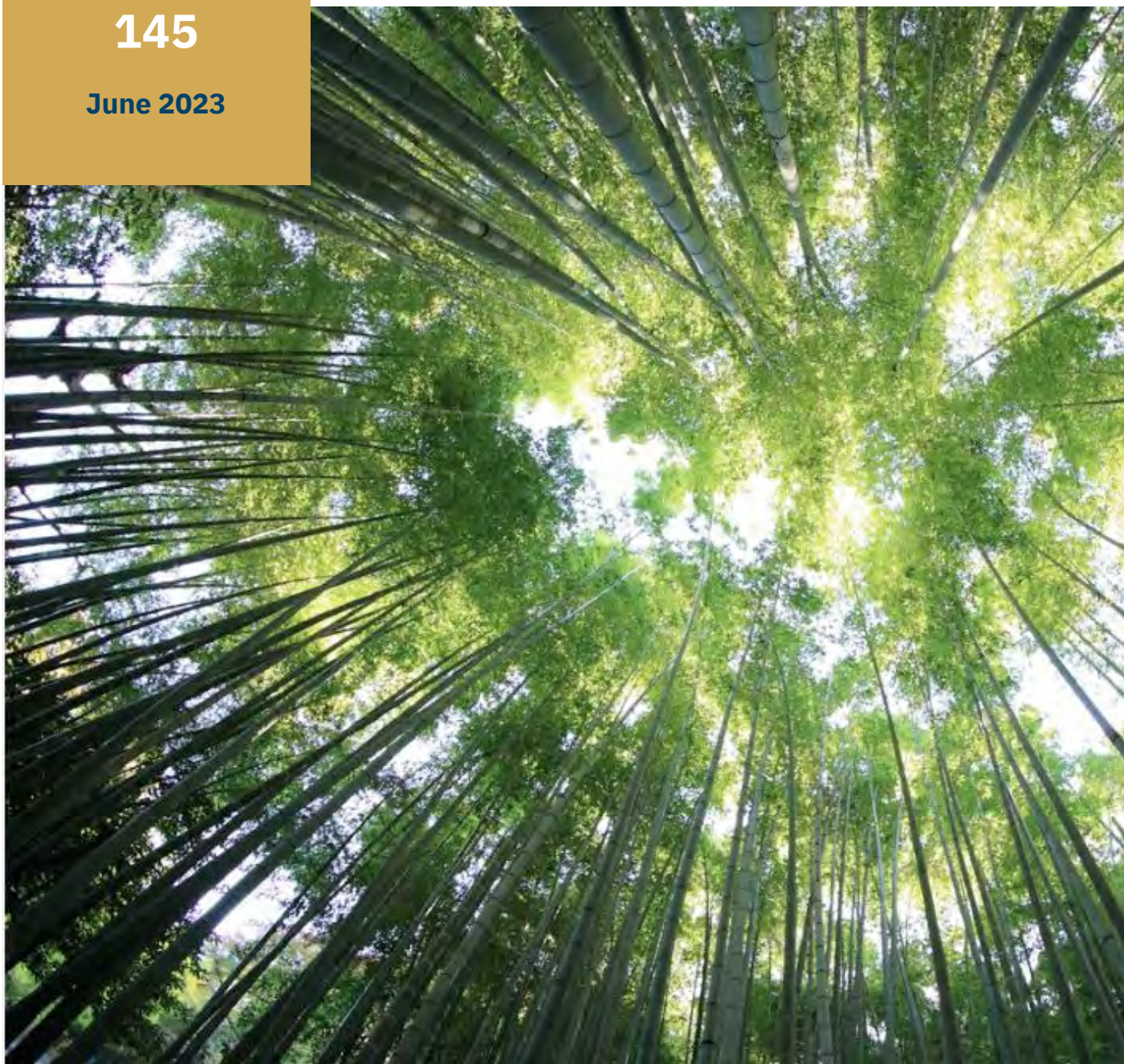# SADC Futures of Green Industrialisation: A Call for an Alternative Paradigm?

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African perspectives
Global insights

SAIIA

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Executive summary

The Southern African Development Community (SADC) Vision 2050 contemplates a 'peaceful, inclusive, competitive, middle- to high-income industrialised region, where all citizens enjoy sustainable economic well-being, justice, and freedom'. SADC is strategically positioned to leverage the ongoing global energy transition, attract foreign direct investment, and alleviate the challenges of a lack of access to basic needs and inequality, which impede development. African countries, though, face an existential dilemma: how to pursue their economic transformation and industrialisation agendas while also being responsive to the call for climate action. Creating green economies is viewed by some as the solution to these economic challenges, but SADC can no longer afford to cut and paste external green industrialisation policies and practices. This policy insights explores a new, alternative paradigm where green industrialisation is based on regenerative principles and approaches and is built on historically rich, African indigenous knowledge systems.

SADC and industrialisation

The SADC Secretariat has separate strategies for industrialisation and building a green economy in the region. A recent policy insights[1] by SAIIA focused on SADC industrialisation futures and identified two main uncertainties: governance of Industry 4.0 and the shift to green economies and greater sustainability. A challenge arises with the inherent tension and contradiction between the pursuit of industrialisation and the pursuit of a green economy. Green industrialisation (GI) is perceived to be the solution to this challenge. By diving deeper into the paradigms and mental models driving SADC policies and strategies, this policy insights extends the scenario analysis beyond greenwashing and sustainability and posits that regenerative approaches are needed to better distinguish between sustainability and transformative well-being, as it relates to SADC's strategies for industrialisation and climate change.

This policy insights explores alternative economic well-being and regenerative principles for designing green economic strategies beyond conventional notions of sustainability within the SADC context. In the process, it identifies regional risks and opportunities in important sectors for embedding regenerative well-being principles into industrial development. Regenerative approaches will be key to addressing five interdependent drivers of global change: climate disruption, biodiversity extinctions, loss of vast ecosystems, pollution and ever-increasing resource consumption.[2]

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1   Julius Gatune and Deon Cloete, "'SADC Industrialisation Futures: Towards Economic Wellbeing' (Policy Insights 123, South African Institute of International Affairs, Johannesburg, 2022), https://saiia.org.za/wp-content/uploads/2022/03/Policy-Insights-123-gatune-cloete.pdf,

2   Anthony Barnosky et al., "'Introducing the scientific consensus on maintaining humanity's life support systems in the 21st century: Information for policymakers,' *Anthropocene Review* 1, no. 1 (2014): 78–109.

Defining green industrialisation

The goal of GI is to dissociate economic growth from negative environmental externalities by adopting clean energy, sustainable inputs and green production technologies.[3] GI has two dimensions: 1) how industries pursue green strategies; and 2) which green enterprises provide environmental goods and services. The first dimension involves reducing the environmental impacts of industrial processes, products manufactured (packaging) and supply chains (logistics/transportation); incorporating circular systems (re-manufacturing/recycling); and boosting industries' resilience against climate change and natural disasters. The second dimension captures the supply of environmental goods and services needed by industries and the general economy, ie, waste treatment/management; manufacturing of equipment for pollution-control equipment, renewable energy and recovery/recycling; and service industries related to energy and environmental consulting, monitoring and analysis, as well as related financial and insurance services.[4]

Linked to GI would be policies that represent government efforts to accelerate the 'structural transformation towards a low-carbon and resource-efficient economy in ways that also enable productivity enhancements in the economy'.[5] Similar to GI are concepts like green economy (GE) and green growth (GG). The GE refers broadly to improving human well-being and social equity while simultaneously reducing ecological scarcities and environmental risks. GG refers to the utilisation of programmes, policies and projects aimed at pursuing inclusive economic growth by managing natural resources more effectively, building resilience against natural disasters, and investing in sustainable infrastructure and food security.[6]

Regenerative principles and approaches

Daniel Christian Wahl has spent over a decade advocating for regenerative approaches to address the challenges of the 21st century. He argues that a 'regenerative culture will have to facilitate the healthy personal development of a human being from ego-centric, to

3   Chema Triki and Jonathan Said, 'Maximising the Green Path to Industrialisation in Africa,' (Tony Blair Institute, 2021), https://institute.global/policy/maximising-green-path-industrialisation-africa.

4   Ralph Luken and Edward Clarence-Smith, 'Green Industrialization in Sub-Saharan Africa' (UONGOZI Institute, 2019), https://www.researchgate.net/publication/341398989_Green_Industrialization_in_Sub-Saharan_Africa_A_REFERENCE_GUIDE_FOR_POLICY_MAKERS.

5   Tilman Altenburg and Dani Rodrik, 'Green Industrial Policy: Accelerating Structural Change towards Wealth Green Economies,' in Green Industrial Policy: Concept, Policies, Country Experiences, eds. Tilman Altenburg and Claudia Assmann (Bonn: UN Environment, 2017), 1–21.

6   NEP, 'Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication' (2011), https://www.unep.org/resources/report/towards-green-economy-pathways-sustainable-development-and-poverty-eradication-10; GIZ, 'Green Economy in Sub-Saharan Africa: Lessons from Benin, Ethiopia, Ghana, Namibia and Nigeria' (2013), https://www.greengrowthknowledge.org/sites/default/files/downloads/resource/green_economy_in_sub_saharan_africa_GIZ.pdf; AfDB, 'Facilitating Green Growth in Africa' (2012), https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Facilitating%20Green%20Growth%20in%20Africa.pdf.

socio-centric, to species-centric, to bio-centric, and cosmos-centric perspectives of self'.[7] Implicit in this approach is understanding how value systems and worldviews are shaped by culture and dominant social narratives. Important for Wahl is living the questions and collectively co-creating a new narrative to move away from the paradigms and mental models that created our current crises in the first place.

Throughout his writings, Wahl presents thought-provoking ideas to capture the paradigm-challenging nature of regenerative approaches. Figure 1 is a modification of Wahl's framework that contains five elements of a continuum. In his original framework, Wahl puts 'Conventional' on the far left, but this precludes movement towards situations that are worse than conventional. This necessitates the creation of two more categories to the left of Conventional ('Destructive' and 'Exploitative') to show that the future could be significantly bleaker if industrialisation defaults into these positions. This minor addition facilitates the use of a regenerative framework to develop a worst-case scenario.

