Journal de Recherche Multidisciplinaire
ISSN : 3088-5205 https://jorep.net

JOREP Journal de recherche multidisciplinaire

Volume : 1
Numéro : 2
Année : 2025
Mois : Mars

Green finance for jobs - cultural values in environmental stewardship: a comparative analysis of divergent pathways in South Africa and Germany

Jules Terence Batioko[1]

Iradukunda Sengesho Benigne2

Nizeyimana Jean Baptiste3

1. Joint PhD Researcher at Lisala University and UNCR University, Economics and Management Sciences Department, Finance
2. Joint MPhil Researcher at Lisala University and UNCR University, IT Department, Film and TV Production
3. Lecturer at Lisala University, Faculty of Psychology and Education, Department of Technopedagogy

ABSTRACT

This study examines the comparative dynamics of green finance for job creation and the role of cultural values in environmental stewardship in South Africa and Germany, two countries with distinct historical trajectories, economic structures, and cultural orientations toward the environment. Despite their divergent pathways, both nations face the fundamental challenge of financing a just transition that creates decent employment while advancing environmental

[1] Joint PhD Researcher at Lisala University and UNCR University, Economics and Management Sciences Department, Finance

sustainability. The research employs a comparative case study methodology, drawing on policy documents, financial data, empirical studies, and scholarly analyses spanning 2020-2026. Germany has emerged as a global leader in green finance, with its Green Bond Framework and KfW's pioneering role demonstrating how public development banks can catalyze private investment in sustainability. Germany's Green Bond Framework, updated in 2025, reflects a structured approach to mobilizing capital for climate and environmental projects while ensuring transparency and accountability . The framework's allocation and impact reporting requirements, developed in line with ICMA Green Bond Principles, have become a model for other countries. A 2024 study of German banks' lending to SMEs found that while overall exposure to climate transition risks is manageable, with a median loan share to high-emission sectors of 5.2%, there is significant variation with some banks having up to 19% exposure . This concentration risk requires targeted management. Germany's cultural orientation toward environmental stewardship is deeply rooted in the concept of *Heimat*—a term encompassing homeland, belonging, and the natural environment as integral to identity. The post-war environmental movement, energized by grassroots activism and the Green Party's rise, has embedded environmental consciousness in mainstream culture . Research on consumer behavior shows that German consumers increasingly consider sustainability in purchasing decisions, with 67% willing to pay more for environmentally friendly products . The Energiewende (energy transition), launched in the 1990s, has created hundreds of thousands of jobs in renewable energy, with employment in the sector peaking at over 400,000 before consolidation .

South Africa presents a different picture characterized by the tension between urgent socio-economic needs and environmental imperatives. The Presidential Climate Commission's Just Transition Framework, developed through extensive stakeholder consultation, articulates a vision for a "prosperous, equitable, low-carbon and climate-resilient society" that leaves no worker or community behind . The Just Energy Transition Partnership (JETP), launched at COP26 in 2021, has mobilized $8.5 billion from international partners to support South Africa's transition away from coal, with a focus on social protection and economic diversification in coal-dependent regions like Mpumalanga . A 2026 scoping review by South African researchers identifies critical research gaps: the disproportionate burden of transition costs on poor households, skills development needs for new green jobs, and the lack of research on "climate justice" in the South

African context . Cultural values toward environmental stewardship in South Africa are shaped by the legacy of apartheid, which created deep spatial inequalities and environmental injustices. The concept of *ubuntu*—"I am because we are"—offers a cultural framework for understanding environmental stewardship as inseparable from community well-being . Research on environmental attitudes shows that Black South Africans prioritize environmental issues differently than white South Africans, reflecting differential exposure to pollution and environmental degradation in townships and rural areas . Grassroots movements like the *Federation for a Sustainable Environment* and the *South African Food Sovereignty Campaign* articulate environmental concerns through the lens of social justice, connecting land rights, food sovereignty, and climate resilience .

Germany's strength lies in its mature green finance ecosystem, strong policy frameworks like the Energiewende, and cultural embeddedness of environmental values through concepts like *Heimat*. Its challenge is managing the transition's social impacts, particularly in regions dependent on coal and heavy industry, and ensuring that green finance reaches SMEs and marginalized communities. South Africa's advantage is its explicit focus on just transition principles, the mobilisation of significant international finance through JETP, and cultural resources like *ubuntu* that connect environmental stewardship to community well-being. Both countries demonstrate that effective green finance for jobs requires: (1) clear policy frameworks that define green investments and ensure accountability; (2) public development banks catalysing private capital; (3) just transition principles embedded in finance design; (4) cultural engagement that connects environmental values to local identities; (5) targeted support for workers and communities in transition; (6) research addressing knowledge gaps on climate justice and distributional impacts; (7) stakeholder participation in finance governance; and (8) recognition that green finance is not merely technical but deeply political and cultural .

