

Leveraging Data for Climate Risk Assessment and Green Capital: A Case Study of the Africa Climate and Nature Data Platform (ACNDP)

Executive Summary

This paper provides a practical assessment of the Africa Climate and Nature Data Platform (ACNDP), an open-access tool intended to help financial institutions incorporate climate and nature-related risks into lending. Kenyan banks are adapting to growing climate vulnerability and regulatory measures, such as the Central Bank of Kenya's Climate Risk Disclosure Framework. These shifts raise challenges by accessing granular, decision-useful environmental data, particularly for serving Micro, Small, and Medium Enterprises (MSMEs) in climate-sensitive sectors. Physical risks, such as floods and droughts, are increasing MSMEs' loan default risks, aggravating the sector's longstanding credit gap.

Interviews with top Kenyan banks highlight unmet demand for platforms that convert complex scientific data into practical financial metrics, such as Probability of Default (PD) and Loss Given Default (LGD). Existing global tools lack the local granularity and direct banking applicability African institutions require. ACNDP addresses these needs by developing Africa-focused datasets on climate risks, biodiversity, and emissions, and by providing methodologies for integrating this information into bank credit risk models, with sector-specific dashboards for loan pricing, product development, and regulatory compliance.

The study recommends adopting shared data utilities like ACNDP as essential for scaling sustainable finance. Such platforms convert environmental data into actionable financial intelligence, lowering compliance costs and unlocking MSME capital. Regional cooperation and platform integration into supervision are also advised to advance financial stability and sustainable investment.

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1. Context

Kenya's financial sector faces heightened risk from climate-related events, as indicated by its ND-GAIN ranking of 152 out of 181 countries (ND-GAIN, the Notre Dame Global Adaptation Initiative, scores countries based on vulnerability to climate change and readiness to adapt). In response, regulations such as the Central Bank of Kenya's Climate Risk Disclosure Framework require financial institutions to manage these risks. Still, a key challenge persists: banks often lack accessible, relevant, and actionable environmental data necessary to properly assess and integrate climate risks into their strategies.

This data gap has severe consequences for Kenya's vital MSME sector, which forms the backbone of the economy. Many MSMEs operate in climate-sensitive sectors like agriculture. Agriculture alone contributes 21.8% of the GDP (KNBS, 2024). Construction is another climate-sensitive sector. Their heightened exposure to physical risks, such as floods and droughts, increases the probability of loan defaults. Financial institutions struggle to quantify this risk accurately. This exacerbates the pre-existing USD 19.3 billion credit gap for MSMEs. It stifles growth and investment where it's most needed.

The primary issue is the gap between raw climate data and its practical use in finance. Financial institutions require tools that convert complex climate data into usable risk metrics, such as Probability of Default (PD) and Loss Given Default (LGD). Current global platforms lack the localization, transparency, and ease-of-use needed by African institutions, especially smaller banks and microfinance providers. This situation highlights a need for a region-specific solution that aligns climate science with financial risk processes, supported by unified methodologies and funding frameworks.