Wahl built his model around the United Nations' 17 Sustainable Development Goals (SDGs); however, SDG 8 ('Decent Work and Economic Growth') does not align with the sustainability components of the other SDGs.[8] This challenge is also evident in the narratives related to GI and will be discussed later in this policy insights.

Figure 1   Wahl's Regenerative Design Framework
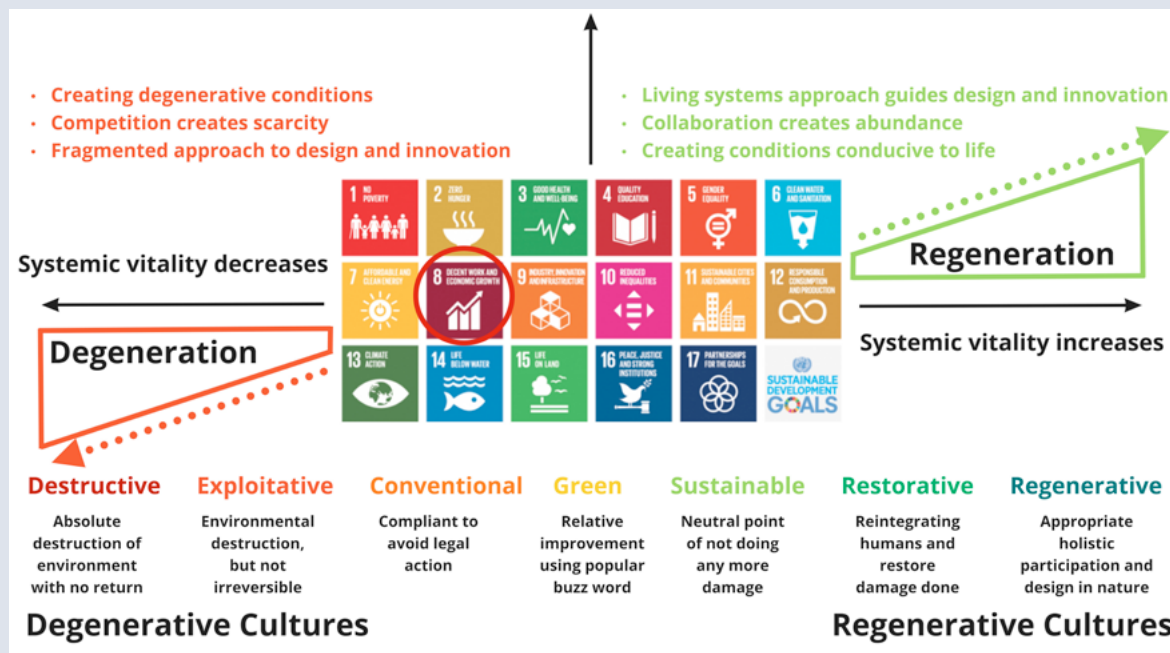
Source: Authors' modification from Daniel Christian Wahl, *Designing for Regenerative Cultures* (Axminster, England: Triarchy Press, 2016), 47

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7   Daniel Christian Wahl, *Designing for Regenerative Cultures* (Axminster, England: Triarchy Press, 2016), 47.
8   Halliki Kreinin and Ernest Aigner, 'From "Decent work and economic growth" to "Sustainable work and economic degrowth": A new framework for SDG 8' (*Empirica*, 2022), https://link.springer.com/article/10.1007/s10663-021-09526-5.

Regenerative principles

Wahl's regenerative theory contains eight important principles, which are summarised below.

Cooperation and collaboration: Our current economic and political systems are premised on a zero-sum paradigm (ie, a win–lose mindset), but this results in most societies losing in the long term. Cooperation and collaboration must replace competition to effectively regenerate healthy social systems marked by regenerative cultures that are found individually, collectively and at the planetary level.

Dualism and/or holism: In comparing dualism and holism to 'old' and 'new' stories, Wahl alerts us to the dangers of thinking of regenerative transformation as a replacement of the old story with a new story. He states that such separation into dualistic opposites is in itself part of the 'separation narrative' of dualism and that holism is not the complete negation of dualism, which serves a useful purpose in solving social problems.

Ecological design and biomimicry: Ecological design and biomimicry principles use nature as a model for design and are proving instrumental in transforming manufacturing, transportation, farming and building practices. Ecological design transcends the Western understanding of science and engineering and serves instead as a compendium of the entire human experience of social progress.

Futures/foresight: By asking the appropriate guiding questions repeatedly and fostering communal conversations about our collective future, we may be able to identify a set of patterns and guidelines that will help us create a regenerative culture capable of learning and transformative innovation.

Living the questions: History is replete with yesterday's solutions leading to today's problems. In our obsession with quick solutions, we fail to ask the right questions. The key here is to challenge our upstream mental models about how the world works. Before rushing into solutions that will only prolong business as usual in the future, we need to spend quality time making sure we are getting the questions right.[9]

Mental models, worldviews and paradigms: We will not find the solutions to these problems by continuing to base our thinking on the same erroneous assumptions about the nature of self and the world that created them in the first place. If we jump into action without deeper questioning, we treat symptoms rather than causes. This will prolong and deepen the crisis rather than solve it.

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9   Daniel Christian Wall, 'Questions, more than answers, are the pathway to collective wisdom' (January 2018), https://medium.com/age-of-awareness/questions-more-than-answers-are-the-pathway-to-collective-wisdom-fd413cad2ddc.

Sustainability: Sustainability itself is inadequate as a goal, for it does not tell us what is actually being sustained. We need to focus on sustaining the underlying pattern of health, resilience and adaptability that maintain this planet in a state where life can flourish. Thus, sustainability should ultimately entail design for human and planetary health.

Technology: Innovative technology alone is incapable of steering us through uncertainty and unpredictable futures. Technology is a double-edged sword as it will bring important breakthroughs for green industrialisation but it is no elixir or magic potion for understanding complex social systems and the limits of our knowledge.

Three industrialisation scenarios for SADC

Futures, in the plural form, signify multiple futures. SADC and its member states have agency over the direction of GI policies, plans and strategies for the region and can accordingly move towards different futures.

Pushes, pulls and weights driving green industrialisation

Figure 2   Futures Triangle

Source: Compiled by authors
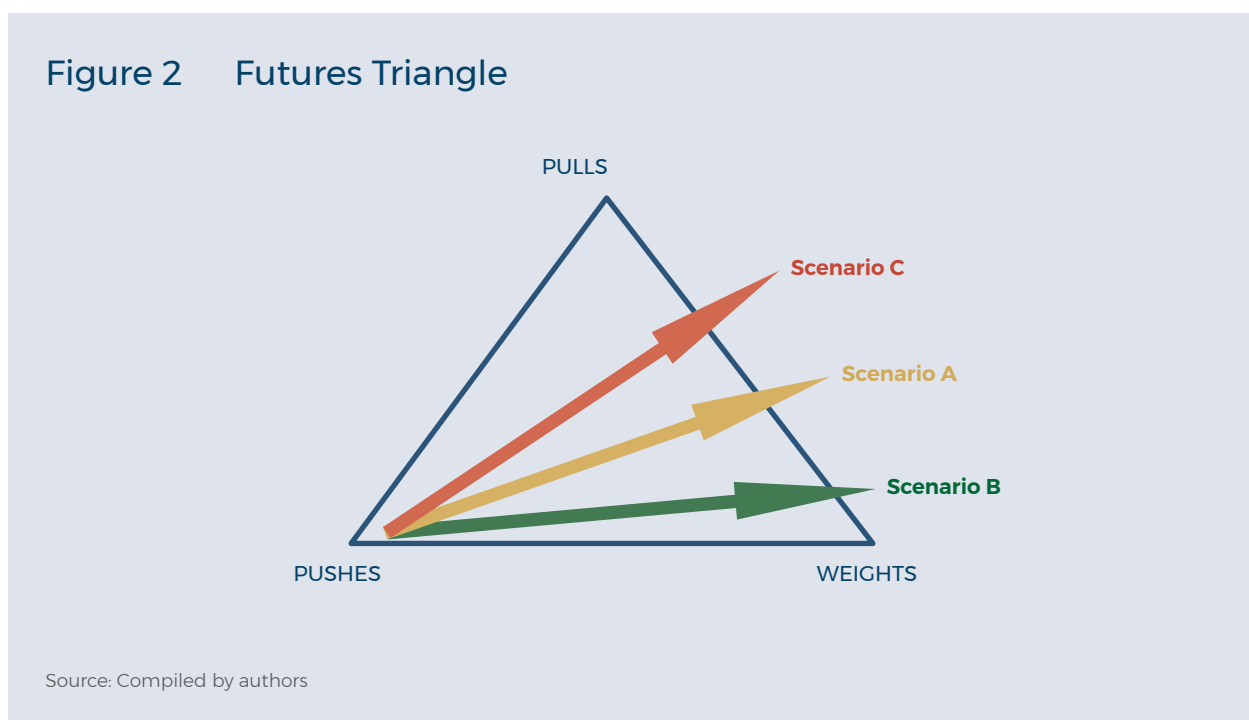
The Futures Triangle tool (Figure 2) was used to identify pulls, pushes and weights as they relate to efforts to realise GI in southern Africa. Pulls are what draw us into the future and represent a particular image of the future, ie, what could be or should be. Pushes are what drive society forward today and are informed by insight, signals, drivers, current trends and demographics. Weights are the challenges, barriers or histories that prevent the realisation of a particular preferred future.

