



RESOURCE-BACKED LOANS AND CRITICAL MINERALS IN SOUTHERN AFRICA

A Comparative Study of Zimbabwe,
Zambia, Mozambique, Angola, South
Africa and Namibia

August 2026

The background of the cover is a photograph of a mining site. In the foreground, a large yellow and black excavator is positioned on the left, its arm extended. To its right, a yellow dump truck is shown, partially filled with dark material. The ground is uneven and covered with rocks and dirt. In the background, another piece of heavy machinery is visible, and the landscape is hilly and dusty. The overall scene depicts active mining operations.

JOHN P. MAKETO

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Acronyms

AFC	Africa Finance Corporation
CATIC	China National Aero-Technology Import & Export Corporation
CDB	China Development Bank
DFI	Development Finance Institution
DRC	Democratic Republic of the Congo
DSRA	Debt-Service Reserve Account
EITI	Extractive Industries Transparency Initiative
ENH	Empresa Nacional de Hidrocarbonetos (National Hydrocarbon Company of Mozambique)
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
ICBC	Industrial and Commercial Bank of China
IMF	International Monetary Fund
LNG	Liquefied Natural Gas
MCC	Millennium Challenge Corporation
NRGI	Natural Resource Governance Institute
PGMs	Platinum-Group Metals
PPP	Public-Private Partnership
RBL	Resource-Backed Loan(s)
SADC	Southern African Development Community
SDG(s)	Sustainable Development Goal(s)
SOE(s)	State-Owned Enterprise(s)
SPV	Special Purpose Vehicle
TAZARA	Tanzania-Zambia Railway Authority
US\$	United States dollar

Abstract

This comparative study examines the evolving relationship between resource-backed loans (RBLs), critical minerals, public debt management and sustainable development in six Southern African countries: Zimbabwe, Zambia, Mozambique, Angola, South Africa and Namibia. It applies a structured multiple-case study methodology combining transaction-level documentary analysis, public-debt evidence, creditor and project databases, international financial institution reports, government information and credible contemporary reporting. The analysis deliberately distinguishes confirmed sovereign or public-sector RBLs from quasi-RBLs, sovereign-guaranteed resource-project finance, collateralised but non-resource-backed borrowing, foreign direct investment and critical-mineral infrastructure finance. This distinction is essential because the evidence is highly asymmetric. Angola is the region's mature oil-backed borrower, while Zimbabwe has documented tobacco-, platinum- and diamond-backed loans and, in 2026, began exploring a new generation of mineral-backed infrastructure finance. Mozambique presents a boundary case through sovereign-guaranteed LNG financing whose repayment is linked to future LNG revenues. Zambia, Namibia and South Africa demonstrate that mineral dependence or strategic mineral importance does not automatically imply sovereign resource-backed borrowing. The study finds that RBLs can unlock infrastructure and investment where conventional finance is inaccessible, but can simultaneously subordinate future fiscal revenues, intensify commodity-price and exchange-rate exposure, obscure contingent liabilities and weaken intergenerational fiscal sovereignty where contracts are opaque or projects do not generate durable public value. The emerging critical-mineral transition is therefore producing not simply a repetition of the historical 'Angola model', but a broader mineral-finance-infrastructure-geopolitics nexus. The paper recommends a SADC-level responsible resource-backed financing framework built around full disclosure, parliamentary approval, independent resource valuation, debt-sustainability testing, SOE reporting, productive-use rules, beneficiation, revenue-retention safeguards, community protections and regional coordination.

Keywords

Resource-backed loans; critical minerals; sovereign debt; collateralisation; Angola; Zimbabwe; Zambia; Mozambique; Namibia; South Africa; China; debt sustainability; beneficiation; SDGs; intergenerational equity.

Executive Summary

Southern Africa is entering a new phase in the political economy of natural resources. The accelerating global demand for lithium, copper, graphite, uranium, manganese, platinum-group metals and associated logistics infrastructure is increasing the strategic value of the region's mineral base at the same time that many governments face high public debt, infrastructure gaps and constrained access to affordable long-term capital. The result is a renewed policy question: when, if ever, should a state pledge future natural-resource production or revenues to secure present financing?

The first major finding is that the six countries do not possess equivalent RBL exposure. The World Bank's empirical review identified 30 Sub-Saharan African RBLs signed between 2004 and 2018, worth US\$46.5 billion in its more restrictive dataset. Only Angola and Zimbabwe from this six-country sample appear in that verified list. A broader Natural Resource Governance Institute dataset identified 52 RBLs across Africa and Latin America worth US\$164 billion, including US\$66 billion in Africa. These different totals reflect definitional and dataset choices rather than a contradiction: both underscore that RBLs are concentrated, complex and poorly disclosed.

