



KPMG's Climate Risk Services

**KPMG's climate insights go beyond risk-
towards innovation, value creation and impact.**



South Africa is one of the most climate-vulnerable economies globally, identified as a climate change hotspot by the World Bank¹ and UN IPCC². In the past decade alone, extreme weather events have disrupted key economic sectors and exposed critical vulnerabilities. The 2015–2018 drought in the Western Cape threatened water supply for over 4 million people, placing pressure on agribusiness, manufacturing, and tourism. In 2022, floods in KwaZulu-Natal caused over R17 billion in infrastructure and property damage, halting port operations, disrupting supply chains and displacing more than 40,000 people³. Aging infrastructure, unreliable electricity and water systems, and inequality compound these risks — increasing operational downtime, insurance costs, and capital expenditure. As climate events grow in frequency and intensity, businesses face mounting exposure not just by way of physical losses, but also to regulatory, reputational, and market-based climate risks. A proactive risk assessment is now a business imperative.

What is a climate risk assessment?

A climate risk assessment describes the process to identify and assess **climate-related physical risks, and opportunities**.

The assessment involves analysing both:



Climate-related physical risks in own operations and along the upstream and downstream value chain. In particular, how assets and business activities may be exposed and are sensitive to climate related hazards such as fire, drought and flooding.



Climate-related transition risks and opportunities in own operations and along the upstream and downstream value chain. In particular, assessing how business activities are/will be exposed in the transition to a lower carbon economy. This could include identifying how changes in regulation, tax or consumer sentiment could effect the business.

Definitions:

Physical Risks: Physical Risks are risks which arise from the physical effects of climate change and environmental degradation (eg. catastrophic weather events)

Transition Risks: Transition risks result from the relative uncertainty created by the global shift towards a more sustainable, net-zero economy. This could include changes in regulation and policy, tax incentives, consumer behavior or other foreseen impacts on the business.



¹ World Bank country profile PDF
World Bank (2022) South Africa country profile. Report No. 15932-WB. Available at: <https://www.worldbank.org/>

² IPCC AR6 WGII Chapter 9
IPCC (Intergovernmental Panel on Climate Change) (2022) Chapter 9: Africa. In: H.-O. Pörtner, D.C. Roberts, M. Tignor et al. (eds.) Climate change 2022: Impacts, adaptation and vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press. Available at: <https://www.ipcc.ch/report/ar6/wg2/>

³ KwaZulu-Natal floods article from ScienceDirect (2022) 'Disaster management 'deeds' in the context of April 2022 KwaZulu-Natal floods: A scoping review', International Journal of Disaster Risk Reduction, Available at: <https://www.sciencedirect.com/>



Why perform a climate risk assessment?



1. Identify Vulnerabilities: Climate risk assessments can help organizations pinpoint areas where they are most vulnerable to climate-related physical hazards and transition factors, such as extreme weather events, rising sea levels, and temperature changes.

eg. climate risk assessments can help to assess the vulnerability of assets such as factories or crops to extreme weather events (e.g., floods, hurricanes) and long-term climate changes (e.g., rising sea levels).



2. Mitigate Risks: By understanding potential risks, organizations can develop strategies to mitigate them, reducing the likelihood of disruptions to operations, supply chains, and infrastructure.

eg. A mining company operating in a water-stressed region may identify its dependency on surface water as a critical vulnerability — prompting investment in water recycling technologies or alternate sources.



3. Ensure Compliance: Climate risk assessments support compliance with emerging climate-related regulations and disclosure frameworks by identifying material risks, controls, and data needed for credible reporting.

eg. Overseas exporters may require information on climate risk to ensure quality and identify opportunities for supply chain disruption.



4. Enhance Resilience: Assessments provide insights that enable organizations to build resilience against climate risks and position to capture opportunities, ensuring long-term sustainability and stability.

eg. Investing in flood barriers, drainage capacity, and pumping stations at high-risk locations. Allocate additional CAPEX covers infrastructure repair from extreme events.



5. Inform Strategic Planning: The insights gained from climate risk assessments can be integrated into strategic planning, helping organizations make informed decisions that align with their long term goals and climate objectives.

eg. Farmers may adjust crop choices or planting cycles based on future climate projections, reducing exposure to rainfall variability and increasing long-term production stability.



6. Protect Reputation: Proactively addressing climate risks demonstrates a commitment to sustainability, which can enhance an organization's reputation with customers, investors, communities and other stakeholders.

eg. Proactive engagement with local authorities and communities on flood risk or water scarcity enables coordinated response, builds trust, and strengthens an organisation's license to operate.



7. Access to Financing: Many investors and financial institutions are increasingly considering climate risks in their decision-making processes. A thorough assessment can improve access to sustainable financing options or reduce risk premiums.

eg. Companies with clear climate risk insights and mitigation plans are better positioned to secure green loans, sustainable financing, meet ESG ratings criteria, or attract impact-focused investors.



8. Competitive Advantage: Organisations that proactively manage climate risks — particularly transition related risks — can lead their sectors in innovation, compliance, and access to low-carbon markets.

eg. A manufacturer shifting to renewables and electrified fleets avoids future carbon costs, qualifies for green procurement tenders, and gains advantage over carbon-intensive competitors.

Navigating the complexities of climate risk requires a seasoned partner. KPMG's globally recognized Climate Risk-Opportunity Services combine deep industry knowledge with advanced analytics to deliver actionable strategies.

Key outputs of a KPMG climate risk assessment can include, but is not limited to:

Identification of Climate-Related Risks and Opportunities

- Categorization of physical risks (e.g. extreme weather, sea-level rise) and transition risks (e.g. policy changes, market shifts, technology disruption).
- Identification of opportunities, such as energy efficiency, low-carbon products, or access to green finance.

Materiality Assessment

- Determination of which risks and opportunities are material to the business based on their potential financial impact, likelihood, and time horizon (short, medium, long term).

Scenario Analysis Results

- Outcomes from climate scenario modelling (e.g. 1.5°C, 2°C, and 4°C pathways), showing how different climate futures could affect business strategy, operations, and financial performance.

Risk Exposure Mapping

- A clear mapping of climate risks across geographies, business units, and assets, highlighting vulnerable areas of the business.

Impact Assessment

- Evaluation of the potential financial and operational impacts of identified risks and opportunities, including revenue, costs, asset values, supply chains, and reputation.

Adaptation and Mitigation Measures

- Recommended or planned risk response actions, including adaptation strategies for physical risks and mitigation actions for transition risks.

Baseline Metrics and KPIs

- Quantitative outputs such as GHG emissions data, energy use, water risk exposure, or climate-related financial exposure—forming the basis for tracking performance over time.

Disclosure-Ready Information

- Structured outputs that align with frameworks like IFRS S2, enabling clear, investor-relevant disclosure across governance, strategy, risk management, and metrics/targets

Our accolades attest to our leadership in ESG and sustainability consulting. ***KPMG has been globally recognised as an ESG Leader.***

- **Verdantix Green Quadrant** has recognised KPMG as a global Leader in ESG and Sustainability Consulting.
- **ALM Intelligence** has recognised KPMG as a global market leader in ESG (Environmental, Social, and Governance). KPMG has been recognised in ALM's Pacesetter research reports for both ESG: Environmental and ESG: Social.
- Ranked as a worldwide leader in **ESG Program Management Services by IDC MarketScape**, noted for its strong service-adjacent software and sustained client impact.

Don't hesitate to reach out to our experts to get in touch with any queries or if you would like further information about our climate risk analysis.

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