A STEEP (social, technological, economic, environmental/ecological and political) analysis across the three areas of the Futures Triangle is summarised in Table 1. These signals, trends and drivers are used as the foundation of the next section's discussion on three different scenarios.

| TABLE 1 STEEP ANALYSIS			
STEEP factors[a]	**Pushes**	**Pulls**	**Weights**
Social	• Rural-to-urban migration • High unemployment • Growing inequality • Marginalised youth and other population groups • Social unrest	• Large youth population on the horizon • Growing middle class • Digitally connected society • Increased African agency via new education	• Education/skills mismatch • Poor Covid-19 response • Poverty • Historical trauma from colonialism • Cultural disempowerment of youth • Migration (brain drain)
Technological	• Innovation hubs • Emphasis on STEM (science, technology, engineering, maths) • Push towards electric vehicles	• Block chain • Artificial intelligence • Leapfrogging options	• Lack of support for adoption of green technology
Economic	• Stalled economic growth • Increased investment in GI • Urgency to find economic stability after Covid-19	• Need for affordable/sustainable energy • High economic growth • Tourism potential • Global demand for African rare minerals	• Lack of access to electricity • High debt levels • State capture influencing markets • Reliance on foreign investment
Environmental/ Ecological	• Abundant natural resources • Increased natural disasters • Climate change disruptions • Water scarcity • Deforestation • Resource depletion	• Increased awareness of ecological issues • High potential for use of renewables • Increased efficiencies	• Industrial pollution • Environmental degradation • Overfishing • Poor government response
Political	• Poor governance • Corruption • New 'Cold War' realities • New scramble for Africa	• Anticipatory governance • Decentralisation • Empowered civil society • Better-skilled government/political officials	• Insecurity/terrorism • Poor governance • Rigged elections • Authoritarian regimes • Corruption • Weak justice systems

Values	• Perpetual growth • Conspicuous consumption • Individual human rights • Humans as rational decision-makers	• Rights	

a   STEEP analysis refers to an external scan of factors from the past, present and future to build different scenarios. It typically combines social, technological, economic, environmental/ecological, and political factors (the ones used in this policy insights), but additional factors could include ethics, values, legal, education and cultural, among others.

Source: Compiled by authors

Three scenarios for SADC can be built, drawing on the insights gained from the Futures Triangle. Scenario A provides a business-as-usual narrative. Scenario B provides a worst-case scenario, where the weights of the past impede a better future. Scenario C provides a best-case scenario. Here the pulls of the future overcome any past challenges and weights. These scenarios also align with the modified version of Wahl's Regeneration Design Framework (see Figure 3).

Figure 3   Three SADC Scenarios
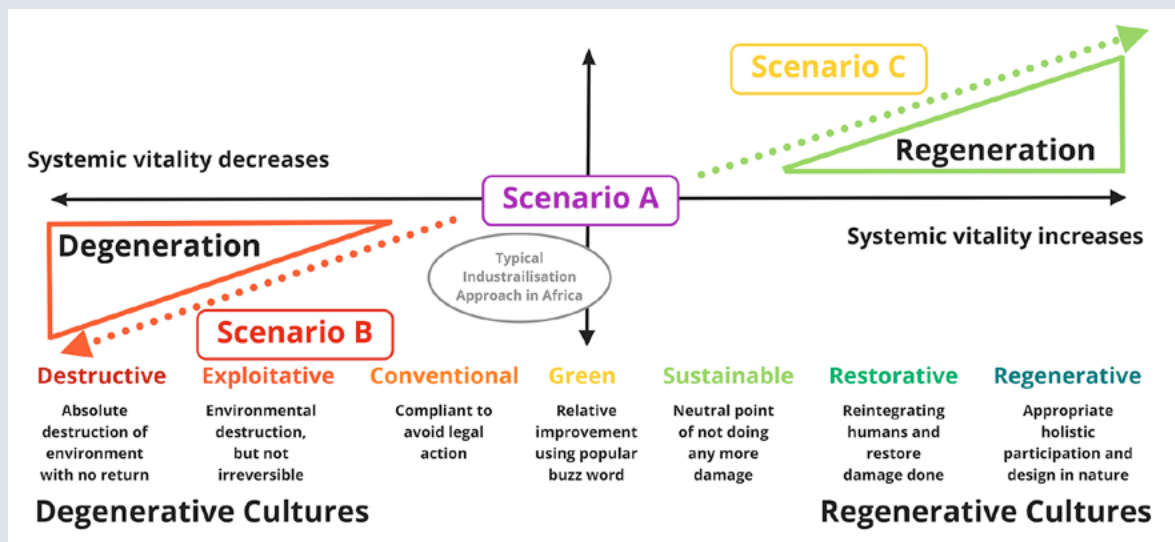
Source: Authors' modification from Daniel Christian Wahl, Designing for Regenerative Cultures (Axminster, England: Triarchy Press, 2016), 47

Scenario A – Short-term success, long-term loss

This business-as-usual scenario sees no significant changes related to green industrialisation. Greenhouse gas emissions continue to rise, pollution intensifies and biodiversity losses persist. Foreign and regional investments lead to increased industrialisation, but little of this

is green, sustainable or even remotely restorative or regenerative in practice. Short-term profit at the expense of long-term loss is the maxim of this scenario. Green washing[10] prevails, with local populations bearing the brunt of climate change, natural disasters and resource-related conflicts. Southern Africa continues to be the epicentre of resource extraction, with few global corporations concerned about long-term impacts. In this scenario, it is estimated that global economic losses could amount to nearly $180 trillion if climate change remains unchecked.[11] The national debt of SADC countries (most of which is tied up in expensive infrastructure projects that serve the elite) paralyses their ability to respond to social needs, greatly exacerbating inequality.[12] Token reform of the education system has resulted in an ongoing mismatch between acquired skills and the demands of the job market, prompting even greater migration of youth from the continent.[13] Apart from interregional migration, North America, Europe and the Middle East are the three primary destinations.[14]

> Foreign and regional investments lead to increased industrialisation, but little of this is green, sustainable or even remotely restorative or regenerative in practice

Scenario B – Apocalyptic Africa

Africa is on fire, literally and figuratively, in this scenario. Scenario B slides down into the red zone of the regenerative continuum. Here, average mean temperatures across SADC rise significantly, with some countries facing many weeks of 40°C+ temperatures.[15] Among the affected regions are those that have never previously experienced the now-pervasive cyclones/tropical storms, flooding, windstorms, deadly heat waves and deep freezes.[16] The consequences are shrinking grain harvests, the loss of rivers for irrigation, famine, increased

10 Green washing refers to a phenomenon where a firm's poor environmental performance intersects with a positive public relations strategy regarding the firm's environmental performance (see Sebastião Vieira de Freitas Netto et al., 'Concepts and forms of greenwashing: A systemic review,' *Environmental Sciences Europe* 32, no. 19 (2020), https://enveurope.springeropen.com/articles/10.1186/s12302-020-0300-3.

11 Deloitte, *The Turning Point: A Global Summary* (Deloitte Economics Institute, May 2022), https://www.deloitte.com/global/en/issues/climate/global-turning-point.html.

12 Mduduzi Biyase, 'General Government Debt and Growth in SADC Countries,' *EuroEconomica* 38, no. 2 (2019), https://journals.univ-danubius.ro/index.php/euroeconomica/article/view/6034.

13 SADC, 'Situational Analysis of Technical Vocational Education and Training (TVET) in SADC Member States,' n.d., file:///C:/Users/278 34/Downloads/Situational_Analysis_of_TVET_in_SADC_Member_States.pdf.

14 ACSS, 'African Migration Trends to Watch in 2022' (Africa Center for Strategic Studies, December 17, 2021), https://africacenter.org/spotlight/african-migration-trends-to-watch-in-2022/; Marie-Laurence Flahaux and Hein De Hass, 'African migration: Trends, patterns, drivers,' *Comparative Migration Studies* 4, no. 1 (2016), https://comparativemigrationstudies.springeropen.com/articles/10.1186/s40878-015-0015-6.

15 Mike Hulme et al., 'African Climate Change: 1900–2100,' *Climate Research* 17 (2001): 145–168, https://www.researchgate.net/publication/234081404_African_Climate_Change_1900-2100.

16 WMO, 'State of the Climate in Africa 2021' (World Meteorological Organization, 2022), https://public.wmo.int/en/our-mandate/climate/wmo-statement-state-of-global-climate/Africa.

conflicts over resources, massive natural disasters and rising numbers of climate refugees. These calamities are occurring regularly, triggering greater social inequality/exclusion, food insecurity, loss of livelihoods and personal property (including livestock and stored food), the disintegration of law and order, loss of personal/communal security, failed states, economic recession/depression and increased deforestation. Green industrialisation is only a pipe dream. Global mining firms essentially take control of resource-rich areas in SADC countries. Corporate-hired private security firms out-gun and out-man state military forces. Children are driven into mines as forced labour. In a race to secure greater access to rare earth minerals, China, India, Europe and the United States aggressively intervene across the continent, but a general scarcity mentality also overtakes SADC countries. Each country is now engaged in misinformation campaigns and covert wars to gain needed resources. Africa is not alone in this scenario, for the rest of the world is facing similar challenges. However, the impact is substantially more catastrophic. This scenario finally sees irreversible damage done to the macroecological system. Vast wastelands (either deserts or flood plains) replace once prime habitats. This dystopian future is truly devastating for Africa.

> Average mean temperatures across SADC rise significantly, with some countries facing many weeks of 40°C+ temperatures

Scenario C – Regenerative revival

The continent's rich resources and abundant skills and favourable demographics are leveraged across the SADC region to bring about a regenerative revival. SADC countries have not reached net-zero emissions by mid-century, but they are well on their way to accomplishing this by 2070. Other African regional economic communities (RECs) are seeking the counsel of SADC officials on how they are successfully implementing these

> A key factor for SADC has been the shifting of the narrative and collective mindsets to realise regenerative futures and embark on a process of protecting and even restoring damaged ecosystems

regenerative strategies. A key factor for SADC has been the shifting of the narrative and collective mindsets to realise regenerative futures and embark on a process of protecting and even restoring damaged ecosystems. The SADC community has managed to unite all populations across the 16 member states, but this has to some extent been due to climate

disruptions and ongoing natural disasters in the early 2020s not respecting national boundaries and collectively destroying the livelihoods of millions of residents of southern Africa. Ordinary citizens of SADC realised it was time to unite and systematically address the challenges facing the region. With its forward thinking and strategic foresight, SADC has been able to leverage this energy and guide the region towards strong socio-economic growth. SADC has also been greatly empowered and is fortunate to receive broad support, both financially and technically, from global partners who realise that climate emergencies are impacting the entire world.