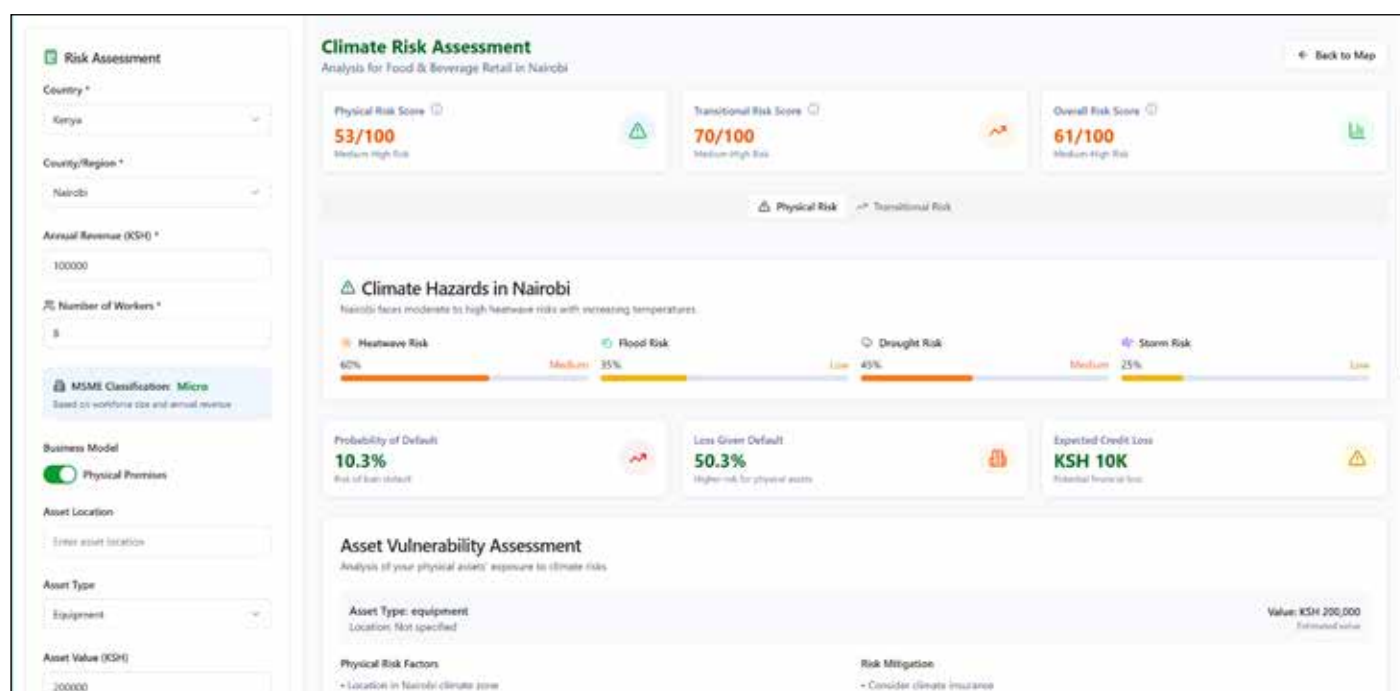
This situation underscores the urgent need for a platform like the Africa Climate and Nature Data Platform (ACNDP). It is designed for financial professionals who require trustworthy, data-backed insights without the burden of complex research. The use of data-driven solutions in decision-making is rapidly increasing, from 22% to 45% (Arshad et al., 2025). The demand for such innovations is clear. This case study will explore how user-friendly dashboards can provide accessible and actionable intelligence. These tools are essential to fill critical information gaps.

2. Methodology and Study Findings

To understand the practical needs of the Kenyan financial sector, this study employed a qualitative methodology centered on in-depth interviews with three leading commercial banks. This direct engagement was complemented by a comparative analysis of the Africa Climate and Nature Data Platform (ACNDP) against other data tools currently in use. This mixed-method approach allowed for a comprehensive assessment of existing data gaps, user requirements, and the specific challenges banks face when attempting to integrate climate risk into their operational frameworks.

1. **Note:** The Africa Climate and Nature Data Platform (ACNDP) is currently in its beta phase and available only to a select group of users. If you would like early access and to be part of the pilot group, please reach out through this [link](#).

Figure 1: Sample MSME dashboard for climate risk assessment



Source: MSME Dashboard for climate risk assessment on the Africa Climate and Nature Data Platform (ACNDP). This is a pre-alpha demo and is subject to change as the development of the platform evolves

The findings from the case study reveal a clear and urgent demand among Kenyan financial institutions for practical tools that translate complex environmental data into actionable financial intelligence. Interviews with three leading banks highlighted a range of specific, yet overlapping, requirements for any data platform to be successful.