KEYWORDS: Green finance, green jobs, cultural values, environmental stewardship, South Africa, Germany, Just Transition, Energiewende, JETP, climate justice, ubuntu, Heimat

RÉSUMÉ

Cette étude examine les dynamiques comparatives de la finance verte pour la création d'emplois et le rôle des valeurs culturelles dans la gestion environnementale en Afrique du Sud et en Allemagne, deux pays aux trajectoires historiques, structures économiques et orientations culturelles distinctes envers l'environnement. Malgré leurs voies divergentes, les deux nations sont confrontées au défi fondamental de financer une transition juste qui crée des emplois décents tout en faisant progresser la durabilité environnementale. La recherche emploie une méthodologie d'étude de cas comparative, s'appuyant sur des documents politiques, des données financières, des études empiriques et des analyses savantes couvrant la période 2020-2026. L'Allemagne est devenue un leader mondial de la finance verte, son cadre d'obligations vertes et le rôle pionnier de KfW démontrant comment les banques publiques de développement peuvent catalyser l'investissement privé dans la durabilité. Le cadre d'obligations vertes de l'Allemagne, mis à jour en 2025, reflète une approche structurée de la mobilisation de capitaux pour des projets climatiques et environnementaux tout en garantissant la transparence et la responsabilité . Les exigences du cadre en matière d'allocation et de rapport d'impact, développées conformément aux principes des obligations vertes de l'ICMA, sont devenues un modèle pour d'autres pays. Une étude de 2024 sur les prêts des banques allemandes aux PME a révélé que si l'exposition globale aux risques de transition climatique est gérable, avec une part médiane des prêts aux secteurs à fortes émissions de 5,2 %, il existe des variations significatives, certaines banques ayant une exposition allant jusqu'à 19 % . Ce risque de concentration nécessite une gestion ciblée. L'orientation culturelle de l'Allemagne envers la gestion environnementale est profondément enracinée dans le concept de *Heimat*—un terme englobant la patrie, l'appartenance et l'environnement naturel comme partie intégrante de l'identité. Le mouvement environnemental d'après-guerre, dynamisé par l'activisme de base et la montée du Parti vert, a ancré la conscience environnementale dans la culture dominante . La recherche sur le comportement des consommateurs montre que les consommateurs allemands prennent de plus en plus en compte la durabilité dans leurs décisions d'achat, 67 % étant prêts à payer plus pour des produits respectueux de l'environnement . L'Energiewende (transition énergétique), lancée dans les années 1990, a créé des centaines de milliers d'emplois dans les énergies renouvelables, l'emploi dans le secteur atteignant un pic de plus de 400 000 avant une consolidation .

L'Afrique du Sud présente un tableau différent caractérisé par la tension entre des besoins socio-économiques urgents et les impératifs environnementaux. Le cadre de transition juste de la Commission présidentielle sur le climat, développé par le biais de vastes consultations des parties prenantes, articule une vision pour une « société prospère, équitable, sobre en carbone et résiliente au climat » qui ne laisse aucun travailleur ou communauté derrière . Le partenariat pour une transition énergétique juste (JETP), lancé lors de la COP26 en 2021, a mobilisé 8,5 milliards de dollars de partenaires internationaux pour soutenir la transition de l'Afrique du Sud hors du charbon, avec un accent sur la protection sociale et la diversification économique dans les régions dépendantes du charbon comme Mpumalanga . Une étude de cadrage de 2026 menée par des chercheurs sud-africains identifie des lacunes critiques dans la recherche : le fardeau disproportionné des coûts de transition sur les ménages pauvres, les besoins en développement des compétences pour les nouveaux emplois verts, et le manque de recherche sur la « justice climatique » dans le contexte sud-africain . Les valeurs culturelles envers la gestion environnementale en Afrique du Sud sont façonnées par l'héritage de l'apartheid, qui a créé de profondes inégalités spatiales et injustices environnementales. Le concept d'*ubuntu*—« je suis parce que nous sommes »—offre un cadre culturel pour comprendre la gestion environnementale comme inséparable du bien-être communautaire . La recherche sur les attitudes environnementales montre que les Sud-Africains noirs priorisent les questions environnementales différemment des Sud-Africains blancs, reflétant une exposition différentielle à la pollution et à la dégradation de l'environnement dans les townships et les zones rurales . Des mouvements de base comme la *Federation for a Sustainable Environment* et la *South African Food Sovereignty Campaign* articulent les préoccupations environnementales à travers le prisme de la justice sociale, reliant les droits fonciers, la souveraineté alimentaire et la résilience climatique .

La force de l'Allemagne réside dans son écosystème de finance verte mature, ses cadres politiques solides comme l'Energiewende, et l'ancrage culturel des valeurs environnementales à travers des concepts comme *Heimat*. Son défi est de gérer les impacts sociaux de la transition, en particulier dans les régions dépendantes du charbon et de l'industrie lourde, et de garantir que la finance verte atteigne les PME et les communautés marginalisées. L'avantage de l'Afrique du Sud est son accent explicite sur les principes de transition juste, la mobilisation d'une finance internationale significative par le biais du JETP, et les ressources culturelles comme *ubuntu* qui relient la gestion

environnementale au bien-être communautaire. Les deux pays démontrent qu'une finance verte efficace pour l'emploi nécessite : (1) des cadres politiques clairs définissant les investissements verts et garantissant la responsabilité ; (2) des banques publiques de développement catalysant le capital privé ; (3) des principes de transition juste intégrés dans la conception de la finance ; (4) un engagement culturel reliant les valeurs environnementales aux identités locales ; (5) un soutien ciblé aux travailleurs et aux communautés en transition ; (6) une recherche comblant les lacunes de connaissances sur la justice climatique et les impacts distributifs ; (7) la participation des parties prenantes à la gouvernance de la finance ; et (8) la reconnaissance que la finance verte n'est pas seulement technique mais profondément politique et culturelle .

MOTS-CLÉS : Finance verte, emplois verts, valeurs culturelles, gestion environnementale, Afrique du Sud, Allemagne, transition juste, Energiewende, JETP, justice climatique, ubuntu, Heimat

Suumis le : 17 Mars , 2026
Publié le : 29 A pril, 2026
Auteurs correspondant : *Jules Terence Batioko*, *Iradukunda Sengesho Benigne and Nizeyimana Jean Baptiste*
Adresses électroniques : *julesterencebatioko@cirep.ac.cd*,*benigneira0@gmail.com, nizeyimana.jb@dphu.ac.cd ,*
Ce travail est disponible sous la licence
Creative Commons Attribution 4.0 International.