Causal layered analysis of green industrialisation in SADC

Figure 4   Causal Layered Analysis

Source: Compiled by authors
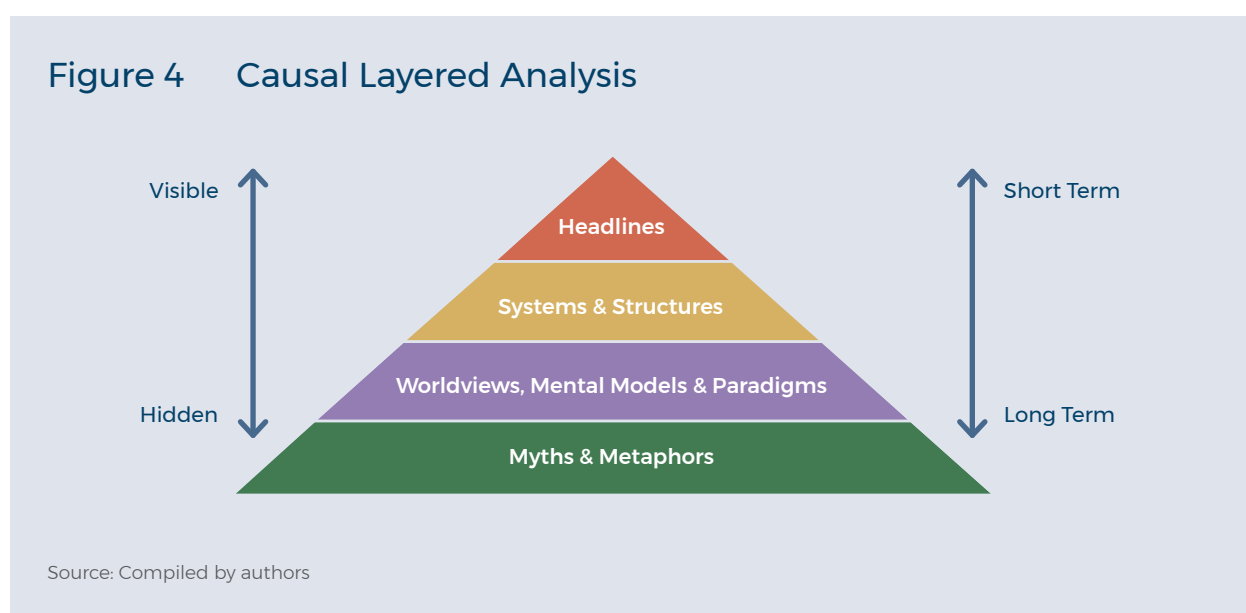
Causal layered analysis (CLA) is a useful tool for developing policies and strategies that are more robust, efficient and effective, as well as deeper, more long term and inclusive. CLA consists of four levels: headlines, social/systemic causes, discourse/worldviews and myths/metaphors (Figure 4). Headlines (level 1) are the surface understanding of an issue and are represented by dominant narratives. Systems and Structures (level 2) are the social, cultural, religious, economic and political structures, systems and policies underlying the issue. Worldviews, Mental Models and Paradigms (level 3) are the deeper mental models and paradigms guided by cultural assumptions and perspectives that enable the structures and behaviours. Metaphors and Myths (level 4) are the deeper social narratives and imagery, acting at the level of collective consciousness.[17]

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17   Sohail Inayatullah, 'Causal Layered Analysis: An Integrative and Transformative Theory and Method,' In Jerome Glenn and Theodore Gordon, *Futures Research Methodology*, Version 3.0 (The Millennium Project, 2009), http://www.metafuture.org/wp-content/uploads/2016/01/Causal-Layered-Analysis-FRM-version-3-2009.pdf.

Table 2 captures this CLA and provides a comparison of the present headlines, systems/structures, worldviews, and myths/metaphors for the present reality of green industrialisation, with a preferred future for regenerative economics.

TABLE 2 COMPARATIVE CLA	
Present reality for green industrialisation	**Preferred future for regenerative economics**
Headlines	
• Unlimited growth • Africa is open for business • Capitalism 3.0 or 4.0	• Africa feeds the world • SADC leads regenerative efforts • SADC models indigenous regenerative principles
Systems & Structures	
• Government policy and free markets/trade can bring sustainable green industrialisation • Technology will solve future environmental problems • RECs can guide GI	• Participatory, decentralised governments bring effective governance across all regions of SADC • Anticipatory approaches build regenerative financial models to support long-term regeneration • Empowered civil society works across countries to address disasters and climate change • Regenerative infrastructure supports ongoing well-being across all sectors of society • SADC leverages increased market access for manufactured goods due to the full implementation of the AfCFTA
Worldview, Mental Models & Paradigms	
• Linear economic growth models • Africa's future is tied to exporting rare minerals • Neo-colonialism repackaged may work again • Greenwashing is an acceptable approach	• Ubuntu drives new approaches to regenerative cultures across SADC, states and communities • Africa can be the source of its own finances, technology, education, manufacturing and food production • Youth are truly empowered by the cultural elite
Myth & Metaphors	
• Greed is good • It is my turn to eat • Industrialisation is key to Africa's growth • The West knows best	• United States of Africa • Pan-Africanism prevails • Many cakes are baked • I am because we are (Ubuntu) • We are relational (Ukama)

Source: Compiled by authors

Policy challenges and opportunities for green industrialisation

Continuing with the four thematic areas of causal layered analysis, the following eight key conclusions were arrived at during the analysis and synthesis of the futures of green industrialisation in SADC.

- **Regenerative principles are generally lacking in terms of green industrialisation.**

  While SADC has strategies and policies[18] in place related to green economies and industrialisation, what is lacking is a wider strategy that effectively addresses transformative regenerative approaches, as advocated by Wahl and others. Across numerous bodies and entities – SADC, African Development Bank, African Union, World Bank, International Monetary Fund, UN, etc. – the adjective 'green' is attached to numerous terms, ie, economy, growth and jobs (among others). Yet many of these approaches remain oriented towards linear economic growth models, which rarely consider true environmental costs and would best be represented by the middle three stages found in Figure 3 (Conventional, Green and Sustainable).

> While SADC has strategies and policies in place related to green economies and industrialisation, what is lacking is a wider strategy that effectively addresses transformative regenerative approaches

- **The demographic future is African, but inconsistent economic growth and poor governance will hinder SADC's ability to move forward with regenerative economics.**

  Demographically, Africa dominates the headlines. By 2030, one-fifth of the world's population is anticipated to be from Africa and by 2050, one-third of all the children in the world will be African. The population of the Democratic Republic of Congo (DRC) will be close to 200 million by 2050, while Nigeria is expected to be the second most populous country after India by 2100.[19] Africa's 18–35 demographic group is projected to reach 800 million by 2050. Tens of millions of African youth join the labour market every year, but many lack the skills/training needed to realise their full potential.[20] Some experts view this 'youth bulge' as a 'ticking time bomb', while others

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18   These include Agenda 2063; SADC's Green Economy Strategy and Action Plan for Sustainable Development; Industrialisation Strategy and Roadmap 2015–2063; Action Plan for SADC Industrialisation Strategy and Roadmap; Climate Change Strategy and Action Plan; Renewable Energy Strategy and Action Plan; Regional Indicative Strategic Development Plan 2020–2030; and Policy Paper on Climate Change.

19   François Soudan, 'The future of humanity will be less white and increasingly African,' *The Africa Report*, July 8, 2021, https://www.theafricareport.com/106342/the-future-of-humanity-will-be-less-white-and-increasingly-african/.

20   Mo Ibrahim, 'The Future of Africa,' Unicef, https://www.unicef.org.uk/globalbritainessays/mo-ibrahim-africa/.

see this demographic trend as an asset (workforce and consumers).[21] Nevertheless, any future regenerative strategy will need to remain cognisant of this youth demographic and their respective views, as captured in Box 1.

However, trends related to economics, governance and democracy suggest that SADC member countries will face numerous challenges with their green industrialisation efforts. This is illustrated by the following 10-year (2012 and 2021) BTI Atlas trends related to economics, governance and democracy:

» **Economy status:** Angola, Zambia, South Africa, Namibia, Mozambique, Malawi, and Botswana all showed a decline. There was little change in Madagascar, Mauritius, Tanzania, Zimbabwe and Lesotho. In addition, there were no improvements.[22]

» **Governance status:** Madagascar, Zimbabwe and Angola showed improvement, while Lesotho, Zambia, Namibia, Tanzania, Mozambique and Botswana all showed a decline. There was no change in South Africa, Malawi and Mauritius.[23]

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21   Moky Makura, 'Africa's youth: Busting myths and creating change,' *The Africa Report*, November 17, 2020, https://www.theafrica report.com/49657/africas-youth-busting-myths-and-creating-change/.

22   BTI Atlas Trends (Economic Status trends), https://atlas.bti-project.org/1*2022*GV:SIX:REG5*CAT*ANA:REGION*region:5.

23   BTI Atlas Trends (Governance Index trends), https://atlas.bti-project.org/1*2022*GV:SIX:REG5*CAT*ANA:REGION*region:5.

» **Democracy status:** Only Malawi improved. Zambia, Mozambique, Tanzania, Angola and Zimbabwe all showed a decline. Madagascar, Mauritius, South Africa, Lesotho, Namibia and Botswana showed little change.[24]

• **There are conflicting goals within the UN SDGs and the AU/SADC goals as they relate to regenerative futures and implications for industrialisation.**

Green industrialisation is still embedded in linear economic growth systems. The UN SDG 8 exemplifies this paradigm, but even the AU's and SADC's dominant paradigm for industrialisation relies on these linear models of growth, with any sustainability narrative tacked on as an aside. Post-growth or degrowth strategies are not considered essential realities for the future. Economic growth continues to trump ecological concerns and social justice.[25] The only regenerative attributes mentioned in the UN, AU and SADC documents are related to technology, sustainability and, to a degree, foresight/futures.

> Green industrialisation is still embedded in linear economic growth systems

• **An extractive 'green neo-colonialism' and a 'green scramble for Africa' are evident across the continent, led primarily by Europe and China (with the US a latecomer).**

Driven by Western and Chinese corporations, this 'green scramble for Africa' represents only a fraction of the historical resource extraction processes taking place that have no environmental, sustainable or green components. Where there is scarcity, there is money to be made, even if neo-colonial approaches are required. For example, green industrialisation is expected to double the annual global supply of copper by 2035 to 50 million metric tonnes, yet there are few realistic ways of meeting this demand on the basis of circular economy principles. Electric vehicle production alone requires around 80kg of copper (buses need almost a kiloton).[26] SADC member states will be at the centre of this scramble, with Zambia, Namibia and the DRC being the first, third and fifth largest exporters of unrefined copper in 2020, respectively.[27]

24   BTI Atlas Trends (Democracy Status trends), https://atlas.bti-project.org/1*2022*GV:SIX:REG5*CAT*ANA:REGION*region:5.