Angola is the mature regional archetype. Its 2004 US\$2 billion China Eximbank facility linked infrastructure finance to oil-sale proceeds; additional oil-backed facilities followed, including a US\$2.5 billion ICBC facility for Kilamba Kiaxi and a US\$15 billion China Development Bank oil-prepayment facility signed in 2015. The latter required assignment of oil-related receivables and a substantial debt-service reserve account, and was subsequently reprofiled in 2020 with repayment mechanics adjusted again in 2024.

Angola's experience shows both the infrastructure additionality of RBLs and the vulnerability created when debt service, fiscal revenues and exports are all tied to the same volatile commodity.

Zimbabwe is the clearest mineral-backed case. Documented transactions comprise a US\$110 million tobacco-sales-receivable facility for rural electrification in 2004; a US\$200 million agricultural facility in 2006 collateralised by platinum deposits; and an approximately US\$98 million diamond-linked facility in 2011. In June 2026 Zimbabwe's finance minister confirmed discussions with China Railway over resource-backed financing for roads and railways, potentially using future mineral revenues in a context dominated increasingly by lithium. The proposal is not yet a completed RBL and must therefore be treated as an emerging exposure rather than booked debt.

Mozambique is a boundary case. The core RBL datasets do not classify it as a conventional RBL borrower, yet the state hydrocarbon company ENH has sovereign-guaranteed participation debt whose repayment is structured around future LNG revenues.

Given Mozambique's severe debt pressures and the large role of ENH liabilities, this quasi-RBL architecture is material for fiscal risk even if it is not labelled an RBL. Zambia, Namibia and South Africa are useful counterfactuals: all are strategically important mineral economies, but this review did not verify comparable sovereign mineral-backed loan portfolios. Their critical-mineral finance is more often structured as grants, project finance, corporate borrowing, FDI, concessional climate finance or corridor investment.

The comparative evidence supports a central proposition: RBL use is driven not by resource abundance alone but by the interaction of resource wealth with financing exclusion, institutional capacity, infrastructure needs, lender risk management and the political incentive to monetise future revenues. The emerging critical-mineral economy may therefore produce 'RBL 2.0': hybrid arrangements in which mineral revenues, railway and power infrastructure, offtake contracts, processing plants, escrow accounts and public guarantees become interconnected even where no document is formally labelled a resource-backed loan.

The study recommends that Southern African governments assess RBLs through an intergenerational conversion test. A non-renewable natural asset should only be pledged where independently appraised, transparently procured investment is expected to create durable public assets and social returns at least commensurate with the discounted value of the future resource revenue surrendered. This should be backed by a SADC framework requiring contract disclosure, legislative approval, independent mineral valuation, debt-sustainability stress testing, SOE and guarantee disclosure, productive-use and beneficiation tests, revenue-retention floors, environmental and community safeguards, and regional coordination.

Headline Findings

- **Confirmed RBL exposure is highly concentrated:** Angola is the dominant mature case, while Zimbabwe has a smaller but unusually diverse set of resource-backed structures.
- Zimbabwe's 2026 mineral-backed infrastructure talks are the strongest evidence in the six-country sample of a possible transition from historic RBLs to critical-mineral-backed public finance.
- Mozambique demonstrates that RBL-like fiscal risk can arise through sovereign guarantees and resource-project cash-flow structures even where conventional RBL classification is not met.
- Zambia's copper corridors show that critical minerals can organise infrastructure finance geopolitically without the mineral itself becoming sovereign collateral.
- Namibia and South Africa show that mineral abundance need not result in RBL dependence where investment, project finance, domestic capital markets and concessional finance provide alternatives.
- RBL fiscal risk is magnified where the same commodity drives exports, government revenue, foreign-exchange earnings and collateral repayment.
- Transparency is not a secondary governance issue: incomplete disclosure makes valuation, debt recording, parliamentary oversight, contingent-liability monitoring and development-impact assessment materially harder.
- Development impact should be judged through contribution and public-value analysis, not by loan repayment alone.



1. INTRODUCTION

Resource-Backed Finance and the New Critical-Mineral Political Economy

Resource-backed loans sit at the intersection of two persistent development problems: resource-rich states often possess valuable assets but lack the liquid capital required to transform those assets into infrastructure, public services and productive capacity; lenders, meanwhile, are willing to provide finance but demand credible repayment mechanisms. RBLs bridge this gap by linking a public borrowing obligation to natural-resource production, resource-sale receivables, development rights or future resource revenues.