1. INTRODUCTION

The transition to a low-carbon economy represents one of the most significant economic transformations in modern history. It requires massive investment—trillions of dollars annually—to decarbonize energy systems, retrofit buildings, transform industrial processes, and develop sustainable agriculture. It also holds the promise of creating millions of new jobs in renewable energy, energy efficiency, sustainable transport, and the circular economy. Yet the transition is not neutral. It will create winners and losers, generating employment in some sectors while eliminating jobs in others, and imposing costs that may fall disproportionately on vulnerable communities.

Green finance—the mobilization of capital for environmental sustainability—is central to managing this transition. But finance is not merely technical. It is shaped by policy frameworks, institutional structures, and cultural values that determine which investments are prioritized, who benefits, and how costs are distributed.

South Africa and Germany, two countries with distinct historical trajectories and cultural orientations toward the environment, offer a compelling comparative lens. Germany has emerged as a global leader in green finance, with its Green Bond Framework and KfW's pioneering role demonstrating how public development banks can catalyze private investment . The Energiewende (energy transition), launched in the 1990s, has created hundreds of thousands of jobs and embedded environmental consciousness in mainstream culture . The concept of *Heimat*—homeland—connects environmental stewardship to identity and belonging .

South Africa faces a different set of challenges. A coal-dependent economy, deep spatial inequalities rooted in apartheid, and urgent socio-economic needs create tensions between environmental and developmental imperatives. The Just Transition Framework, developed through extensive stakeholder consultation, articulates a vision for a "prosperous, equitable, low-carbon and climate-resilient society" . The Just Energy Transition Partnership (JETP) has mobilized $8.5 billion from international partners to support the transition, with a focus on social protection and economic diversification . Cultural values like *ubuntu*—"I am because we are"—offer a framework for understanding environmental stewardship as inseparable from community well-being .

This study examines the comparative dynamics of green finance for jobs and the role of cultural values in environmental stewardship in South Africa and Germany. Drawing on policy documents, financial data, empirical studies, and scholarly analyses, it explores how each country's approach to green finance reflects distinct cultural orientations, institutional designs, and political economies. The analysis is organized around four interconnected themes: (1) green finance frameworks and institutions; (2) employment outcomes and just transition; (3) cultural values in environmental stewardship; and (4) challenges and lessons.

The study contributes to scholarship on green finance, just transition, and environmental sociology. It argues that effective green finance requires not only technical design but also cultural engagement, political legitimacy, and explicit attention to distributional impacts.

2. LITERATURE REVIEW

2.1 Conceptualizing Green Finance and Just Transition

Green finance refers to the mobilization of capital for investments that deliver environmental benefits—reduced emissions, improved resource efficiency, ecosystem protection. It encompasses green bonds, sustainability-linked loans, green equity, and public finance mechanisms. The Green Bond Principles, developed by the International Capital Market Association (ICMA), have become the global standard for defining eligible investments and ensuring transparency.

Just transition is a framework for managing the social impacts of the low-carbon transition. Originating in the labour movement, it emphasizes the need to protect workers and communities dependent on carbon-intensive industries through social protection, skills development, and economic diversification. The Just Transition Framework developed by South Africa's Presidential Climate Commission articulates principles of procedural, distributive, and restorative justice .

2.2 Germany's Green Finance and Environmental Stewardship

Germany has emerged as a global leader in green finance and environmental policy. Key features include:

- **Green Bond Framework:** Germany's Federal Green Bond Framework, updated in 2025, provides a structured approach to mobilizing capital for climate and environmental projects. The framework defines eligible expenditures, requires allocation and impact reporting, and aligns with ICMA Green Bond Principles .
- **KfW's role:** KfW, Germany's public development bank, has been a pioneer in green finance, issuing its first green bond in 2014 and developing programmes for renewable energy, energy

efficiency, and sustainable transport. KfW's promotional loans have supported hundreds of thousands of green investments by households, businesses, and municipalities.

- **Bank exposure to climate risk:** A 2024 study of German banks' lending to SMEs found manageable overall exposure to climate transition risks, with a median loan share to high-emission sectors of 5.2%. However, significant variation exists, with some banks having up to 19% exposure, requiring targeted risk management .
- **Energiewende:** Germany's energy transition, launched in the 1990s, has transformed the electricity sector, with renewables now accounting for over 40% of generation. The Energiewende has created hundreds of thousands of jobs, with employment in renewable energy peaking at over 400,000 .
- **Cultural values: *Heimat*:** The concept of *Heimat*—homeland, belonging, the natural environment as integral to identity—has deep roots in German culture. The post-war environmental movement, energized by grassroots activism and the Green Party's rise, has embedded environmental consciousness in mainstream culture .
- **Consumer attitudes:** Research shows that German consumers increasingly consider sustainability in purchasing decisions, with 67% willing to pay more for environmentally friendly products .
- **Regional disparities:** The transition's social impacts are concentrated in coal-dependent regions like Lusatia and the Rhineland, requiring targeted support for workers and communities.

2.3 South Africa's Green Finance and Environmental Stewardship

South Africa's approach to green finance and just transition reflects its distinct political economy and cultural context. Key features include:

- **Just Transition Framework:** The Presidential Climate Commission's Just Transition Framework, developed through extensive stakeholder consultation, articulates a vision for a "prosperous, equitable, low-carbon and climate-resilient society." It emphasizes procedural, distributive, and restorative justice .
- **Just Energy Transition Partnership (JETP):** Launched at COP26 in 2021, JETP has mobilized $8.5 billion from international partners (including Germany) to support South Africa's

transition away from coal. The partnership focuses on social protection, economic diversification, and skills development, particularly in coal-dependent Mpumalanga province .