25   Jason Hickel, 'The Contradiction of the Sustainable Development Goals: Growth versus ecology on a finite planet,' *Sustainable Development* 27 (2019): 873–884, https://onlinelibrary.wiley.com/doi/abs/10.1002/sd.1947; Nina Eisenmenger et al., 'The Sustainable Development Goals prioritize economic growth over sustainable resource use,' *Sustainability Science* 15 (2020): 1101–1110, https://link.springer.com/article/10.1007/s11625-020-00813-x; Joe Brewer, *The Design Pathway for Regenerative Earth* (Earth Regenerators Press, 2021).

26   James Marinero, 'Going Green is Driving a World Copper Shortage,' *Medium*, August 9, 2022, https://medium.com/the-dock-on-the-bay/going-green-is-driving-a-world-copper-shortage-94f573fc34a7.

27   Observatory of Economic Complexity, https://oec.world/en/profile/hs/raw-copper.

> Driven by Western and Chinese corporations, this 'green scramble for Africa' represents only a fraction of the historical resource extraction processes taking place that have no environmental, sustainable or green components

- **SADC's green industrialisation strategy is embedded in a complex system[28] of geopolitical and geoecological[29] uncertainty.**

In early 2020, the SADC region looked set to continue on a rising economic trajectory but was then engulfed by Covid-19 and the global shutdown. While the number of deaths in Africa was proportionately lower than that in other regions, the economic downturn hit the continent hard. Another form of a global pandemic is most likely on the horizon, but beyond this phenomenon, several other factors point to geopolitical and geoecological complexities. Consider:

» The economic disruption caused by Russia's invasion of Ukraine could well have driven an additional 1.8 million Africans into extreme poverty in 2022 and another 2.1 million could face this prospect in 2023.[30] Together Russia and Ukraine export about 30% of the world's wheat and 20% of the world's maize. Cooking oil, fertiliser, natural gas and oil are also important exports. Increased commodity prices on top of the economic struggles associated with Covid-19 will heighten the risk of food crises, especially in low-income countries that are highly dependent on basic food staples from Russia and Ukraine.[31]

» European demographics in the future will show sharp downward trends and will require a steady flow of immigrants. Africa will become a prime recruitment target, with more and more educated individuals being lured to Europe and its perceived high standards of living. If Africa's bold, dynamic, educated and innovative citizens are emigrating, any green industrialisation strategy that does not address education, work-based training and forward-thinking job creation will lack the human resources needed for effective implementation.[32]

28   Complex systems consist of interconnected and interdependent elements and dimensions; feedback processes promote and inhibit change within systems; system characteristics and behaviours emerge from simple rules of interaction; nonlinearity; sensitivity to initial conditions; phase space – the 'space of the possible'; attractors, chaos and the 'edge of chaos'; adaptive agents; self-organisation; and co-evolution. See Ben Ramalingam et al., 'Exploring the science of complexity: Ideas and implications for development and humanitarian efforts', (Working Paper 285, Overseas Development Institute, October 2008), https://www2.econ.iastate.edu/tesfatsi/ComplexityImplicationsDevelopmentEfforts.BRamalingamEtAl.2008.pdf.

29   Geoecology is an interdisciplinary and multidisciplinary science that integrates geography with ecology.

30   African Development Bank. *African Economic Outlook 2022: Supporting Climate Resilience and a Just Energy Transition in Africa*, https://www.afdb.org/en/knowledge/publications/african-economic-outlook.

31   OECD, 'Confronting the Crisis' (OECD Economic Outlook, November 2022), https://www.oecd.org/economic-outlook/.

32   François Soudan, 'The future of humanity will be less white.'

» Climate change and variability disproportionately impact Africa, making it one of the most vulnerable continents to rising temperatures, water scarcity and natural disasters. Despite the costs to human health and economic systems, the predominant view is that decarbonisation cannot come at the expense of industrialisation.[33]

- **Reinvigorating Africa's indigenous knowledge systems and the principles and ethos of regeneration will be crucial for the future well-being of SADC.**

  A close reading of Wahl's scholarship on regenerative cultures reveals many parallels with African indigenous philosophy, principles and practices.[34] In Figure 5, the concept of Ubuntu is used to represent the various African indigenous knowledge systems (IKS) that holistically address humanness but also underpin the moral obligations of past, present and future generations. African IKS contain all the regenerative attributes listed earlier and will be crucial in healing the disconnect and ruptures between society, self and nature.[35]

- **Shifting deeper paradigms and mental models will be crucial for SADC's economic well-being and regenerative strategies.**

  CLA exposes the deeper realities that permeate systems and structures and related top-level headlines and realities. However, most of the strategies, policy documents, reports and academic articles focus on the system and structural level, where policy change and structural adjustments are readily recommended. By shifting deeper paradigms and mental models, real change can occur, but such shifts take significant time and investment. This was discussed in more detail in relation to the three systems-change models introduced earlier.
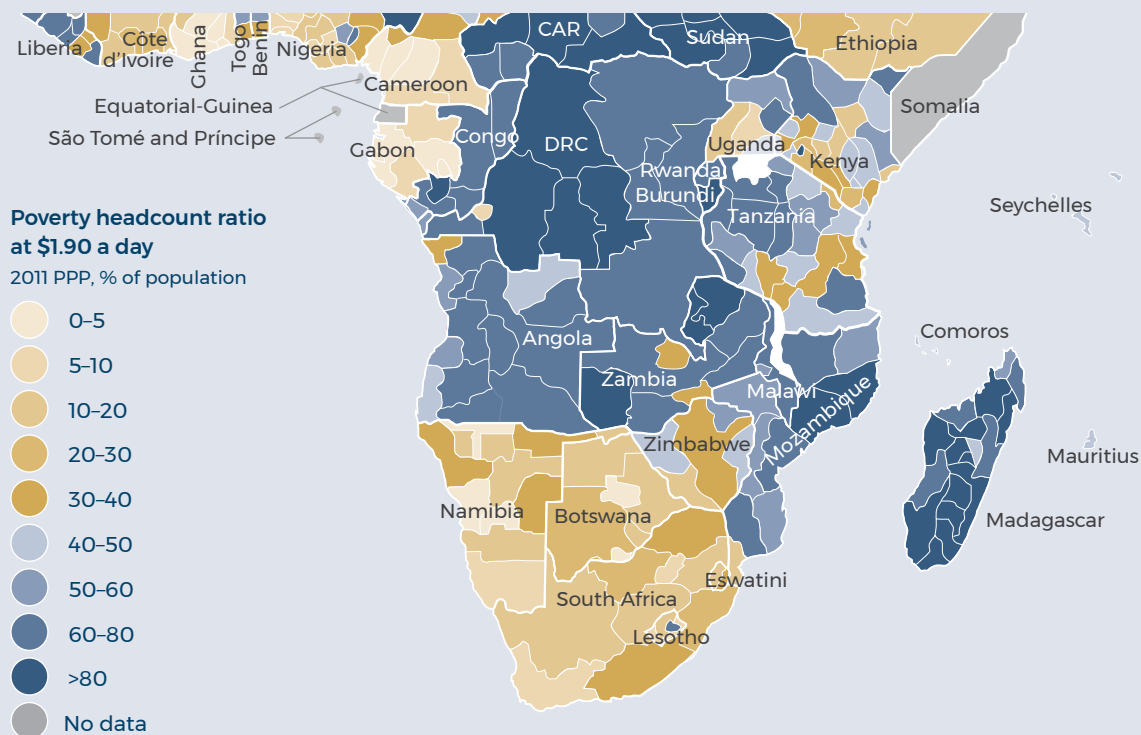
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33   Lyes Bouchene et al., 'Africa's green manufacturing crossroads: Choices for a low-carbon industrial future,' McKinsey, September 27, 2021, https://www.mckinsey.com/capabilities/sustainability/our-insights/africas-green-manufacturing-crossroads-choices-for-a-low-carbon-industrial-future; AU, 'Agenda 2063: The Africa we want in 2063' (African Union, 2015), https://au.int/sites/default/files/documents/33126-doc-06_the_vision.pdf.

34   Daniel Christian Wahl, 'Towards a regenerative economy,' May 9, 2017, https://medium.com/age-of-awareness/towards-a-regenerative-economy-bf1c2ed6f792. One could contend that Wahl has simply repackaged African thought and sold it as a European invention. Figure 5 draws on a graph designed by Wahl in which he uses the word 'love' where 'Ubuntu' is placed, but this substitution goes to the heart of the Ubuntu philosophy.

35   See Edwin Etieyibo, 'Ubuntu and the Environment,' in *The Palgrave Handbook of African Philosophy* (2017): 633–657; Lesley Le Grange, '*Ubuntu ukama*, environment and moral education,' *Journal of Moral Education* 42, no. 3 (2012): 329–340, https://www.researchgate.net/publication/254306065_Ubuntu_ukama_environment_and_moral_education; Aïda Terblanché-Greef, 'Ubuntu and Environmental Ethics: The West Can Learn from Africa When Faced with Climate Change,' *African Environmental Ethics* 29 (2019): 93–109, https://www.researchgate.net/publication/333482585_Ubuntu_and_Environmental_Ethics_The_West_Can_Learn_from_Africa_When_Faced_with_Climate_Change; Danford Chibvongodze, 'Ubuntu is Not Only about the Human! An Analysis of the Role of African Philosophy and Ethics in Environmental Management,' *Journal of Human Ecology* 53, no. 2 (2016), https://www.tandfonline.com/doi/abs/10.1080/09709274.2016.11906968. Note: With the reinvigoration of Ubuntu and other African indigenous philosophies, care needs to be taken to ensure that they are not hijacked by Africa's elite who use them not to build human dignity but to enrich themselves (see Bernard Matolino and Wenceslaus Kwindingwi, 'The End of Ubuntu,' *South African Journal of Philosophy* 32, no. 2 (2013): 197–205, https://www.tandfonline.com/doi/abs/10.1080/02580136.2013.817637.)

