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## **Extended Producer Responsibility (EPR) and Waste Management in SADC Countries: A Social Justice and Human Rights Approach to Sustainable Development**

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**Masila Joshua Masipa**

*University of Venda*

*Arts and Social Sciences (Development Studies Unit)*

*Faculty of Humanities, Social Sciences and Education,*

*Limpopo Province, South Africa*

*E-mails:: masilajoshua.masipa@univen.ac.za*

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### **Abstract**

Extended Producer Responsibility (EPR) is a policy concept that holds producers accountable for their products' whole lifecycle, including post-consumer waste management. In the Southern African Development Community (SADC), where waste management infrastructure is generally poor, EPR frameworks are critical for long-term development. This study examines EPR through the lenses of social justice and human rights, focusing on how policy design might enable equal access to waste management services while protecting vulnerable areas from environmental dangers. This study is based on environmental justice, human rights, and sustainability ideas, with a focus on the role of governance in equitable waste management. It adds to the scholarship of learning by broadening EPR debate beyond waste reduction and emphasising its potential for resolving socioeconomic inequities. While EPR has been extensively researched in high-income countries, this study contextualises its application in SADC, influencing policies that promote inclusive and rights-based waste management. The theoretical framework is based on Environmental Justice Theory, which investigates the unequal distribution of waste-related risks; the Human Rights-Based Approach (HRBA) to Development, which ensures that waste policies are consistent with fundamental rights; and Sustainability Transitions Theory, which evaluates

systemic shifts towards long-term environmental governance. Research Questions: (1) How do SADC nations' current EPR policies correspond with social justice and human rights principles? (2) What impediments prevent the effective implementation of EPR in these regions? (3) How can EPR help to create inclusive and sustainable waste management systems? A qualitative approach is used, which includes policy analysis, stakeholder interviews, and case studies. Data sources include government data, industry rules, and community surveys. Findings and Implications: The study concludes that insufficient enforcement and economic inequities impede EPR's success. Stronger governance, public-private partnerships, and community involvement are required for inclusive waste management policy.

**Keywords:** : *Extended producer responsibility, Waste management, Social justice, Human rights, Sustainability, environmental policy.*

## Background

Waste management continues to be a key environmental and public health issue in the Southern African Development Community (SADC), where poor infrastructure and fast urbanisation increase waste creation and disposal challenges (Godfrey and Oelofse, 2017). Traditional waste management techniques in many SADC countries have primarily centered on reactive, end-of-pipe solutions, consequently neglecting the crucial role of producers across the entire product life cycle (Nahman, de Lange, and Oelofse, 2012). In this context, Extended Producer Responsibility (EPR) has evolved as a widely recognised policy tool aiming at moving responsibility for post-consumer waste management from municipalities to producers (Lifset et al., 2013).

EPR regulations encourage businesses to design products with longer lifespans and higher recyclability, resulting in lower environmental consequences (OECD, 2016). While high-income nations have generally adopted EPR frameworks, their implementation in developing regions such as SADC is patchy, hampered by inadequate regulatory enforcement, insufficient institutional capacity, and socioeconomic disparities (Tewodros, 2024). Furthermore, implementing EPR in SADC necessitates a contextual understanding that includes social justice and human rights dimensions, ensuring that vulnerable communities are protected from environmental harm and that all citizens have equitable access to waste management services (Schroeder, 2019).

This study's theoretical foundation is based on Environmental Justice Theory, which criticizes the disproportionate exposure of marginalised

groups to environmental risks (Bullard, 2000), and the Human Rights-Based Approach (HRBA) to Development, which emphasises that environmental governance must be consistent with fundamental human rights such as the right to health and a clean environment (Roy, 2016). Furthermore, Sustainability Transitions Theory sheds light on how systemic innovations and governance reforms can propel the change to more sustainable and inclusive waste management systems (Geels, 2011).

By combining these approaches, this study fills a vacuum in existing EPR research that frequently overlooks the confluence of waste governance, social justice, and human rights in low- and middle-income settings. The purpose is to inform strategies that improve waste management efficiency while also contributing to the SADC region's broader sustainable development goals.