EITI guidance treats RBLs as arrangements in which governments or state-owned enterprises obtain finance in exchange for, or collateralised by, future streams of natural-resource production or income. The World Bank's empirical work identifies four broad collateral architectures: resource-sales receivables, resource-sales prepayments, resource-development access and direct resource collateral. The practical boundaries, however, are contested. A sovereign-guaranteed LNG loan repaid from project revenues may generate similar fiscal risks to an RBL while technically remaining project finance; an infrastructure loan secured by an escrow account is collateralised borrowing but is not necessarily resource-backed; and foreign investment in a mine is not public debt at all.

This classification problem becomes more important in the critical-mineral era. The global energy transition, battery economy, digital systems, advanced manufacturing and defence supply chains are intensifying demand for copper, lithium, graphite, uranium, manganese, nickel, cobalt, rare earths and platinum-group metals. Southern Africa possesses many of these resources, while simultaneously facing major infrastructure and financing gaps. The temptation to pledge future mineral revenues is therefore likely to increase. The study asks whether Southern Africa is moving from a first generation of oil-, diamond-, tobacco- and platinum-backed lending toward a second generation in which critical minerals are embedded in broader financing packages for railways, roads, power, processing and industrial corridors. It further asks whether such arrangements can support structural transformation or instead convert long-term mineral sovereignty into short-term fiscal liquidity.

2. Methodology and Data

The study uses a comparative multiple-case study design with a political-economy orientation. The primary unit of analysis is the resource-backed or resource-linked financing transaction, nested within each country's public debt system, mineral economy, development strategy and institutional framework. The approach is predominantly qualitative, supported by descriptive quantitative evidence on transaction values, public debt and project scale.

The research relies on structured desk review because the research questions concern specialised financial arrangements for which large household or public surveys would add limited value. Sources were triangulated across the World Bank, IMF, EITI, Natural Resource Governance Institute, AidData, Boston University Global Development Policy Center, national authorities, creditor/project documentation where available, academic studies and high-quality contemporary reporting. Search evidence was cut off on 10 August 2026.

Instrument 1 the RBL Transaction Inventory was used to capture country, agreement year, borrower, lender, original value, resource, financing model, collateral, purpose, terms, status and evidence confidence. Instrument 4 the standard Country Case Study Template was used to structure all six country chapters consistently. This improves comparability while preserving differences in national context.

2.1 Classification Protocol

Level	Classification	Operational test
0	No identifiable public RBL	Conventional sovereign borrowing, FDI, corporate finance or mineral investment with no public resource pledge
1	Resource-linked investment	Finance or investment economically associated with mining/mineral corridors but no sovereign resource security
2	Quasi-RBL / resource-revenue public exposure	Public or sovereign-guaranteed debt serviced substantially from resource-project revenues
3	Resource-revenue secured public borrowing	Public debt with earmarked resource revenues, escrow or receivables
4	Commodity prepayment / offtake-backed public borrowing	Advance finance repaid through designated commodity sales/offtake
5	Direct resource collateral / resource-development access	Undeveloped reserves or resource rights directly secure or support public borrowing

2.2 Evidence Confidence

- **High:** transaction existence and key structure verified in an official, World Bank/IMF/EITI/AidData or similarly authoritative source.
- **Medium–High:** transaction is well evidenced, but one or more terms such as exact collateral, rate, outstanding balance or purpose remain incomplete.
- **Medium:** credible secondary sources converge but contract or primary documentation is unavailable.
- **Low:** proposal, allegation or media report without executed agreement; retained only where relevant to emerging-risk analysis.

2.3 Methodological Merits

- Cost-effective and executable under limited time and travel budgets.
- Transaction-centred analysis avoids treating all Chinese loans, mining investments or infrastructure finance as RBLs.
- Structured comparison allows six diverse political economies to be analysed using common questions.
- Triangulation reduces dependence on any one government, creditor or advocacy narrative.
- Historical and contemporary evidence connects earlier commodity-backed borrowing to emerging critical-mineral finance.

2.4 Limitations

Public information remains incomplete. RBL contracts may contain confidentiality clauses, side letters, escrow arrangements, guarantees, security interests and pricing formulas that are not disclosed. Consequently, an absence of publicly verified RBL evidence cannot be interpreted as proof that no resource-linked security exists.

The study does not claim causal attribution from a loan to national SDG outcomes. Macroeconomic performance and social indicators are shaped by numerous factors. The analysis therefore uses contribution, plausibility and public-value reasoning rather than econometric causal claims.