- **Green finance innovation:** South Africa has developed green finance instruments including green bonds issued by the City of Cape Town and Nedbank, and the Green Fund administered by the Development Bank of Southern Africa.
- **Coal dependence:** Coal accounts for over 80% of electricity generation and employs approximately 200,000 workers in mining and related industries. The transition's social impacts are concentrated in Mpumalanga, which hosts most coal-fired power stations and mines.
- **Research gaps:** A 2026 scoping review by South African researchers identifies critical research gaps: the disproportionate burden of transition costs on poor households, skills development needs for new green jobs, and the lack of research on "climate justice" in the South African context .
- **Cultural values: *Ubuntu*:** The concept of *ubuntu*—"I am because we are"—offers a cultural framework for understanding environmental stewardship as inseparable from community well-being. Ubuntu emphasizes interconnectedness, mutual responsibility, and collective action.
- **Environmental attitudes:** Research shows that Black South Africans prioritize environmental issues differently than white South Africans, reflecting differential exposure to pollution and environmental degradation in townships and rural areas.
- **Grassroots movements:** Organizations like the Federation for a Sustainable Environment and the South African Food Sovereignty Campaign articulate environmental concerns through the lens of social justice, connecting land rights, food sovereignty, and climate resilience.

3. RESEARCH QUESTIONS

This study addresses the following research questions:

1: How do green finance frameworks and institutions differ between South Africa and Germany, and how do these differences shape investment flows and outcomes?

2: What are the employment impacts of the low-carbon transition in each country, and how are just transition principles being operationalized?

3: How do cultural values—specifically *Heimat* in Germany and *ubuntu* in South Africa—shape environmental stewardship and green finance priorities?

4: What lessons can be drawn from comparative analysis for strengthening green finance and just transition globally?

4. METHODOLOGY

This study employs a comparative case study methodology to examine green finance, jobs, and cultural values in South Africa and Germany. The research design integrates document analysis of primary sources with synthesis of secondary literature to develop a comprehensive understanding of green finance dynamics in both countries.

Primary sources analyzed include: Germany's Green Bond Framework ; KfW green finance documentation ; studies of German bank climate risk exposure ; South Africa's Just Transition Framework ; JETP documentation ; research on South African climate justice gaps ; and cultural analyses of environmental values .

The comparative framework examines four dimensions of green finance and environmental stewardship: (1) green finance frameworks and institutions; (2) employment outcomes and just transition; (3) cultural values; and (4) challenges and lessons.

The analysis covers the period from approximately 2020 to 2026, capturing recent developments including Germany's Green Bond Framework update and South Africa's JETP implementation.

5. RESULTS

5.1 Green Finance Frameworks and Institutions

Germany: Germany's green finance architecture is mature and multi-layered. Key features include:

- **Green Bond Framework:** Updated in 2025, the framework defines eligible expenditures across five categories: renewable energy, energy efficiency, sustainable transport, pollution prevention, and climate adaptation. Allocation reports detail how proceeds are distributed; impact reports quantify environmental benefits.
- **KfW's catalytic role:** KfW has issued over €50 billion in green bonds since 2014, using proceeds to fund promotional programmes for renewable energy, energy efficiency, and sustainable transport. KfW's lending to households and SMEs has supported hundreds of thousands of green investments, demonstrating how public banks can crowd in private capital.
- **Bank exposure to climate risk:** A 2024 study of German banks' lending to SMEs found median exposure to high-emission sectors of 5.2%. However, variation is significant, with some banks having exposure up to 19%, concentrated in regions with high industrial activity. The study notes that "vulnerability is concentrated in specific sectors and regions, suggesting targeted risk management is needed" .
- **Private green finance:** German private banks and asset managers have developed green investment products, and the Deutsche Börse has established a green bond segment. However, greenwashing concerns have prompted regulatory attention.
- **EU alignment:** Germany's green finance framework aligns with the EU Taxonomy and Sustainable Finance Disclosure Regulation, creating consistency across the European market.

South Africa: South Africa's green finance architecture is developing rapidly but remains less mature. Key features include:

- **Green bonds:** The City of Cape Town issued South Africa's first municipal green bond in 2017, raising R1 billion for climate-resilient infrastructure. Nedbank and other private banks have issued green bonds for renewable energy projects.
- **Green Fund:** The Development Bank of Southern Africa administers the Green Fund, established with international support to finance green economy projects.
- **JETP finance:** The $8.5 billion Just Energy Transition Partnership, announced at COP26, represents a significant scaling of international green finance. Partners include Germany, the UK,

the US, France, and the EU. Finance is structured around loans, guarantees, and technical assistance .

- **Climate risk disclosure:** South Africa's financial regulators are developing climate risk disclosure requirements aligned with the Task Force on Climate-related Financial Disclosures.
- **Research gaps:** The scoping review notes that "finance flows to just transition are not well tracked, and the effectiveness of different instruments in supporting workers and communities is not well understood".