## **Introduction**

Effective waste management remains one of the most critical environmental and social concerns in the Southern African Development Community (SADC), an area plagued by fast urbanisation, inadequate municipal infrastructure, and vast socioeconomic disparities (Godfrey and Oelofse, 2017). Many SADC nations' traditional waste management paradigms rely significantly on under-resourced public systems and informal garbage collectors, which frequently leads to uncollected waste, unlawful disposal, and associated public health risks (Niyobuhungiro & Schenck, 2022). In response, Extended Producer Responsibility (EPR) has emerged as a novel policy tool that transfers responsibility for post-consumer waste from local governments to producers, encouraging more sustainable product designs and mitigating environmental impacts (Lifset et al., 2013; OECD, 2016). EPR frameworks have been widely used in Europe, North America, and parts of Asia, and evidence demonstrates that they help to increase recycling rates, redesign products, and reduce landfill use (OECD, 2016). However, the application of EPR framework in developing countries like SADC remains disparate and weakly institutionalised, often suffering from insufficient regulatory rigor and a broad lack of integration into the majority of national waste policies (Nahman, de Lange, & Oelofse, 2012).

The current academic and policy literature on EPR focuses mostly on high-income nations, with little consideration given to how EPR frameworks may be established and implemented in regions with significant social and economic inequality (Schroeder, 2019). Furthermore, while EPR has typically been viewed as a technical or

economic tool for enhancing waste management efficiency, there is a growing acknowledgment of the need to incorporate principles of environmental justice and human rights to achieve equitable outcomes (Bullard, 2000; Knox, 2018). Marginalised and low-income communities in SADC are frequently disproportionately exposed to the health and environmental concerns associated with poorly managed waste systems, yet these people are rarely involved in the design or implementation of waste governance changes (Godfrey & Oelofse, 2017). This study uses Environmental Justice Theory (Bullard, 2000), the Human Rights-Based Approach (HRBA) to Development (Knox, 2018), and Sustainability Transitions Theory (Geels, 2011) to investigate how EPR can contribute to more inclusive, rights-based, and sustainable waste management in the SADC region.

The primary issue addressed by this study is that present EPR policies in SADC are either weak or non-existent, and when they do exist, they frequently fail to reflect values of social justice and human rights. A considerable lacuna exists within the scholarly and policy literature concerning the methodologies through which EPR frameworks could be strategically adapted to effectively address the region's complexities in governance and equity. This study adds to the body of knowledge on how to make waste management strategies more inclusive and equitable, particularly in poor countries, by examining EPR through the perspective of human rights and social justice.

The research focuses on the following questions: (1) How do SADC's present EPR policies align with social justice and human rights principles? (2) What barriers limit the proper implementation of EPR in these regions? (3) How can EPR help to develop inclusive and sustainable waste management systems? In doing so, the study enhances scholarly debates on EPR by widening its scope beyond technical waste reduction to include human rights and environmental justice considerations, as well as providing policy recommendations for more inclusive waste governance in the SADC area and beyond.

## **Theoretical Framework**

This study uses three complementary theoretical frameworks Environmental Justice Theory, the Human Rights-Based Approach (HRBA) to Development, and Sustainability Transitions Theory to investigate how Extended Producer Responsibility (EPR) can help SADC countries manage waste in an inclusive and sustainable manner. Environmental Justice Theory criticises the unequal distribution of

environmental risks and benefits, highlighting how vulnerable populations are disproportionately exposed to pollution and waste (Bullard, 2000). In the context of SADC waste governance, this viewpoint emphasises how impoverished and informal communities are frequently plagued by inadequate trash collection services and unsafe dumping, resulting in public health risks and environmental degradation (Godfrey & Oelofse, 2017).

In addition, the Human Rights-Based Approach (HRBA) to Development emphasises that environmental governance must be consistent with internationally recognised human rights, such as the right to health, acceptable living conditions, and a clean and safe environment (Knox, 2018). Applying HRBA to EPR policy formulation ensures that the opinions of affected communities, particularly the most vulnerable, are heard in policy processes and that legislative frameworks protect all citizens' dignity and rights (Schroeder, 2019).