Transaction values are not always additive. Master facilities may refinance older debts, be only partly disbursed, contain sub-loans or overlap with project-level records. This is particularly important in Angola. The study therefore distinguishes conservative minimum quantified exposure from full portfolio claims.



3. Regional Landscape

Debt, Resource Dependence and Critical Minerals

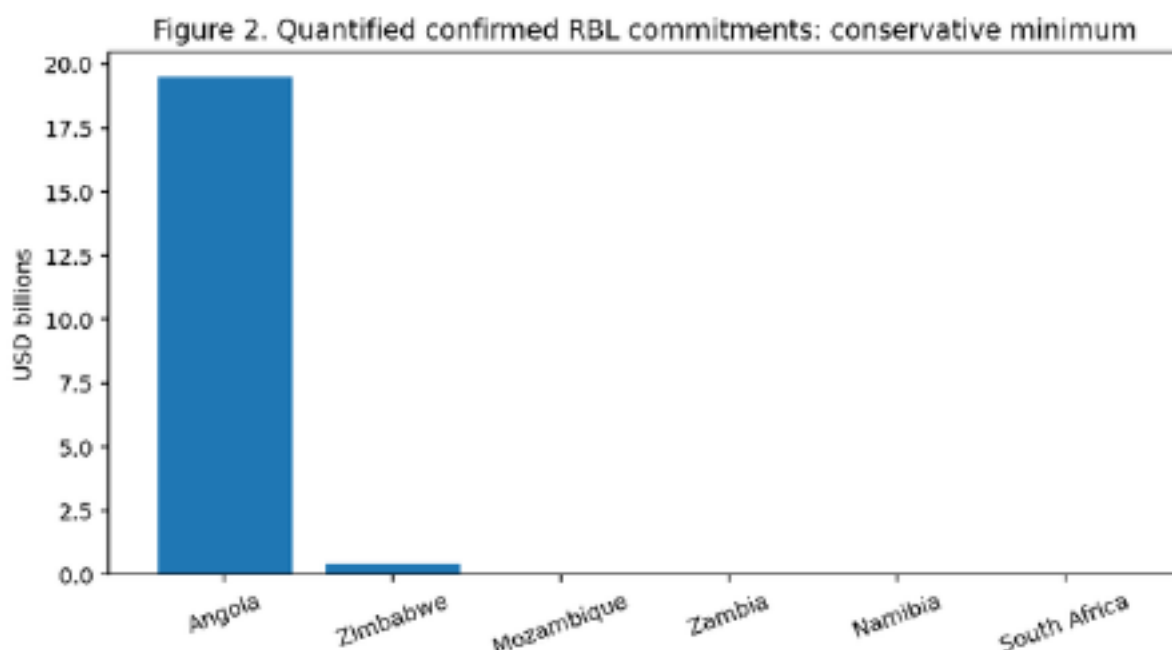
The World Bank's restrictive dataset identified 30 RBLs signed in Sub-Saharan Africa between 2004 and 2018 worth US\$46.5 billion, about 8% of new external borrowing over that period on a broad comparison. Angola accounted for nearly half of that total. The broader NRGi dataset identified 30 African RBLs within a global dataset of 52 transactions and estimated African RBL value at US\$66 billion. The difference reflects dataset methodology, treatment of facilities and available information, but both sources show substantial concentration in a small group of borrowers.

The rationale for an RBL is strongest where a borrower is credit-constrained but possesses a commodity that generates reliable foreign-currency revenue. Oil is therefore disproportionately represented in historical RBL datasets. Yet the critical-mineral transition is altering the asset base on which financiers and governments negotiate. Zimbabwe's lithium, Zambia's copper, Mozambique's graphite and LNG, Namibia's uranium and South Africa's PGMs and manganese are increasingly embedded in infrastructure and industrial-finance strategies.

This emerging nexus is broader than RBLs. The Lobito Corridor, for example, links Angola's Atlantic infrastructure to copper and cobalt supply chains in Zambia and the DRC through project and development finance rather than sovereign mineral collateral. China's planned or ongoing support to TAZARA similarly illustrates how the economic logic of a railway can be mineral-driven without the financing contract pledging copper. The analytical lesson is that the mineral-finance relationship should be studied as a spectrum.



Africa's resource-backed loans reached up to **US\$66 billion**, with a small group of borrowers accounting for the bulk of transactions.



Note: Angola is a conservative minimum, not a full portfolio total. Values are not directly comparable to quasi-RBL/project-finance exposures.

Conservative minimum uses only clearly quantified strict RBL facilities included in this study; it deliberately avoids summing uncertain or overlapping Angola facilities.

