health, among others. It also illustrated the existing inequalities and vulnerabilities. However, it also presented an opportunity to simultaneously fight the pandemic and climate change, and include just transition in the recovery plans. This opportunity could allow Kenya to recover better and greener. Currently, climate action and just transition tenets are not part of the recovery plans. To this end, the government should rally other change agents behind this course to ensure everyone is involved in an inclusive process.

5. A just transition will need informed and skilled citizens if the shift to decarbonized sectors is to be realized. This requires the state to collaborate with other stakeholders to develop reskilling and training programs, create awareness, and constantly engage communities to increase the asset base for just transition.

6. All processes, actions, policies, and laws should move towards making green goods and services more accessible and, if possible, divisible, especially for the informal sector workers, vulnerable groups, the marginalized, and the poor. This should be accompanied by favourable labour rights, human rights, and sustainable value chains.

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