Figure 5   Separation vs Ubuntu

FROM A VICIOUS CIRCLE TO A VIRTUOUS CIRCLE

EXPLOITATIVE AND DEGENERATIVE CULTURES

NURTURING AND REGENERATIVE CULTURES

• Competition
• Prediction & control
• Separation

• Search for meaning
• Creativity & play
• Collaborative abundance

• Collaboration
• Participation
• Co-creation

SEPARATION

UBUNTU

• Homogenisation
• Maximisation of parts
• Individual benefit

• Alienation
• Self-world split
• Culture-nature split

• Valuing diversity
• Optimisation of the whole
• Collective benefits

• Belonging
• Sense of place
• Shared meaning

The narrative of separation

• Disappointment
• Withdrawal
• Competitive scarcity

The narrative of interbeing

Source: Complied by authors

- **Small is beautiful: Regenerative economics as if people mattered.**

The concept of 'small is beautiful'[36] has a localisation emphasis and acknowledges that ordinary citizens within SADC member states can take a more humanistic view and offer important insights when they are suitably empowered and their perspectives are sought by experts in the region. SADC, as an REC, finds its identity and focus and delivers its results mainly at this macro level. The important contributions that SADC makes include integrating the 16 member states, developing green industrial policies and fostering investment in infrastructure. However, if local realities are considered, then important new insights could be developed in terms of emergent practices and bioregional approaches, and how they can be contextualised and sustainably implemented at local levels. SADC has a predilection for being state-centric, and rightly so. Yet this may lead to a development hierarchy, ie, Botswana and Mauritius are seen as being on top, with Mozambique and the DRC at the bottom. However, when comparing poverty levels in each state, a different picture emerges. Pockets of extreme poverty are found across most member states. Figure 6 shows these disparities in southern Africa.

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36   Ernst Friedrich Schumacher, *Small Is Beautiful: A Study of Economics as If People Mattered* (New York: Harper & Row Publishers, 1973).

Figure 6   Poverty headcount ratio in southern Africa

Poverty headcount ratio
at $1.90 a day
2011 PPP, % of population

- 0–5
- 5–10
- 10–20
- 20–30
- 30–40
- 40–50
- 50–60
- 60–80
- >80
- No data

Source: World Bank, 'Global Subnational Atlas of Poverty', Washington, DC.

Towards systems change in SADC green industrialisation

In this section, three systems-change models are discussed for the purpose of framing recommendations for SADC. The quality of each recommendation is underpinned by important underlying questions. If a particular recommendation does not resonate with a reader, the deeper questions should steer conversations towards alternative solutions. In short, the recommendations are a conversation starter and support Wahl's admonishment to 'live the questions'. After the three models are introduced, eight recommendations are provided for a wide range of stakeholders, ie, the public/private sectors, industry, civil society and non-governmental organisations (NGOs).

Regenerative principles rely on systems and complex thinking and can thus be rather abstract. It is therefore important to have a model or framework to show the practical application of the principles. An underlying theme of regeneration, as demonstrated by CLA, is challenging existing systems and structures as well as the mental models and paradigms that support them. These two systems-change models show the continuum

from surface-level and relatively ineffective policies, practices and resources to the deeper, more complex and challenging transformative change that occurs with shifts in paradigms and mental models. The models are introduced here to provide a framework for adding innovative and fresh insights to the potential for, and challenges of, reimagining economics in SADC and the implications thereof for green industrialisation.

Figure 7   FSG's six conditions of systems change
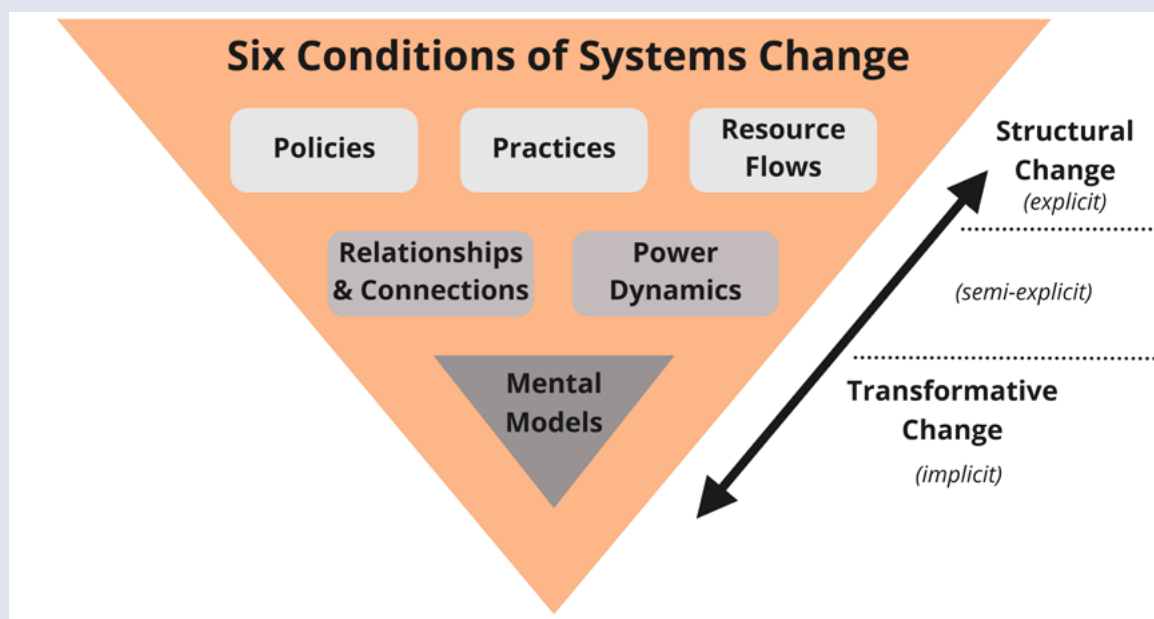
Source: FSG, Six Conditions of Systems Change

Experts at FSG developed the six conditions of systems change (Figure 7).[37] Similar to the CLA approach, these six conditions represent areas where SADC can implement regenerative well-being principles. These conditions are:

- **Policies:** Government, institutional and organisational rules, regulations and priorities that guide the entity's own and others' actions.

- **Practices:** Espoused activities of institutions, coalitions, networks and other entities targeted at improving social and environmental progress; also, the procedures, guidelines or informally shared habits that constitute entities' work.

- **Resource flows:** The allocation and distribution of money, people, knowledge, information and other assets, such as infrastructure.

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37   John Kania et al., 'The Water of Systems Change,' (FSG, 2018), https://www.fsg.org/resource/water_of_systems_change/.

- **Relationships and connections:** The quality of connections and communication occurring among actors in the system, especially those with differing histories and viewpoints.

- **Power dynamics:** The distribution of decision-making power, authority, and both formal and informal influence among individuals and organisations.

- **Mental models:** Habits of thought, ie, deeply held beliefs and assumptions and taken-for-granted ways of operating that influence how we think, what we do and how we talk.

Leverage points in a system

Donella Meadows,[38] a leading pioneer in systems thinking, identified 12 leverage points in a system and rank-ordered them according to their ability to produce change across the system as a whole (see Figure 8). She posited that some leverage points (eg, the three on the extreme left) are easier to implement but have limited capacity to induce significant change, while others (eg, the three on the far right) are difficult to bring about but have great potential to induce transformative change.

Figure 8   12 leverage points in a system
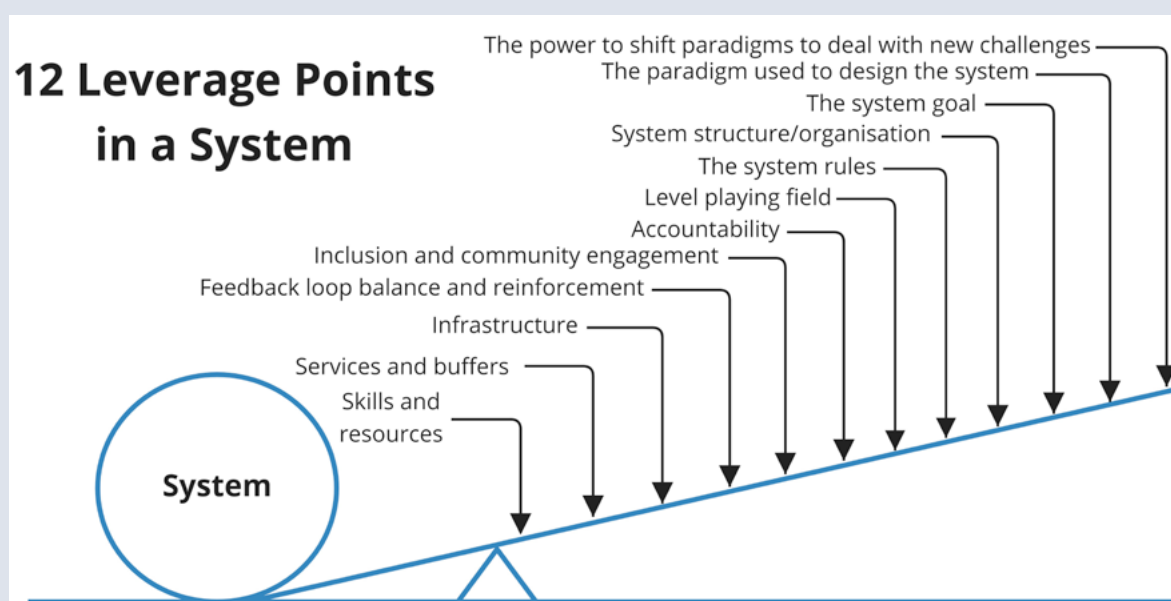
Source: Adapted by authors from Corina Angheloiu & Meadows (1977), Leverage Points: Places to Intervene in a System

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38   Donella Meadows, 'Leverage Points: Places to intervene in a System, Academy for Systems Change, The Sustainability Institute, 1999 https://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/; Figure 8 represents a modification of Meadows' original 12 points with insights from Lee Robinson – see http://www.enablingchange.com.au/systems.php.