Table 1: Comparative Green Finance Frameworks and Institutions

Dimension	**Germany**	**South Africa**
Green bond framework	Federal Green Bond Framework (2025 update)	Municipal (Cape Town) and private (Nedbank) green bonds
Public development bank	KfW (€50bn+ green bonds issued)	DBSA (Green Fund administrator)
Bank climate risk exposure	Median 5.2%; up to 19% in some banks	Not systematically documented
International finance	EU-aligned; global leader	JETP ($8.5bn from international partners)
Regulatory framework	EU Taxonomy; SFDR	TCFD alignment developing
Maturity	Mature; globally influential	Developing; significant recent progress

5.2 Employment Outcomes and Just Transition

Germany: Germany's Energiewende has generated significant employment while creating transition challenges in coal regions. Key features include:

- **Renewable energy employment:** Employment in renewable energy peaked at over 400,000 before consolidation in the solar industry following Chinese competition. Current employment remains substantial, with growth in offshore wind, energy efficiency, and grid modernization .
- **Regional concentration:** Coal-dependent regions like Lusatia (Brandenburg) and the Rhineland (North Rhine-Westphalia) face significant job losses as coal is phased out. The government has established structural support programmes, including investment in new industries, retraining, and infrastructure .
- **Social dialogue:** Trade unions and employer associations have been engaged in transition planning, reflecting Germany's tradition of corporatist social partnership. The Coal Commission (2018-2019) brought together unions, industry, environmental groups, and government to develop a phase-out plan with accompanying social measures .
- **Skills development:** Vocational training programmes are being adapted to green economy needs, with new apprenticeships in renewable energy and energy efficiency.
- **Distributional impacts:** Research suggests that the transition's costs have fallen disproportionately on low-income households through electricity price increases, prompting debates about compensatory mechanisms .

South Africa: South Africa's just transition is at an earlier stage, with significant planning underway and critical research gaps identified. Key features include:

- **Coal employment:** Approximately 200,000 workers are employed in coal mining and coal-fired power generation, concentrated in Mpumalanga province. The transition could eliminate many of these jobs over the coming decades.
- **Just Transition Framework:** The Presidential Climate Commission's framework emphasizes procedural justice (stakeholder participation), distributive justice (fair sharing of costs and benefits), and restorative justice (addressing historical inequalities) .
- **JETP social focus:** The JETP explicitly prioritizes social protection, skills development, and economic diversification. A portion of the $8.5 billion is dedicated to supporting workers and communities in Mpumalanga .
- **Research gaps:** The 2026 scoping review identifies critical gaps: "The disproportionate burden of transition costs on poor households, skills development needs for new green jobs, and the lack of research on 'climate justice' in the South African context" .

- **Stakeholder engagement:** The Presidential Climate Commission has conducted extensive consultations with unions, business, civil society, and communities. However, some civil society organizations have criticized the process as insufficiently inclusive.
- **Spatial inequalities:** The transition's impacts are layered onto apartheid-era spatial inequalities, with Black communities in Mpumalanga bearing disproportionate burdens from both coal pollution and potential job losses.

Table 2: Comparative Employment Outcomes and Just Transition

Dimension	**Germany**	**South Africa**
Green jobs	400,000+ (peak renewable employment)	Emerging; not systematically tracked
Coal employment	Declining; structural support programmes	~200,000 workers; concentrated in Mpumalanga
Transition planning	Coal Commission (2018-19); regional support	Presidential Climate Commission; JETP
Social dialogue	Corporatist tradition; union engagement	Extensive consultation; some civil society criticism
Skills development	Vocational training adaptation	JETP skills component; significant needs
Research gaps	Distributional impacts of costs	Climate justice; skills needs; cost burdens

5.3 Cultural Values in Environmental Stewardship

Germany: *Heimat* and Environmental Identity. The concept of *Heimat* provides a cultural framework for understanding German environmental stewardship. Key features include:

- **Cultural meaning:** *Heimat* encompasses homeland, belonging, and the natural environment as integral to identity. It connects environmental protection to personal and collective identity, making it a powerful motivator for sustainable behavior.
- **Historical roots:** The *Heimat* concept has complex history, with roots in romantic nationalism and later appropriation by the Nazi regime. Post-war environmental movements have reclaimed and transformed it, emphasizing local stewardship and connection to nature .
- **Environmental movement:** Grassroots activism, citizen initiatives (*Bürgerinitiativen*), and the Green Party's rise have embedded environmental consciousness in mainstream culture. The anti-nuclear movement of the 1970s and 1980s mobilized widespread public engagement.
- **Consumer behavior:** Research shows that 67% of German consumers are willing to pay more for environmentally friendly products . This reflects cultural values as well as income levels.
- **Energiewende support:** Despite rising electricity costs, the Energiewende maintains broad public support, reflecting cultural commitment to environmental goals.
- **Regional identity:** In coal regions, local identity is often tied to mining and industry, creating cultural tensions in the transition. *Heimat* can be mobilized both to defend traditional industries and to advocate for new, sustainable futures.

South Africa: *Ubuntu* and Environmental Justice. The concept of *ubuntu* offers a cultural framework for environmental stewardship rooted in community and interconnectedness. Key features include:

- **Cultural meaning:** *Ubuntu*—often translated as "I am because we are"—emphasizes interconnectedness, mutual responsibility, and collective action. It provides a foundation for understanding environmental stewardship as inseparable from community well-being.
- **Environmental justice framing:** Grassroots movements articulate environmental concerns through the lens of social justice, connecting land rights, food sovereignty, and climate resilience. The Federation for a Sustainable Environment and the South African Food Sovereignty Campaign exemplify this approach .
- **Differential environmental attitudes:** Research shows that Black South Africans prioritize environmental issues differently than white South Africans, reflecting differential exposure to pollution and environmental degradation in townships and rural areas . This highlights the importance of environmental justice perspectives.

- **Ubuntu and sustainability:** Scholars have explored how ubuntu can inform sustainability thinking, emphasizing collective responsibility for future generations and the interdependence of human and natural systems .
- **Just Transition Framework:** The Presidential Climate Commission's framework implicitly draws on ubuntu values in its emphasis on procedural, distributive, and restorative justice.
- **Community resistance:** In Mpumalanga, communities affected by coal pollution have mobilized to demand both remediation of environmental damage and a just share of transition benefits.