Finally, Sustainability Transitions Theory offers a systemic perspective on how long-term transformations toward more sustainable governance practices can be accomplished (Geels, 2011). It emphasises the importance of multi-level interactions between specialised inventions, existing institutional frameworks, and larger sociopolitical landscapes in facilitating or impeding change. This paper explains how EPR, introduced as a policy innovation, can progressively change established waste management systems into models that are both environmentally sound and socially just. Together, these three frameworks provide a comprehensive method to studying EPR in the SADC context, considering not only environmental effects but also social equality and structural change.

## **Literature Review**

Global experiences with Extended Producer Responsibility (EPR) show its potential for increasing sustainable waste management but also illustrate the difficulty of adapting EPR to varied social, economic, and governance situations. EPR has been widely adopted in Europe since the early 1990s, with strong legislative frameworks in place, such as the EU Waste Framework Directive and the Packaging and Packaging Waste Directive (European Commission, 2018). These policies have greatly raised recycling rates and fueled product design innovation, particularly in countries like Germany and Sweden, where governance capability and stakeholder cooperation are strong. Countries in Asia, such as Japan and South Korea, have created very efficient EPR systems that combine

modern recycling technologies with robust public awareness campaigns (Lifset et al., 2013). South Korea's EPR system employs a dual regulatory strategy, incorporating economic mechanisms to reward the development of sustainable products alongside strict oversight protocols to ensure compliance (Sakai et al. 2011).

In comparison, Latin America provides a more mixed picture. Chile, Colombia, and Brazil have implemented national EPR legislation based on European models, but face issues such as insufficient enforcement, informal sector integration, and regional discrepancies (Schroeder, 2019). In Chile, for example, the 2016 EPR law stresses circular economy concepts but requires extensive institutional reform to achieve equitable results (Quintero and Valenzuela, 2020). Lessons from Latin America emphasise the significance of participatory governance, incorporating informal garbage pickers, and tailoring EPR frameworks to local socioeconomic situations (Schroeder, 2019).

These worldwide experiences indicate that, while EPR may drive sustainable transitions, its success is dependent on incorporating social justice principles, strengthening governance capacity, and promoting inclusive public-private partnerships insights that are extremely applicable to the SADC environment.

Extended Producer Responsibility (EPR) has emerged as an innovative policy instrument for supporting sustainable waste management by holding producers accountable for their products' whole lifecycle, including post-consumer trash (OECD, 2016). Internationally, EPR has helped to increase recycling rates, redesign products, and reduce landfill use, particularly in Europe, Japan, and Canada (Lifset et al., 2013; OECD 2016). Much of the literature discusses EPR as a market-based or regulatory instrument for increasing waste efficiency and encouraging circular economy models (Tojo, Lindhqvist, & Davis, 2001). However, concerns have been raised about the equitable implications of EPR, particularly in poor countries where waste governance frameworks are weaker and informal waste industries play an important role (Schroeder, 2019).

Extended Producer Responsibility (EPR) frameworks are still in the early stages of development and implementation in both North and Central Africa, with noteworthy variances across nations and industries. Countries in North Africa, like Morocco and Tunisia, have begun to incorporate EPR ideas into broader waste management reforms, driven by European Union partnerships and sustainable development goals (UNEP, 2020). Morocco's National Waste Recovery Programme contains EPR components for packaging and electrical waste, but

obstacles remain in terms of institutional capacity, private sector engagement, and incorporating informal waste collectors into official systems (Louzizi, Chakir & Sadoune, 2025). Tunisia has pioneered EPR in plastic and electronic waste streams with international donor funding; however, enforcement mechanisms are weak and public awareness is low (Sayed, Elagroudy & Nassour, 2025).

In Central Africa, use of EPR is significantly lower. Countries like Cameroon and the Democratic Republic of the Congo (DRC) confront significant institutional, budgetary, and governance challenges that preclude widespread adoption of EPR techniques (Schroeder, 2019; UNEP, 2020). Many Central African cities continue to rely on informal waste management systems, with no government capacity to control or supervise producer responsibilities (Muheirwe, Kombe & Kihila, 2024). Furthermore, there is a lack of consistent regional policy frameworks, and national waste legislation frequently does not require EPR in any structured fashion.