4. ZIMBABWE

Zimbabwe's public debt reached US\$23.3 billion in 2024—72.9% of GDP—while external arrears stood at US\$7.4 billion.



4.1 Political-economy and resource context

Zimbabwe combines rich mineral endowments with constrained access to concessional and conventional external finance. Gold, platinum-group metals, diamonds, chrome and lithium are central to its export economy. The IMF's 2025 Article IV reported consolidated public-sector debt of US\$23.3 billion in 2024 and projected US\$23.7 billion in 2025, while external arrears remained a central obstacle to re-engagement. This financing constraint is directly relevant to the political economy of RBLs: resource security can become a substitute for sovereign creditworthiness.

4.2 Historical RBL architecture

Three confirmed RBLs are identified in the World Bank dataset. In 2004 CATIC provided US\$110 million to ZESA for rural electrification equipment, secured by tobacco sales receivables. The transaction is analytically important because the lender was not seeking tobacco production itself; tobacco served as a dependable foreign-exchange cash flow. In 2006 China Eximbank provided a US\$200 million buyer's credit for agricultural inputs and equipment, with the Selous and Northfields platinum deposits reported as direct resource collateral. World Bank evidence describes this as an unusual case of still-in-the-ground mineral collateral. In 2011 Zimbabwe contracted an approximately US\$98 million China Eximbank facility linked to diamond-related revenues.

4.3 Critical-mineral transition

In June 2026 Finance Minister Mthuli Ncube confirmed that Zimbabwe was exploring resource-backed financing with China Railway for roads and railways. Future mineral revenues were explicitly discussed as part of the repayment logic. The talks coincide with rapid Chinese investment in Zimbabwe's lithium sector, greater pressure for domestic processing and the need to rehabilitate freight corridors serving mining regions. Because no executed contract, amount or final collateral package was public by the study cut-off, this is classified as a proposed RBL rather than existing public debt.

4.4 Debt and development assessment

Zimbabwe's case presents unusually high prospective RBL risk. First, external arrears and limited financing alternatives can weaken bargaining power. Second, direct collateralisation of undeveloped mineral reserves creates valuation and intergenerational risks. Third, infrastructure linked to mining can generate substantial productivity gains only if the network serves the wider economy rather than functioning primarily as an extraction corridor. Any new RBL should therefore be subject to independent mineral valuation, project appraisal, parliamentary approval and public disclosure before effectiveness.

4.5 TRANSACTION INVENTORY

Year	Borrower	Lender/financier	Quantum	Resource/security	Form	Purpose	Classification	Evidence
2004	ZESA	CATIC	US\$110m	Tobacco sales receivables	Resource-sales receivables	Rural electrification equipment	Confirmed RBL	High
2006	Government	China Eximbank	US\$200m	Selous and Northfields platinum deposits	Direct resource collateral	Agricultural inputs/equipment and irrigation	Confirmed RBL	High
2011	Government	China Eximbank	~US\$98m	Diamond-related revenue	Resource-linked repayment	Public/project financing	Confirmed RBL	Medium-High
2026	Government (proposed)	China Railway / Chinese financiers	Not yet public/agreed	Future mineral revenues, with lithium central to context	Proposed mineral-backed infrastructure finance	Road and railway rehabilitation	Proposed / under discussion	High (talks); Low (final terms)

Interpretive note: transaction entries include non-RBL comparators where they help establish the boundary between sovereign RBL exposure and resource-linked investment/project finance. Values should not be summed mechanically where master facilities refinance earlier loans or contain subsidiary facilities.

5. ANGOLA

Angola's US\$2 billion 2004 China Eximbank facility was serviced by oil sales equivalent to about 10,000 barrels per day and financed at least 50 post-war reconstruction projects.



5.1 The mature oil-backed model

Angola is the dominant Southern African RBL case and one of the most significant globally. The model arose in the context of post-war reconstruction needs, oil dependence and constrained conventional financing. In 2004 Angola signed a US\$2 billion China Eximbank infrastructure credit line. World Bank evidence indicates that proceeds from sales equivalent to about 10,000 barrels of oil per day were deposited into an offshore account to service the facility. The line financed at least 50 projects spanning schools, hospitals, power, water, equipment and vehicles.

5.2 Expansion and complexity

Oil-backed borrowing expanded through further Eximbank facilities in 2007 and a 2009 master facility, a US\$2.5 billion ICBC loan to Sonangol for Kilamba Kiaxi in 2010, and a US\$15 billion CDB oil-prepayment facility in 2015. AidData describes the 2015 arrangement as secured through assignment of Sonangol's offtake rights, a collection account and a minimum debt-service reserve account of approximately US\$1.5 billion. Part of the facility recapitalised Sonangol and refinanced earlier CDB exposure, while other proceeds funded public investment.