Bank 1 emphasized the need for climate and nature data to directly inform key banking metrics such as Probability of Default (PD), Loss Given Default (LGD), and financed emissions. The institution stressed the importance of dashboards to map these risks by sector and location, and to have integrated scenario analysis functions. Critical requirements included full transparency on data sources and credibility, seamless API integration with core banking systems, and access to hyperlocal data to accurately assess risk at the asset level.

Bank 2 echoed the need for relevant banking metrics but requested expanded definitions and clearer explanations for terms such as ESG Compliance to ensure consistency. This bank specifically sought disaggregated data on financed emissions, hyperlocal data below the county level, and clarity on delivery formats (e.g., Excel, Power BI). Concerns were also raised around data security, automation, and the need for comprehensive documentation on all metric calculations and model specifications.

Bank 3, with its large manufacturing client base, pointed to the absence of clear methodologies for translating climate data into a climate-stressed PD. Data privacy was a central concern for this institution, which advocated for offline tools that would allow for internal data processing without uploading sensitive client information. They also requested functionalities to support sustainability and risk

reporting, including detailed, sector-specific risk and emissions profiles to better assess how client activities affect their loan portfolios.

A transparent and secure data platform is essential for modern banking, transforming raw data into credible financial intelligence that improves risk management and decision-making. In the African market, existing global platforms often fall short of these specific needs, creating a critical opportunity for a tailored solution like the ACNDP. The ACNDP's MSME dashboard helps unlock sustainable capital by providing a more accurate, sector-specific risk assessment. It synthesizes granular environmental data from a top-down perspective, effectively moving past the high-perceived risk often associated with these businesses and giving investors a credible, data-driven score. **Figure 1** below illustrates the MSME dashboard; input data is entered on the left, and the resulting output is displayed on the right.

The broader adoption of data platforms in banking requires a robust policy framework to ensure they are both effective and secure. These platforms can enhance compliance, personalize customer experiences, and detect fraud. Their full potential is only realized with strong data governance.

3. Policy Implications and Recommendations

The findings demonstrate that while regulatory instruments like Kenya's Green Finance Taxonomy and Climate Risk Disclosure Framework are essential steps, they are insufficient on their own. Their effectiveness is fundamentally constrained by the lack of accessible, consistent, and decision-useful environmental data. This creates a significant structural barrier, particularly for smaller banks, insurers, and pension funds that lack the resources to source and interpret complex scientific

datasets. The reliance on fragmented external data, proxies, and varying intensity factors hinders standardized risk assessment and compliance. Shared data utilities like the Africa Climate and Nature Data Platform (ACNDP) can help close this critical gap by curating scientific information and translating it into the financial metrics that supervisory bodies require, such as Probability of Default (PD) and Loss Given Default (LGD). Furthermore, the material risks posed by biodiversity loss, water scarcity, and land degradation in African economies necessitate a policy agenda that extends beyond emissions inventories to encompass a broader range of nature-related financial disclosures, aligning with global frameworks like the Taskforce on Nature-related Financial Disclosures (TNFD).

Considering these implications, this study proposes the following recommendations to foster a more resilient and sustainable financial system:

- 1. Recognize Shared Data Utilities as Critical Infrastructure:** Policymakers and regulators should formally recognize and support shared data utilities like the ACNDP as essential infrastructure. By providing a centralized, credible source of translated environmental data, these platforms reduce compliance costs, level the playing field for smaller institutions, and enhance the overall quality of climate and nature-related risk management across the financial sector.
- 2. Integrate Data Utilities into Supervisory Practices:** Supervisory bodies should develop clear guidance on the use of shared data utilities. This would involve setting common standards for data transparency, methodology

documentation, and updating frequencies, thereby strengthening the reliability and comparability of outputs without mandating a single provider or model.

- 3. Foster Regional Cooperation to Avoid Fragmentation:** To build domestic and international investor confidence, a harmonized regional approach is essential. We recommend fostering collaboration through forums like the Kenya Bankers Association research conference and joint projects among East and Southern African regulators. These efforts should aim to establish shared validation protocols and open reference datasets, creating a durable, Africa-focused information ecosystem.

4. References

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