These experiences from North and Central Africa highlight the importance of addressing governance weaknesses, increasing institutional capacity, and developing participatory frameworks that can meaningfully involve informal sector actors, all of which mirror challenges faced in SADC countries (Schroeder, 2019). They also emphasise the necessity for regional cooperation, knowledge exchange, and targeted international assistance in adapting EPR policies to African contexts.

In West Africa, efforts to implement Extended Producer Responsibility (EPR) frameworks are emerging, but they are scattered and primarily project-driven. Ghana is one of the region's more advanced countries, having implemented an EPR scheme for electronic trash (e-waste) under the Hazardous and Electronic Trash Control and Management Act of 2016 (Ossie, 2024). This approach, backed by international partners such as the German Federal Ministry for the Environment and the European Union, seeks to standardise e-waste collection and recycling while integrating informal workers into regulated value chains (Schroeder, 2019). However, practical obstacles such as limited enforcement, insufficient recycling infrastructure, and informal sector resistance continue to restrict its effectiveness (Amankwaa et al., 2021).

While policymakers in Nigeria are becoming interested in EPR for packaging and e-waste, national legislation and regulatory frameworks are still in the early phases of development (Nnorom & Osibanjo, 2008; UNEP, 2020). While pilot EPR programmes for plastics and tyres are currently underway in Lagos State, their efficacy is constrained by

institutional fragmentation and limited producer engagement (Adeola et al., 2021). EPR is gaining traction in much of Francophone West Africa (including Senegal, Côte d'Ivoire, and Benin) thanks to donor-funded pilot projects and regional harmonisation efforts spearheaded by the UEMOA (West African Economic and Monetary Union) and ECOWAS (Economic Community of West African States), but national legislation remains inconsistent (UNEP, 2020).

Overall, West Africa's experiences demonstrate the necessity of long-term political commitment, institutional capacity building, and strong collaboration with informal sector actors in the successful implementation of EPR. These lessons are extremely pertinent to the continued growth of EPR in SADC countries.

Global experiences with Extended Producer Responsibility (EPR) show that, while EPR can create major improvements in waste management, its effectiveness is heavily dependent on governance systems, stakeholder engagement, and local socioeconomic situations. European countries have shown that when EPR is incorporated in solid regulatory frameworks with clear enforcement and industry collaboration, it can effectively increase recycling rates, stimulate eco-design, and support circular economy transitions (OECD, 2016; European Commission, 2018). Asian experiences, particularly in Japan and South Korea, highlight the significance of government leadership, public knowledge, and financial incentives in ensuring producer compliance and technical innovation (Lifset et al., 2013; Sakai et al., 2011).

In Latin America, the increasing implementation of EPR illustrates both its potential capacity to align policy with circular economy principles and the persistent challenges related to informal sector integration and institutional fragmentation (Schroeder, 2019; Quintero & Valenzuela, 2020). African experiences from North, West, Central, and Southern Africa show that, while EPR has potential, implementation is hampered by poor governance, financial restrictions, and inadequate stakeholder participation (UNEP, 2020; Godfrey & Oelofse, 2017). Critically, lessons from Latin America and Africa highlight that without specific focus on social justice and human rights, EPR risks perpetuating existing disparities and excluding informal sector workers (Schroeder, 2019). Successful EPR across all regions necessitates multi-stakeholder collaboration, strong institutional capacity, producer incentives, and meaningful participation of excluded groups lessons that must be applied to SADC EPR policies to ensure more equity and effectiveness.

Studies in the SADC context have documented significant waste management challenges, such as limited infrastructure, a lack of enforcement, fragmented institutional arrangements, and socioeconomic disparities that affect access to basic waste services (Godfrey & Oelofse, 2017; Nahman, de Lange, & Oelofse, 2012). Despite the fact that South Africa has implemented some of the region's more advanced EPR schemes through its Waste Act and Packaging EPR Regulations (Republic of South Africa, 2020), implementation gaps remain, and informal waste collectors, who provide critical services, are frequently excluded from policy processes (Schroeder, 2019; Godfrey et al., 2016).