5.3 Restructuring and fiscal stress

The central weakness of the model is the concentration of risks in one commodity. Oil drives exports, fiscal revenue, foreign-exchange earnings and the collateral mechanism. The fall in oil prices after 2014 and later shocks placed severe pressure on public finances. In 2020 the CDB facility was reprofiled with principal deferrals, and in 2024 the repayment mechanics were modified to release more monthly liquidity while retaining a minimum escrow balance. These adjustments show that collateral reduces lender risk but does not eliminate sovereign liquidity risk.

5.4 Signs of a post-RBL transition

By 2026 Sonangol was discussing a US\$4.8 billion Chinese loan for the Lobito refinery while explicitly stating that oil collateral was not envisaged. Angola is also central to the Lobito Corridor, supported by a US\$553 million U.S. DFC loan to the rail concession consortium and wider project finance. These developments suggest a shift from pledging oil revenues toward financing based on projects, infrastructure cash flows and diversified strategic positioning.

5.5 Transaction inventory

Year	Borrower	Lender/financier	Quantum	Resource/security	Form	Purpose	Classification	Evidence
2004	Government	China Eximbank	US\$2.0bn	Oil sales receivables	Resource-sales receivables / infrastructure credit line	Post-war reconstruction; at least 50 projects including schools, hospitals, power, water and equipment	Confirmed RBL	High
2007	Government	China Eximbank	Not consistently reported in core dataset	Oil	Oil-backed credit facility	Infrastructure programme	Confirmed RBL	High (existence); Medium (terms)
2007	Government	China Eximbank	Not consistently reported in core dataset	Oil	Oil-backed credit facility	Infrastructure programme	Confirmed RBL	High (existence); Medium (terms)
2009	Government	China Eximbank	US\$6.0bn master facility	Oil prepayment	Master Loan Facility / oil prepayment	Multiple infrastructure projects	Confirmed RBL	High
2010	Sonangol	ICBC	US\$2.5bn	Oil-sale proceeds	Resource-sales receivables	Kilamba Kiaxi New Town housing	Confirmed RBL	High
2015	Government / on-lent to Sonangol	China Development Bank	US\$15.0bn	Oil offtake receivables + escrow	Oil-prepayment facility	Sonangol recapitalisation/refinancing and public investment	Confirmed RBL	High
2026	Sonangol (proposed)	Chinese financial institutions	US\$4.8bn sought	None pledged	Conventional/project-linked loan	Lobito refinery	Non-RBL financing under discussion	High

Interpretive note: transaction entries include non-RBL comparators where they help establish the boundary between sovereign RBL exposure and resource-linked investment/project finance. Values should not be summed mechanically where master facilities refinance earlier loans or contain subsidiary facilities.

6. ZAMBIA

Zambia received US\$12.7 billion in Chinese lending through 111 loans, but no confirmed sovereign copper-backed RBL is identified in the World Bank dataset.



6.1 Copper economy and debt context

Zambia's copper endowment makes it an obvious candidate for resource-backed borrowing, yet the evidence requires caution. AidData reports US\$12.7 billion of Chinese lending through 111 loans between 2000 and 2023, but the World Bank's RBL list does not identify Zambia as a confirmed sovereign copper-backed RBL borrower. Some public infrastructure loans contain escrow or other collateral arrangements, but collateralised finance is not resource-backed unless a natural-resource stream is specifically pledged.

6.2 Critical minerals without copper collateral

Zambia illustrates a different pathway. The country is seeking to expand copper output sharply and is at the centre of competing transport-corridor strategies. In 2026 the United States and Zambia expanded the use of a US\$491 million MCC grant programme to support agricultural and critical-mineral infrastructure in the Lobito Corridor. The Africa Finance Corporation was simultaneously preparing a US\$3–5 billion financing round for new Lobito rail links, while China-backed TAZARA rehabilitation offers an eastern route to the coast. These flows are mineral-linked because their commercial and geopolitical rationale depends on copper and cobalt logistics, but they are not RBLs under the strict definition.

6.3 Public-debt implications

Zambia's 2020 sovereign default demonstrates that mineral wealth alone cannot guarantee debt sustainability. IMF-supported restructuring has improved the outlook, but public debt remains a central macroeconomic constraint. The future RBL risk lies in the possibility that ambitious copper-output targets create pressure to pre-commit expected mineral revenues. Zambia's stronger option is to finance corridors and power systems through diversified project, grant, concessional and equity structures that preserve copper fiscal revenues for the budget.