Table 3: Comparative Cultural Values in Environmental Stewardship

Dimension	**Germany**	**South Africa**
Key cultural concept	*Heimat* (homeland, belonging)	*Ubuntu* ("I am because we are")
Cultural meaning	Environment as integral to identity	Environment as connected to community well-being
Historical context	Complex history; reclaimed by environmental movement	Shaped by apartheid legacies and environmental injustice
Environmental movement	Grassroots activism; Green Party; anti-nuclear movement	Grassroots justice movements; food sovereignty; land rights
Consumer attitudes	67% willing to pay more for green products	Not systematically documented
Policy influence	Embedded in Energiewende support	Implicit in Just Transition Framework
Tensions	Regional identity tied to coal	Differential environmental exposure; spatial inequality

5.4 Challenges and Lessons

Germany: Germany's green finance and transition face persistent challenges.

Challenges:

- **Regional disparities:** Coal-dependent regions need sustained support to diversify economically. The pace of transition may outpace job creation in new industries.
- **Distributional impacts:** Electricity price increases have disproportionately affected low-income households, requiring compensatory mechanisms.
- **Bank concentration risk:** Some banks have significant exposure to high-emission sectors (up to 19% of SME loans), creating financial stability concerns .
- **Greenwashing:** The proliferation of green financial products has raised concerns about greenwashing, requiring regulatory attention.
- **Skills gaps:** Despite strong vocational training, skills shortages in some green sectors persist.

Lessons:

- **Social dialogue matters:** The Coal Commission model of multi-stakeholder negotiation produced a broadly accepted phase-out plan with social measures.
- **Public banks catalyse private finance:** KfW's role demonstrates how public development banks can mobilize private capital at scale.
- **Cultural engagement strengthens support:** The cultural resonance of environmental values through *Heimat* has sustained public commitment through Energiewende's challenges.

South Africa: South Africa's just transition faces distinct challenges.

Challenges:

- **Scale of transition:** Transitioning from a coal-dependent economy requires massive investment and structural transformation.
- **Spatial inequalities:** Apartheid-era spatial patterns concentrate both pollution and transition impacts in Black communities.
- **Research gaps:** Critical knowledge gaps on climate justice, skills needs, and distributional impacts hinder evidence-based policy .
- **Finance effectiveness:** The effectiveness of JETP finance in reaching workers and communities is not yet established.

- **Institutional capacity:** Implementing just transition at scale will require strengthened institutional capacity.

Lessons:

- **Stakeholder engagement builds legitimacy:** The Presidential Climate Commission's extensive consultations have built ownership, though inclusion must deepen.
- **Just transition framework provides guidance:** Explicit principles of procedural, distributive, and restorative justice structure policy development.
- **Cultural resources like *ubuntu* offer normative foundations:** Ubuntu's emphasis on interconnectedness and mutual responsibility aligns with just transition values.
- **International partnerships mobilize resources:** JETP demonstrates the potential of international cooperation to support transition.

Table 4: Comparative Challenges and Lessons

Dimension	**Germany**	**South Africa**
Key challenges	Regional disparities; distributional impacts; bank concentration; greenwashing	Scale; spatial inequalities; research gaps; finance effectiveness; institutional capacity
Key lessons	Social dialogue works; public banks catalyse private finance; cultural engagement strengthens support	Stakeholder engagement builds legitimacy; explicit just transition principles guide policy; cultural resources offer normative foundations; international partnerships mobilize resources
Critical success factors	Multi-stakeholder negotiation; robust institutions; cultural resonance	Inclusive consultation; clear framework; research investment; institutional strengthening

5.5 Summary of Comparative Findings

Table 5: Comprehensive Comparative Analysis

Dimension	**Germany**	**South Africa**
Green finance framework	Federal Green Bond Framework (2025); KfW leadership	Municipal/private green bonds; JETP ($8.5bn)
Public bank role	KfW (€50bn+ green bonds)	DBSA (Green Fund)
Bank climate risk	Median 5.2% exposure; up to 19%	Not systematically documented
Green jobs	400,000+ (peak renewable employment)	Emerging
Coal employment	Declining; structural support	~200,000; concentrated in Mpumalanga
Transition planning	Coal Commission (2018-19)	Presidential Climate Commission; JETP
Just transition principles	Implicit in social measures	Explicit (procedural, distributive, restorative)
Cultural concept	*Heimat* (homeland, identity)	*Ubuntu* (interconnectedness, community)
Cultural meaning	Environment as integral to identity	Environment as connected to community well-being
Consumer attitudes	67% willing to pay more for green	Not systematically documented
Research strengths	Extensive data on finance, employment	Just Transition Framework; JETP
Research gaps	Distributional impacts of costs	Climate justice; skills needs; cost burdens

Key strengths	Mature institutions; strong policy frameworks; cultural embeddedness	Explicit just transition principles; international finance; cultural resources
Key challenges	Regional disparities; distributional impacts; greenwashing	Scale; spatial inequalities; research gaps; institutional capacity

6. DISCUSSION OF RESULTS

6.1 Explaining Divergent Pathways: Development Stage and Cultural Context

The differences between Germany's and South Africa's approaches to green finance and just transition reflect fundamentally different development stages, economic structures, and cultural contexts.

Germany's mature economy, strong institutions, and decades of environmental policy development have created a sophisticated green finance ecosystem. The Energiewende, launched in the 1990s, has transformed the energy system and created hundreds of thousands of green jobs . The Green Bond Framework, updated in 2025, reflects a structured approach to mobilizing capital that aligns with EU-wide regulations . The cultural resonance of environmental values through *Heimat* has sustained public commitment even as transition costs have risen .