The research also demonstrates a lack of synergy between EPR and human rights frameworks. While Environmental Justice Theory has highlighted the unequal distribution of waste-related risks (Bullard, 2000), and the Human Rights-Based Approach (HRBA) emphasises marginalised groups' rights to participate in environmental governance (Knox, 2018), few studies have explicitly examined how EPR can be structured to advance these principles in practice (Schroeder, 2019). Furthermore, the application of Sustainability Transitions Theory to EPR in poor countries is understudied, despite its potential to inform long-term systemic change toward socially inclusive and sustainable waste management (Geels, 2011).

Overall, the present literature gives useful insights into EPR's technical and economic features, but there are considerable gaps in understanding its confluence with social justice, human rights, and governance in SADC situations. This study fills these gaps by exploring the application of EPR as a mechanism to advance waste management systems that are both just and aligned with human rights principles within the regional context.

## **Methodology**

This study uses a qualitative research approach to investigate how SADC nations' Extended Producer Responsibility (EPR) frameworks interface with concepts of social justice and human rights in the context of sustainable waste management. A qualitative method is ideal because it provides a thorough understanding of complex policy contexts, stakeholder viewpoints, and contextual issues (Creswell & Poth, 2018). The research is built around three main questions: (1) How do SADC's present EPR policies align with social justice and human rights principles? (2) What barriers limit the proper implementation of EPR in

these regions? (3) How can EPR help to develop inclusive and sustainable waste management systems?

The research employed three primary methodologies for data collection. First, document analysis is performed on national waste management strategies, EPR regulations, and regional policy frameworks in selected SADC countries, with a focus on South Africa, Namibia, and Botswana, which have more advanced EPR initiatives (Godfrey & Oelofse, 2017; Republic of South Africa, 2020). Second, semi-structured interviews are conducted with important stakeholders such as government officials, representatives from producer responsibility organisations (PROs), municipal trash managers, representatives from the informal sector, and environmental justice activists. This method captures multiple viewpoints on how EPR policies are formed and perceived in practice (Bryman, 2016).

Third, case studies of EPR projects in South Africa's packaging and electrical waste industries shed light on implementation obstacles and prospects for promoting social inclusion (Godfrey, Muswema, & Mamafa, 2016). Data from these sources are triangulated to improve validity and facilitate comparisons across national settings (Creswell & Poth, 2018).

Data analysis is done using thematic coding, which is driven by the theoretical frameworks of environmental justice, HRBA, and sustainability transitions theory. This permits the detection of repeating trends related to governance gaps, socioeconomic injustices, and systemic hurdles to successful EPR (Geels, 2011; Bullard, 2000; Knox, 2018). Ethical approval was obtained, and all interview subjects gave informed consent.

Overall, this technique ensures a thorough, context-sensitive examination of how EPR frameworks might be reimaged to promote equitable, rights-based waste management systems in SADC countries.

## **Findings and Discussion**

The findings of this study confirm that, while Extended Producer Responsibility (EPR) has significant potential to improve waste management in SADC countries, its current implementation is hampered by governance flaws, economic disparities, and the exclusion of key stakeholders, particularly informal waste collectors and marginalized communities (Godfrey and Oelofse, 2017; Schroeder, 2019). Although countries such as South Africa have implemented formal EPR schemes, many of these frameworks lack effective enforcement, consistent

stakeholder participation, and alignment with human rights and social justice principles (Republic of South Africa, 2020; Knox, 2018). International case studies furnish valuable insights regarding potential strategies for overcoming these structural impediments. Strong legal frameworks, clear compliance systems, and long-term public-private cooperation have all contributed to EPR success in Europe. In Asia, the examples of Japan and South Korea demonstrate how strong government leadership, financial incentives for producers, and public participation may spur innovation and circular economy practices (Lifset et al., 2013; Sakai et al., 2011). In contrast, experiences in Latin America and Africa, which are more comparable to the SADC context, show that unless EPR schemes are explicitly designed to integrate informal waste sectors and address social inequalities, they risk exacerbating existing disparities. The experiences of Ghana and Nigeria demonstrate that EPR programmes in developing countries frequently encounter chronic obstacles like institutional fragmentation, insufficient enforcement, and limited producer engagement (Ezeudu, 2024).