6.4 Transaction inventory

Year	Borrower	Lender/financier	Quantum	Resource/security	Form	Purpose	Classification	Evidence
2010	Public entities / government	Chinese official lenders	Portfolio context: US\$12.7bn via 111 loans, 2000–2023	No verified copper pledge for portfolio	Conventional/collateralised infrastructure finance	Energy, transport and other infrastructure	Not classified as RBL	High
2026	Project/SPV / public partners	MCC, AFC and multiple financiers	US\$491m MCC programme; Lobito financing target US\$3–5bn	Copper/cobalt corridor economic, not pledged collateral	Grant/project finance/resource-linked infrastructure	Lobito Corridor and critical-mineral infrastructure	Non-RBL comparator	High

Interpretive note: transaction entries include non-RBL comparators where they help establish the boundary between sovereign RBL exposure and resource-linked investment/project finance. Values should not be summed mechanically where master facilities refinance earlier loans or contain subsidiary facilities.

7. MOZAMBIQUE

Mozambique's ENH LNG financing carries up to US\$2.25 billion in sovereign-guaranteed debt, with repayment linked directly to future LNG revenues.

7.1 LNG as a boundary case

Mozambique does not appear in the core World Bank list of conventional RBL borrowers, but the structure of ENH's participation in the Area 1/Golfinho LNG project presents RBL-like fiscal characteristics. The state hydrocarbon company required debt financing backed by a sovereign guarantee with a ceiling of up to US\$2.25 billion, and IMF documentation indicates that ENH debt contracts provide for repayment directly from LNG revenues once production begins. The arrangement is therefore classified as quasi-RBL/resource-revenue-linked sovereign-guaranteed project finance.

7.2 Why the distinction matters

The classification is more than semantic. A sovereign guarantee can convert project underperformance into a public obligation, while direct repayment from future LNG cash flows pre-commits resource revenue that might otherwise enter the budget. Mozambique's recent debt assessments make this particularly material: public debt was around 91% of GDP in 2025 and 2026 international assessments described the debt position as unsustainable or severely distressed, with ENH liabilities a major component.

7.3 Graphite and the next financing frontier

Mozambique is also a strategically important graphite producer. A Chinese-owned 200,000-tonne-per-year graphite processing plant opened in January 2026 following reported investment of about US\$200 million, and a new mining law introduced a 15% state stake and local-processing requirements. These are investment and industrial-policy measures rather than RBLs. The risk, however, is that expectations of future LNG and graphite receipts could become the basis for new public borrowing before revenues materialise.

7.4 Transaction inventory

Year	Borrower	Lender/fiancier	Quantum	Resource/security	Form	Purpose	Classification	Evidence
2019	ENH / sovereign-guaranteed participation	Project-finance lenders	Guarantee ceiling up to US\$2.25 bn	Future LNG revenues	Resource-revenue-linked sovereign-guaranteed project finance	ENH participation in Area 1/Golfinho LNG	Quasi-RBL / boundary case	High
2026	Private investor	Private/Chinese investment	US\$200 m investment reported	Graphite	FDI/project investment – not public debt	200,000 tpa graphite processing plant	Non-RBL comparator	High

Interpretive note: transaction entries include non-RBL comparators where they help establish the boundary between sovereign RBL exposure and resource-linked investment/project finance. Values should not be summed mechanically where master facilities refinance earlier loans or contain subsidiary facilities.

8. NAMIBIA

Namibia's uranium sector has attracted substantial Chinese financing, but no major sovereign RBL has been verified in the core datasets.



8.1 Mineral wealth without sovereign RBL dependence

Namibia is rich in uranium, diamonds and prospective critical minerals, but no major sovereign RBL comparable to Angola or Zimbabwe was verified in the core datasets. Chinese involvement in uranium has largely taken the form of equity, acquisition and corporate/project finance. AidData records substantial financing around Husab uranium, but the borrowing structures were corporate rather than Namibian sovereign debt.

8.2 Fiscal and strategic context

Namibia's mineral relationship with China has deepened: Reuters reported in July 2026 that uranium accounted for about 85% of the US\$1.3 billion in Namibian goods purchased by China in the previous year and that Chinese firms had invested about US\$4.2 billion in Namibia, overwhelmingly in metals. Namibia has also restricted exports of unprocessed critical minerals and is developing frameworks for prospective oil, gas and green hydrogen. The IMF has emphasised natural-resource management and sovereign-wealth-fund governance as these prospects grow.