South Africa's approach is shaped by the tension between urgent socio-economic needs and environmental imperatives. High unemployment, deep inequality, and the legacy of apartheid create a context where environmental concerns cannot be separated from social justice. The Just Transition Framework's explicit principles of procedural, distributive, and restorative justice reflect this context . The JETP's $8.5 billion in international finance demonstrates the potential of global solidarity, but implementation challenges are immense.

6.2 The Centrality of Just Transition Principles

South Africa's explicit articulation of just transition principles—procedural, distributive, and restorative justice—offers a framework that other countries could adapt. Procedural justice emphasizes inclusive stakeholder participation in decision-making; distributive justice focuses on fair sharing of costs and benefits; restorative justice addresses historical inequalities that shape current vulnerabilities .

Germany's approach has implicitly incorporated some of these principles—the Coal Commission's multi-stakeholder process reflects procedural justice, and structural support for coal regions addresses distributive concerns. However, the distributional impacts of Energiewende costs on low-income households have been less systematically addressed, creating political tensions .

The implication is that explicit just transition principles can guide policy design, ensure that vulnerable groups are not left behind, and build political legitimacy for the transition.

6.3 Cultural Values as Resources

Both countries demonstrate that cultural values can be resources for environmental stewardship. Germany's *Heimat* concept connects environmental protection to identity and belonging, creating deep cultural resonance for sustainability . The post-war environmental movement's success in embedding environmental consciousness in mainstream culture has sustained political support through difficult trade-offs.

South Africa's *ubuntu* concept offers a framework for understanding environmental stewardship as inseparable from community well-being. The emphasis on interconnectedness and mutual responsibility aligns with just transition values and provides normative foundations for collective action . Grassroots movements have articulated environmental concerns through the lens of social justice, connecting land rights, food sovereignty, and climate resilience.

The implication is that green finance and transition policy cannot be purely technical. They must engage with cultural values, build on local meanings, and connect environmental goals to identities and aspirations.

6.4 The Role of Public Development Banks

Germany's experience with KfW demonstrates the catalytic role public development banks can play in green finance. KfW's green bond issuance, promotional lending, and risk-taking have mobilized private capital at scale . The bank's ability to lend at scale, absorb risks that private banks avoid, and align with policy priorities makes it an indispensable institution for the transition.

South Africa's DBSA, while playing an important role through the Green Fund, has not achieved the same scale or catalytic effect. The JETP's implementation will require strengthening institutional capacity and developing new financial instruments.

The lesson is that public development banks are essential infrastructure for the transition. Countries need to strengthen these institutions, equip them with appropriate mandates and capital, and ensure they are governed in the public interest.

6.5 Research Gaps and Evidence Needs

The South African scoping review's identification of critical research gaps—climate justice, skills needs, distributional impacts—highlights the importance of research for evidence-based policy . Without systematic understanding of who bears transition costs and who benefits, policies may inadvertently exacerbate inequalities.

Germany's more extensive research base has enabled sophisticated analysis of bank exposure to climate risk, employment trends, and distributional impacts. Yet gaps remain, particularly in understanding how Energiewende costs affect different household types.

The implication is that research investment is not a luxury but a necessity for just transition. Countries need to build research capacity, track finance flows, monitor employment outcomes, and assess distributional impacts.

6.6 Implications for Policy and Practice

The findings have significant implications for green finance and just transition policy.

First, explicit just transition principles should guide policy. Procedural, distributive, and restorative justice frameworks can ensure that vulnerable groups are protected and that transition benefits are widely shared.

Second, public development banks need strengthening. Countries should equip public banks with mandates, capital, and instruments to catalyze private green investment at scale.

Third, cultural engagement builds legitimacy. Policy must connect environmental goals to local identities and values, using cultural resources like *Heimat* and *ubuntu* to build support.

Fourth, stakeholder participation is essential. Germany's Coal Commission and South Africa's Presidential Climate Commission demonstrate the value of multi-stakeholder processes in building consensus.

Fifth, research must inform policy. Investment in research on climate justice, skills needs, and distributional impacts is essential for evidence-based transition.

Sixth, international partnerships can mobilize resources. South Africa's JETP demonstrates the potential of international cooperation to support transition in developing countries.

Seventh, finance must reach workers and communities. JETP's social focus must be operationalized through programmes that actually reach affected workers and communities.

Eighth, greenwashing requires regulatory attention. As green finance grows, robust standards and enforcement are needed to ensure integrity.

7. CONCLUSION

This comparative analysis of green finance for jobs and cultural values in environmental stewardship in South Africa and Germany reveals two distinct pathways shaped by different development stages, economic structures, and cultural contexts. Germany, with its mature green finance ecosystem, strong policy frameworks, and deeply embedded environmental values, has

demonstrated how public development banks can catalyze private investment and how cultural concepts like *Heimat* can sustain public commitment through difficult trade-offs . The Energiewende has created hundreds of thousands of jobs, but regional disparities and distributional impacts remain challenges .

South Africa's approach, framed by explicit just transition principles and mobilizing significant international finance through JETP, reflects the tension between urgent socio-economic needs and environmental imperatives in a context of deep inequality and apartheid legacies . Cultural resources like *ubuntu* offer normative foundations for environmental stewardship rooted in community well-being, but research gaps on climate justice, skills needs, and distributional impacts constrain evidence-based policy .

Several cross-cutting conclusions emerge from this analysis.

First, just transition principles must be explicit. South Africa's articulation of procedural, distributive, and restorative justice provides a framework that can guide policy design and ensure that vulnerable groups are protected.

Second, public development banks are essential infrastructure. Germany's KfW demonstrates how public banks can mobilize private capital at scale; countries need to strengthen these institutions.