Policy recommendations

The following policy recommendations are arranged according to the two systems-change models' principles of transformative change. The first four may be easier to implement. The latter four will prove to be more challenging but (as Meadows posits) may bring about greater transformative change through the application of regenerative principles to green industrialisation strategies and policies.

1   **Build SADC member states' capacity to develop strategic-foresight, macro-trend-monitoring tools to assess the leaning of SADC members towards Scenarios B and C.**

Scenarios B and C constitute opposite futures for SADC, but both entail cross-border and transnational challenges and opportunities for which SADC is strategically positioned to provide leadership. Numerous socio-economic, ecological and governance indicators are at the disposal of SADC and its member states, but most of these are siloed within individual ministries, departments and parastatals. SADC, in partnership with the Southern African Research and Documentation Centre and similar research entities based in member states, could pioneer the development of a basket of indicators or an eco-economic dashboard to be used as an early warning system for Scenario B. For Scenario C, similar indicators could reveal where successes are occurring and how they could be leveraged/scaled across the region. For example, the Earth Policy Institute tracks 12 trends to measure progress towards the creation of a sustainable economy. These are: population, global economy, grain harvest, fish catch, forest cover, water resources, carbon emission, global temperature, ice melting, wind power, bicycle production and solar power.[39]

2   **Leverage the 'green narrative/paradigm' and sustainable efforts within SADC to shift mental models towards regenerative approaches.**

There are some common policy recommendations for SADC member states wishing to realise their GI strategies. For example, one study estimated that it would take an initial investment of $62 trillion to ensure that the world switched to sustainable green energy (hydro, solar and wind). Nevertheless, renewable energy would end up being extremely profitable, taking approximately six years of operation to repay this initial cost.[40] Other policy recommendations include implementing pricing policies and regulations that foster market incentives for green products and processes, as well as taking steps to build firm capacity, improve governance and stimulate entrepreneurial activities to take advantage of current and future green industrial

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39   Earth Policy Institute, 'Eco-Economy Indicators,' http://www.earth-policy.org/publications/C39.
40   Mark Jacobson et al., 'Low-cost Solutions to Global Warming, Air Pollution, and Energy Insecurity for 145 Countries,' *Energy and Environmental Science* 8 (2022), https://web.stanford.edu/group/efmh/jacobson/Articles/I/145Country/22-145Countries.pdf.

sectors.[41] These are important ideas, but the two systems-change models suggest that for truly transformative change to occur, the green narrative/paradigms embedded in these policies will need to be leveraged to address relationships/connections, power dynamics, and the fundamentally deeper paradigms and mental models.

3   **Prepare contingency plans for Scenario B: Apocalyptic Africa.**

Not all the realities described in Scenario B: Apocalyptic Africa, may come to pass in the coming years, but elements of this scenario may hit SADC member states in the not-too-distant future. Any of these would seriously derail green industrialisation strategies and projects and further postpone the movement towards regenerative well-being. Preparing contingency plans now will enable SADC to take the lead in coordinating a reduced government response time and ameliorating the short- and long-term consequences of natural disasters, conflict and migration, among other phenomena.

4   **Foster and facilitate transformative spaces for systems change.**

SADC, representing 16 member countries, is state-centric, but arriving at a true understanding of the necessary systems and structural levels of systems change will require deeper engagement with local stakeholders. These could be stakeholders in community-based organisations, cooperatives, faith-based initiatives, private businesses and advocacy groups

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BOX 2

You cannot understand a system unless you change it. You cannot change a system unless you transform consciousness. You cannot transform consciousness unless you can make a system see and sense itself. What State of the Art Systems Thinking does is add systems sensing into the body of systems thinking methodologies. Unless I sense the pain of the collective, the grieving that we can feel, the pain of the other, unless I open my heart and feel it myself, profound change is not going to take place.

Source: Helio Borges, 'Awareness Based Systems Change: Deep Resonance,' June 25, 2020, https://medium.com/presencing-institute-blog/awareness-based-systems-change-deep-resonance-bef9ca451749

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41   Milan Brahmbhatt, 'Africa's Green Growth Opportunity' (World Resources Institute, October 23, 2017), https://www.wri.org/insights/africas-green-growth-opportunity. For other examples, see 'Green Industrialisation against "Climate Colonialism" in Africa?' (Webinar report, Vienna Institute for International Dialogue and Cooperation, December 2, 2021) and Thomas Hale, Kennedy Mbeva, 'Towards a Green Trade Strategy for Africa,' Blavatnik School of Government, *Voices*, June 13, 2022, https://www.bsg.ox.ac.uk/blog/towards-green-trade-strategy-africa.

The SADC Secretariat could foster a shared awareness across these stakeholders, enabling them to see, hear and feel what is working, what is not working, what assets exist on the ground, and what networking role certain SADC member states might play. Once regenerative principles and policies become more firmly rooted in shifts of worldviews and mental models, which allow collective human nature to flourish at the centre of government and business, then market investments, financing and consumer demand will follow this awareness-based systems change.[42] An example of such sensing and awareness-based systems change is the partnership between the UN Development Programme and the Massachusetts Institute of Technology Presencing Institute. Together they hosted a series of dialogues to build the necessary capacities for awareness-based, collective action. The partnership has continued through the fostering of a movement that sustains the learning and connections needed to cultivate transformational and systems-change literacy across the UN system and beyond.[43]

5   **Reimagine Ubuntu/Ukama principles and other African IKS and consider their application to regenerative approaches for the future of industrialisation in SADC.**

Much of Wahl's regenerative approach is found in Ubuntu and other IKS in Africa and elsewhere. Ukama is a particularly helpful concept. Whereas Ubuntu is about interdependent relationships between people, Ukama is more all-encompassing and holistic and incorporates relationships between humanity and the environment, but also with the ancestors.[44] IKS like Ubuntu and Ukama have served as custodians of ecosystems around the world for millennia. Today, 80% of the biodiversity in the world is found on land populated by indigenous people who have served as custodians.[45] SADC member states should revisit and explore the various perspectives, drawing from African IKS and wisdom sources related to regenerative culture and economics,

> SADC member states should revisit and explore the various perspectives, drawing from African IKS and wisdom sources related to regenerative culture and economics, that are relevant to SADC policies and strategies

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42   Antoinette Klatzky, 'Can Regenerative Business Restore Planet Earth?' March 15, 2022, https://medium.com/presencing-institute-blog/can-regenerative-business-restore-planet-earth-a4a5698187c9.

43   Otto Scharmer, Awareness-based Collective Action: Dialogue Series with Otto Scharmer. YouTube videos of sessions can be found at https://www.youtube.com/playlist?list=PLwCXoRNT9rNEzFAMVC7L9_OH_kSsmID6r.

44   Mark Swilling, *The Age of Sustainability: Just Transitions in a Complex World* (London: Routledge, 2020); Munyaradzi Murove, ed. *African Ethics: An Anthology of Comparative and Applied Ethics* (Scottsville, South Africa: University of Kwa-Zulu-Natal Press, 2009), 14–32.

45   Daniel Christian Wahl, 'Regenerative Futures: Redesigning the Human Impact on Earth,' December 9, 2021, https://designforsustainability.medium.com/regenerative-futures-redesigning-the-human-impact-on-earth-8a9623e71ca7.

that are relevant to SADC policies and strategies. This approach may represent an 'African about-face' where the continent makes a 180-degree turn and pursues a new path marked by regenerative principles found in Ubuntu and Ukama. Instead of following linear growth models, which always seem to have African nations at the bottom of the rankings and European countries at the top, Africa could short-circuit the development process. Figure 9 captures this journey.
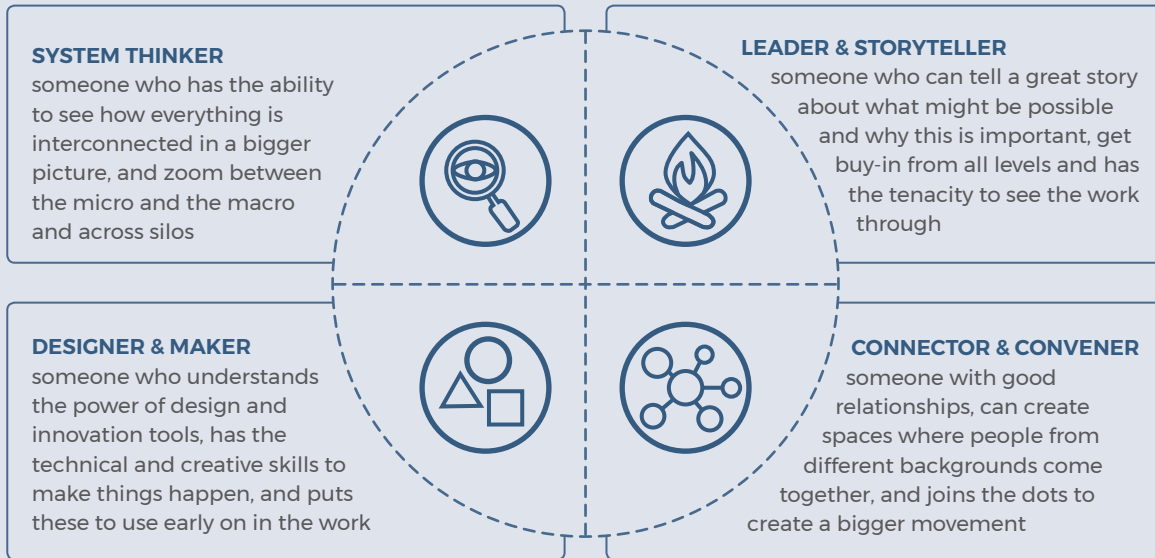
Figure 9   An African about-face
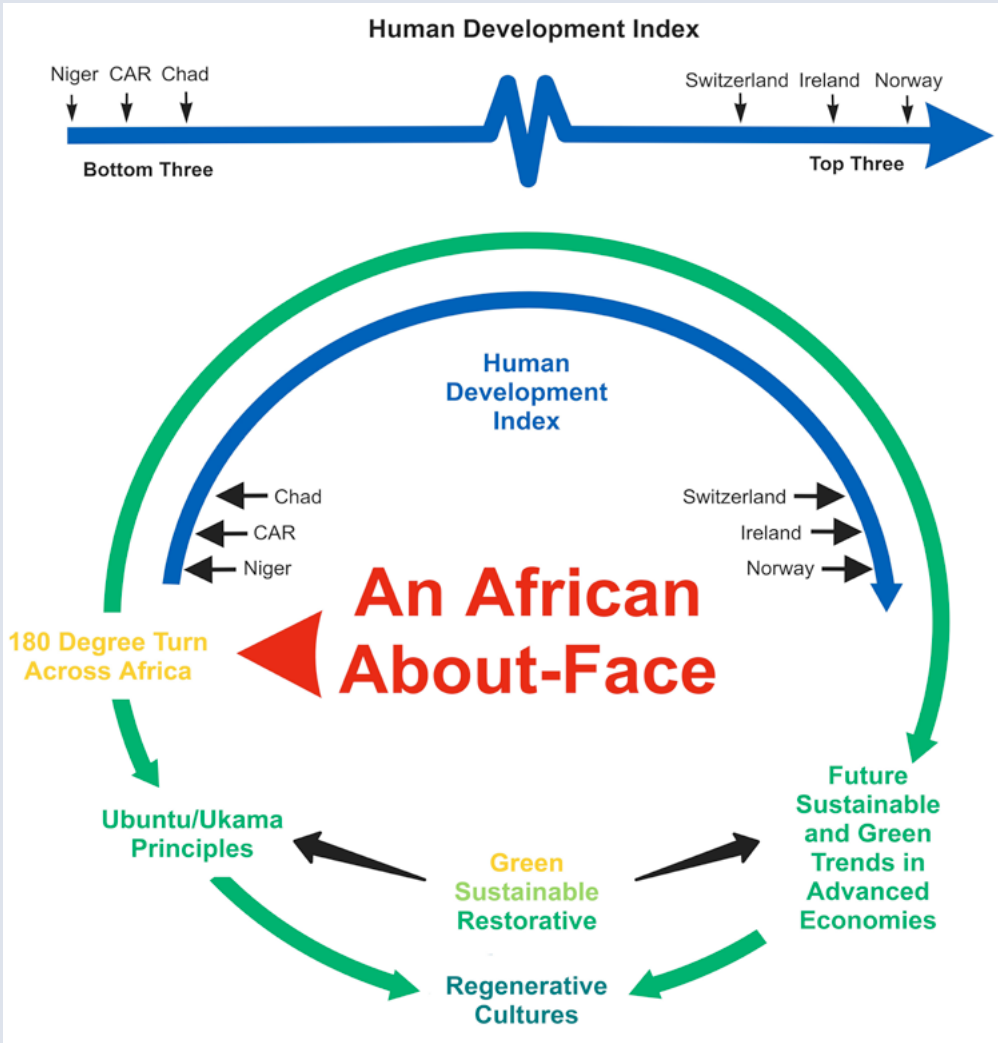
Source: Adapted by authors