Finally, global and regional experiences indicate that for SADC countries to fully realise the potential of EPR not only in waste reduction but also in social equity and sustainable development, a deliberate focus on inclusive governance, capacity building, and long-term policy coherence is required (Schroeder, 2019; UNEP, 2020; OECD, 2016). This necessitates national leadership, regional cooperation, and targeted assistance from international partners.

The integration of these global lessons emphasises that in the SADC area, moving toward effective, equitable EPR requires systemic changes led by environmental justice and human rights-based approaches, not just technical reforms. Governance systems must be enhanced, enforcement must be more consistent, and informal sector workers must actively participate as legitimate partners in EPR schemes (Godfrey, Muswema, & Mamafa, 2016; Knox, 2018). Additionally, a concerted effort is required to enhance public awareness and increase producer incentives in order to foster both sustainable product design and more effective waste management methods (Geels, 2011; Lifset et al., 2013).

The study's findings show that, while some SADC nations, particularly South Africa, have made headway in formalising EPR frameworks, implementation across the region is variable and frequently fails to comply with principles of social justice and human rights. The 2020 Packaging EPR Regulations in South Africa are a step forward in mandating producer accountability (Republic of South Africa, 2020); however, enforcement gaps, limited coordination between the public and

private sectors, and a lack of stakeholder inclusivity remain (Godfrey & Oelofse, 2017). According to stakeholder interviews, informal waste collectors, who provide essential services in low-income and underserved areas, are largely marginalised in formal EPR schemes, with little institutional support, legal recognition, or protection of their rights (Schroeder, 2019; Godfrey, Muswema, & Mamafa, 2016).

The empirical data analysis revealed a recurrent thematic pattern: the unequal distribution of environmental risks and benefits, a finding which served to validate key tenets of Environmental Justice Theory (Bullard, 2000). Communities in peri-urban and informal settlements are more vulnerable to contamination from illegal dumping and uncollected waste, with few outlets for participating in policy processes or holding responsibility bearers accountable (Knox, 2018). EPR policies in SADC countries rarely consider the perspectives or demands of these vulnerable groups, raising issues regarding environmental equality and human rights compliance (Schroeder, 2019). While producer responsibility organisations (PROs) in South Africa have developed some recycling partnerships, they are centred in rich urban areas, leaving disadvantaged regions out (Godfrey et al., 2016).

The impediments to the successful implementation of EPR were determined to be systemic in nature. The study discovered that weak regulatory enforcement, fragmented institutional mandates, and low financial resources impede governments' ability to oversee compliance (Scott, 2001). Furthermore, the business sector's involvement in EPR is frequently motivated by short-term compliance rather than long-term commitment to sustainable transitions (Geels, 2011). This shows that without deeper governance reforms and incentives for inclusive involvement, EPR may exacerbate existing inequities rather than promoting transformative change.

However, the studies also highlight opportunities. Emerging multi-stakeholder platforms where government agencies, PROs, and informal sector representatives collaborate have the potential to advance more inclusive EPR models (Godfrey et al., 2016). Aligning EPR with the Human Rights-Based Approach (Knox, 2018) can result in policy frameworks that expressly encourage social inclusion, fair labour practices, and public involvement. Drawing on Sustainability Transitions Theory (Geels, 2011), the paper contends that systemic transformation would necessitate long-term policy coherence, capacity building, and public-private partnerships that incorporate human rights and justice into the heart of EPR policy development.

In summary, while EPR presents significant opportunity for sustainable waste management in the SADC region, attaining its full potential would require resolving social justice inadequacies, enhancing governance, and encouraging inclusive stakeholder involvement.

## Conclusion

The purpose of this study was to look at how SADC countries' Extended Producer Responsibility (EPR) regulations match with social justice, human rights, and sustainability concepts. The findings reveal that, while there is significant momentum for EPR, particularly in South Africa, present frameworks across the continent are fragmented and frequently fail to address the profound socioeconomic inequalities ingrained in waste management systems (Godfrey and Oelofse, 2017; Knox, 2018). Informal garbage collectors are still mainly excluded from formal EPR projects, and underprivileged populations continue to suffer disproportionate environmental harm due to insufficient waste services (Schroeder, 2019).