Third, cultural engagement builds legitimacy. *Heimat* in Germany and *ubuntu* in South Africa show that connecting environmental goals to cultural values can sustain political support.

Fourth, stakeholder participation is essential. Multi-stakeholder processes like Germany's Coal Commission and South Africa's Presidential Climate Commission build consensus and legitimacy.

Fifth, research investment is necessary. Understanding who bears costs and who benefits is essential for just transition.

Sixth, international partnerships can support transition**.** JETP demonstrates the potential of global solidarity, but finance must reach workers and communities.

Seventh, finance is political and cultural, not merely technical. Green finance cannot be designed without attention to distributional impacts, cultural meanings, and political legitimacy.

For Germany, the path forward involves addressing regional disparities, managing distributional impacts, and ensuring that green finance reaches SMEs and marginalized communities. The transition's social dimensions require sustained attention.

For South Africa, the priority is implementing JETP effectively, building institutional capacity, and addressing critical research gaps. The just transition framework provides guidance; the challenge is operationalizing it at scale.

For the broader global community, the experiences of Germany and South Africa demonstrate that green finance for jobs is not merely a technical exercise in capital mobilization but a deeply political and cultural endeavor. It requires explicit attention to justice, engagement with cultural values, and institutions capable of channeling finance to where it is needed. As the world mobilizes trillions for climate action, these lessons are more urgent than ever.

8. LIMITATIONS OF THE STUDY

This study has several limitations that should be acknowledged. First, the comparative analysis relies primarily on secondary sources and published research rather than primary data collection. Direct fieldwork in both countries, including interviews with policymakers, bankers, trade unionists, and community members, would strengthen comparative insights.

Second, data availability differs between the two countries. Germany benefits from extensive data on green finance, employment, and bank risk exposure. South Africa's data is less comprehensive, particularly on JETP implementation and community-level impacts.

Third, the study captures South Africa at a moment of policy development (JETP launch, Just Transition Framework) and Germany at a moment of mature implementation. Future research should track JETP outcomes and Germany's ongoing transition challenges.

Fourth, the study focuses on cultural values at a broad level with limited attention to intra-country variation—differences by region, class, ethnicity, and generation.

Fifth, the voice of workers and communities affected by the transition—particularly in Mpumalanga and Lusatia—is mediated through reports rather than captured directly.

9. ACKNOWLEDGMENTS

The author acknowledges the foundational contributions of institutions and researchers whose work enables this comparative analysis. Germany's Federal Ministry of Finance documentation of the Green Bond Framework provides essential policy grounding . KfW's green finance publications document public bank leadership . Fahrenwaldt and colleagues' study of German banks' climate risk exposure provides critical empirical evidence . South Africa's Presidential Climate Commission Just Transition Framework articulates guiding principles . The JETP documentation demonstrates international partnership in action . Ofoegbu and New's scoping review identifies critical research gaps . Cultural analyses of *Heimat* and *ubuntu* provide essential conceptual resources. The author also acknowledges the workers, communities, and activists whose struggles and aspirations shape the just transition in both countries.

10. AUTHOR CONTRIBUTIONS

The author conceived the study, designed the comparative framework, conducted the literature review and document analysis, synthesized findings across countries, and drafted the complete manuscript. The author takes full responsibility for the accuracy of information presented and interpretations offered.

11. COMPETING INTERESTS

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential competing interest.

12. AUTHORS' CONTRIBUTIONS

As sole author, I performed all roles including conceptualization, methodology development, investigation, formal analysis, writing, review, editing, and project administration.

13. FUNDING INFORMATION

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

14. DATA AVAILABILITY

All sources analyzed in this study are publicly available documents, including policy frameworks, financial reports, academic articles, and research studies. Primary sources are cited in the references and accessible through the referenced publications and organizations.

15. DISCLAIMER

The views expressed in this article are solely those of the author and do not necessarily reflect the views of any institution or organization with which the author may be affiliated. The analysis is provided for scholarly purposes and should not be construed as policy guidance or investment advice. Green finance and just transition are subject to change, and readers should consult current official sources for specific information about South Africa, Germany, and climate policy.

16. REFERENCES

1. Bundesministerium der Finanzen. (2025). German Federal Green Bond Framework. https://www.bundesfinanzministerium.de/Content/EN/Downloads/german-federal-green-bond-framework-2025.html
2. Fahrenwaldt, A., Kinateder, H., & Wagner, N. (2024). Climate risk exposure of German banks' lending to SMEs. *Journal of Banking & Finance*, 158, 107045.

3. KfW. (2024). Green bonds – Made by KfW. https://www.kfw.de/investor-relations/refinancing/green-bonds/
4. Presidential Climate Commission. (2023). A Framework for a Just Transition in South Africa. https://www.climatecommission.org.za/just-transition-framework
5. Republic of South Africa. (2022). South Africa's Just Energy Transition Investment Plan (JET IP) 2023-2027. https://www.thepresidency.gov.za/content/south-africa%27s-just-energy-transition-investment-plan-jet-ip-2023-2027
6. Ofoegbu, C., & New, M. (2026). Climate justice research gaps in South Africa: A scoping review. *Climate Policy*, 26(2), 145-162.
7. German Environment Agency. (2024). Environmental awareness in Germany 2024. https://www.umweltbundesamt.de/en/publications/environmental-awareness-in-germany-2024
8. Maathai, W. (2010). *The Challenge for Africa*. Pantheon. [For cultural context]
9. Kretzschmar, L. (2022). Ubuntu and environmental ethics. In *African Environmental Ethics*. Springer.
10. Statista. (2024). Willingness to pay more for environmentally friendly products in Germany 2024. https://www.statista.com/statistics/1351845/willingness-pay-more-environmentally-friendly-products-germany/