6   **Utilise ecological design, biomimicry, speculative design and salutogenic design as innovative approaches to support future regenerative policies and strategies.**

Figure 10   Four charateristics of speculative design

SYSTEM THINKER
someone who has the ability to see how everything is interconnected in a bigger picture, and zoom between the micro and the macro and across silos

LEADER & STORYTELLER
someone who can tell a great story about what might be possible and why this is important, get buy-in from all levels and has the tenacity to see the work through

DESIGNER & MAKER
someone who understands the power of design and innovation tools, has the technical and creative skills to make things happen, and puts these to use early on in the work

CONNECTOR & CONVENER
someone with good relationships, can create spaces where people from different backgrounds come together, and joins the dots to create a bigger movement

Source: Luke Craven, 'The different strengths of systems thinkers,' *Pig on the Tracks*, June 1, 2021, https://pigontracks.substack.com/p/21-the-different-strengths-of-systems-thinkers

Ecological design[46] and biomimicry[47] rely on nature-inspired innovation to drive regenerative approaches. Figure 12 contains multiple components of these design approaches.[48] However, another related method is speculative design, which is a critical design practice that envisions how to design scenarios and related products and services to address challenges and opportunities arising in the future.[49] The UK's Design Council utilises four characteristics that thematically align with elements of CLA and systems-change models.[50] Figure 12 captures these four characteristics. As SADC member states develop future GI strategies, policies and projects, having individuals representing all four roles will be important, especially for those working with shifting mindsets and leveraging those points in a system for maximum impact.

46   Fan Shu-Yang et al., 'Principles and practice of ecological design,' *Environmental Reviews* 12, no. 2 (2004), https://www.researchgate.net/publication/263141750_Principles_and_practice_of_ecological_design.

47   Lazaara Ilieva et al., 'Biomimicry as a Sustainable Design Methodology – Introducing the 'Biomimicry for Sustainability' Framework,' *Biomimetics* 7, no. 2 (2022): 37, https://www.mdpi.com/2313-7673/7/2/37.

48   Daniel Christian Wahl, 'Join the Re-Generation! Designing Regenerative Cultures,' April 27, 2016, https://medium.com/insurge-intelligence/join-the-re-generation-designing-regenerative-cultures-77f7868c63cd.

49   Emily Whyman, 'Climate Past, Present and Future: History and foresight in Design for Planet,' June 30, 2022, https://medium.com/design-council/climate-past-present-and-future-history-and-foresight-in-design-for-planet-b3e787240699.

50   UK Design Council, 'Beyond Net Zero: A Systemic Design Approach', April 22, 2021, https://www.designcouncil.org.uk/our-work/skills-learning/tools-frameworks/beyond-net-zero-a-systemic-design-approach/#:~:text=The%20Systemic%20Design%20Framework%2C%20launched,at%20the%20heart%20of%20design.

Finally, salutogenic design is centred on the dynamic capacity of a community to cope, evolve and transform in response to inevitable disruptions or even disasters. Many of Africa's poorest and most marginalised communities actually have this capacity, but it is the larger socio-economic and governing systems that lack salutogenic design principles (as evidenced by Covid-19). GI strategies that employ salutogenesis will holistically nurture the systemic capacity and potential of positive regenerative cultures across the SADC region.[51]

7   **Go big and go small by rethinking current industrialisation practices in SADC.**

SADC member states need to pursue top-out and bottom-in approaches in their efforts at global, regional, state and local levels. Top-out refers to a proactive engagement with the world and global powers through emboldened foreign ministers from the AU, SADC, other RECs and national governments. Anthony Blinken (the US secretary of state), Sergey Lavrov (the Russian minister of foreign affairs) and Wang Yi (the Chinese foreign minister) all come to visit Africa but Africa holds the cards (in the form of natural resources and population), and the ball is in its court. Africa has contributed less to the climate crisis than any other continent, yet it is suffering and will continue to suffer some of the worst consequences of climate change. Africa also has an urgent need to industrialise in the face of population growth and accelerating urbanisation. The need to create economic well-being systems is paramount, which will entail going beyond just job creation for millions of youth in the coming decade. Heightened social unrest, triggered by ongoing unemployment and poverty, can derail even the best GI strategy. If a country like the DRC were to keep 10% of the cobalt that it exports to China, it could take part in the $5 billion global market for batteries, which incidentally is expected to grow to $46 billion within 10 years. While there is currently a strong demand for oil, it is expected to drop significantly in the coming decades; yet here is an opportunity for African nations to invest in the petrochemicals industry. A country like Angola could utilise its resources to convert a crude oil supply glut into products needed across Africa, thus following in the footsteps of Saudi Arabia, which is actively pursuing a future-informed economic diversification strategy.[52]

> Top-out refers to a proactive engagement with the world and global powers through emboldened foreign ministers from the AU, SADC, other RECs and national governments

51   Daniel Christian Wahl, 'Regenerative Futures: Redesigning.'
52   Tayire Isoun Gbadegesin, 'A Green Industrialization Strategy for Africa,' *Project Syndicate*, November 14, 2019, https://www.project-syndicate.org/commentary/africa-path-to-green-industrialization-by-tariye-isoun-gbadegesin-2019-11.

A bottom-in approach entails working in marginalised regions of SADC member states. Figure 6 captures the variation in poverty levels across the SADC region. GI strategies will likely occur in urban and peri-urban areas, leaving vast portions of southern Africa untouched by any industrialisation and manufacturing efforts. Contingency plans that can help alleviate climate change, conflict, migration and natural disasters will enable populations across SADC to remain resilient while simultaneously having the opportunity to participate in GI value chains.

> A bottom-in approach entails working in marginalised regions of SADC member states

8   **Learn to question the assumptions.**

Without questioning our worldview assumptions and the narrative that has shaped our culture, are we not likely to repeat the same mistakes over and over again?[53] Below are four key questions that re-examine some of SADC's green industrialisation approaches, strategies and policies.

• What are the dominant and core narratives driving SADC strategies, policies and actions as they relate to green, sustainable and regenerative concepts?

• How transformative can green industrialisation be for the SADC region if it functions within the same paradigm of development, ie, linear progress from primitive societies to industrialised, 'developed' societies?

• Is productivity and efficiency growth the only pathway to economic prosperity in Africa or SADC? Does a production era support a regenerative world, or do we create pathways for a new era, such as a distribution era?

• To what extent does the West lead decarbonisation narratives globally and to what extent can SADC conceptualise an extractive, 'green neo-colonialism' in the present day, where regions in Africa advance their own development by becoming a means to satisfy Europe's and China's decarbonised energy requirements?

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53   This is a common question posed by Daniel Christian Wahl, 'Living the Questions,' May 23, 2017, https://medium.com/age-of-aware ness/living-the-questions-why-change-the-narrative-now-a1b6d7d410cd.

Conclusion: Implications for the future

This policy insights challenged SADC's contemporary approaches to green industrialisation/economics by introducing several concepts and paradigms that prompt alternative ways to imagine industrial development and green economies. Regenerative well-being principles and approaches align well with Ubuntu, Ukama and other African IKS. This provides a powerful foundation for SADC and various stakeholders to leverage deeply entrenched African traditional values, practices and principles to stimulate flourishing ecosystems across southern Africa. The two systems-change models, in turn, helped to frame the conclusions and recommendations. The latter are not prescriptive, serving more as conversation starters to steer SADC member states' efforts to adopt regenerative principles in bringing about the economic well-being of the region as a whole.

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