Comparative experiences from Europe, Asia, Latin America, and Africa provide valuable lessons. In high-income countries, EPR mechanisms have successfully catalysed both recycling innovation and circular economy transitions via stringent regulatory enforcement, targeted producer incentives, and comprehensive stakeholder engagement (OECD, 2016; European Commission, 2018; Lifset et al., 2013). Middle- and low-income environments, such as Latin America and portions of Africa, require policies that expressly promote social justice and human rights to prevent EPR from reinforcing existing disparities (Schroeder, 2019; UNEP, 2020).

For SADC countries, technical and legislative improvements alone will not suffice. Governance transformation is imperative, necessitating several key reforms: the expansion of institutional capacity, the assurance of participatory policymaking processes, the formal incorporation of informal sector actors as essential stakeholders, and the strategic alignment of EPR frameworks with broader human rights and sustainable development goals (Godfrey, Muswema, & Mamafa, 2016; Knox, 2018). Furthermore, SADC nations should expand regional collaboration to align EPR standards and exchange best practices, as well as engage international partners for technical and financial assistance.

In summary, this study advances knowledge by conceptualising EPR in the SADC area not just as an environmental instrument but also as a potential driver of inclusive and rights-based sustainable development.

Future EPR policies must be planned with this larger lens in mind if they are to provide both environmental benefits and social justice throughout the region.

The purpose of this study was to investigate how SADC nations' Extended Producer Responsibility (EPR) policies adhere to concepts of social justice, human rights, and sustainable development. The findings show that, while EPR is gaining popularity in the area, particularly in South Africa, implementation is inconsistent and frequently fails to address the systematic inequities ingrained in waste management systems (Godfrey and Oelofse, 2017; van Biljon, 2024). Drawing on environmental justice theory and the human rights-based approach, the study emphasises that marginalised populations continue to bear the brunt of inadequate waste management, with restricted access to safe and dignified waste services (Bullard, 2000; Knox, 2018).

Furthermore, EPR programmes are usually structured from the top down, excluding informal waste collectors and community perspectives, raising questions about procedural and distributive justice (Schroeder, 2019).

At the same time, the study highlights prospects for more inclusive EPR frameworks. Emerging collaborations among government, producers, and informal sector actors indicate that including human rights and justice into policy design is both feasible and necessary (Godfrey, Muswema, & Mamafa, 2016). The Sustainability Transitions Theory emphasises that systemic change will necessitate long-term governance reforms, capacity building, and strong leadership. Overall, the study adds to current knowledge by expanding the EPR debate beyond technical efficiency and emphasising its role in alleviating socioeconomic disparities and promoting rights-based sustainable development in the SADC area.

## **Recommendations**

Based on the study's empirical findings, a series of significant recommendations are advanced to enhance the efficacy and equity of Extended Producer Responsibility (EPR) frameworks across SADC nations. First, governments should ensure that EPR policies explicitly incorporate social justice and human rights principles by involving marginalised communities, particularly informal waste collectors and underserved residents, in the design, implementation, and monitoring of waste management strategies (Schroeder, 2019). Participatory policy forums and social conversation platforms can improve procedural justice

while also empowering affected people (Godfrey, Muswema, & Mamafa, 2016).

Second, regulatory bodies must increase enforcement capacity to close implementation gaps. This necessitates better institutional coordination among government departments, enough financing for monitoring efforts, and continuous enforcement of penalties for noncompliance (Scott, 2001). Public-private partnerships can be strengthened to encourage producer responsibility organisations (PROs) to work with informal waste collectors and contribute to local socioeconomic development (Godfrey & Oelofse, 2017).

Third, EPR policies should take a life-cycle perspective to support sustainability transitions, such as product redesign, eco-innovation, and circular economy practices (Geels, 2011; OECD, 2016). Financial mechanisms such as eco-modulated fees, can serve to incentivise manufacturers who develop environmentally benign products while simultaneously funding initiatives that advance fair waste management practices (Lifset et al., 2013).

Finally, SADC member states should expand regional collaboration to unify EPR rules, share best practices, and increase regional capacity for inclusive waste governance. Aligning EPR with human rights principles and sustainability goals would help to ensure that waste management in SADC contributes not only to environmental protection but also to broader socioeconomic development.

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