8.3 Counterfactual lesson

Namibia demonstrates that a resource-rich state can attract capital through FDI and project structures without pledging sovereign mineral revenues. This preserves fiscal flexibility, though it does not eliminate other risks such as profit repatriation, tax leakage, enclave development or weak local value addition. Prospective RBL risk should therefore be monitored as infrastructure needs and oil/mineral prospects increase

8.4 Transaction inventory

Year	Borrower	Lender/financier	Quantum	Resource /security	Form	Purpose	Classification	Evidence
2012	Corporate project vehicle	Chinese/international banks	Husab-related corporate financing exceeded US\$1bn	Uranium project assets/off take	Corporate/project finance	Husab uranium acquisition/development	Non-sovereign; not public RBL	High
2026	Corporate project vehicle	Chinese/international banks	Investment/deal values vary	Uranium and other critical minerals	Investment/infrastructure cooperation	Mining, energy and infrastructure	Non-RBL / prospective exposure	High

Interpretive note: transaction entries include non-RBL comparators where they help establish the boundary between sovereign RBL exposure and resource-linked investment/project finance. Values should not be summed mechanically where master facilities refinance earlier loans or contain subsidiary facilities.

9. SOUTH AFRICA

South Africa's government debt was near 78% of GDP in 2025, yet no major sovereign RBL was verified, reflecting stronger access to diversified domestic and conventional financing.



9.1 A diversified-finance counterfactual

South Africa holds globally significant platinum-group metals, manganese, chrome and other minerals, yet no major sovereign resource-backed loan was verified. The country's deeper domestic capital markets, banking system, institutional investors and diversified creditor base provide alternatives to mineral collateralisation. This does not mean public debt is low—the IMF reported gross government debt near 78% of GDP in 2025—but the financing architecture is fundamentally different.

9.2 Critical-mineral partnerships

In April 2026, Germany agreed a €200 million concessional climate loan for South Africa's grid and renewable energy investment, alongside expanded cooperation on critical minerals, green hydrogen, and battery value chains. The EU also launched a critical-mineral investment roadshow in South Africa while Pretoria pressed for more domestic processing. The important distinction is that mineral cooperation and sovereign/concessional finance occur in parallel without the mineral being pledged to repay the loan.

9.3 Regional lesson

South Africa suggests that greater financial market depth and diversified sources of capital improve a government's ability to separate public borrowing from mineral ownership. For the region, this supports policies that expand domestic institutional finance, development bank capacity, blended finance, and transparent project finance as alternatives to resource collateral.

9.4 Transaction inventory

Year	Borrower	Lender/fi nancier	Quantum	Resource /security	Form	Purpose	Classifica tion	Evidence
2026	Government/public programmes	Germany/ EU	€200m concessional climate loan + >€270m green hydrogen/batt ery support	Critical- mineral cooperatio n but no pledge	Concessio nal sovereign/ climate finance	Grid, renewables, green hydrogen and battery value chains	Non-RBL comparat or	High

Interpretive note: transaction entries include non-RBL comparators where they help establish the boundary between sovereign RBL exposure and resource-linked investment/project finance. Values should not be summed mechanically where master facilities refinance earlier loans or contain subsidiary facilities.

10. Comparative Analysis: Six Countries, Different Models

The comparative evidence rejects the proposition that critical-mineral abundance automatically results in resource-backed sovereign debt. Instead, RBL use appears to reflect a combination of credit access, institutional capability, fiscal stress, project financing needs, creditor preferences and the state’s willingness to pre-commit future revenues.

ANNEX B. COMPARATIVE DATASET

Country	Strategic resources	RBL exposure	Dominant financing architecture	Creditor/investor pattern	Debt vulnerability	Transparency/governance concern	Prospective RBL risk	Analytical type
Angola	Oil; emerging corridor role for copper/cobalt logistics	Very high/mature	Oil receivables, prepayment, escrow/DSRA	Chinese policy/commercial banks	High; 2020 reprofiling and 2024 repayment changes	Moderate–High	High	Mature RBL case
Zimbabwe	Tobacco, platinum, diamonds; lithium increasingly strategic	High historic; re-emerging	Receivables, direct mineral collateral; proposed future mineral revenues	China Eximbank, CATIC; proposed China Railway-linked finance	Very high given arrears and restricted financing access	High	Very high	Emerging critical-mineral RBL case
Mozambique	LNG, graphite	Boundary/quasi-RBL	Sovereign-guaranteed project debt repaid from LNG revenues	International project lenders	Very high / debt unsustainable in 2026 assessments	High	High	Quasi-RBL / contingent-liability case
Zambia	Copper, cobalt corridor potential	Low under strict definition	Escrow/collateralised infrastructure in some cases; minerals not proven pledged	Chinese lenders; US/EU/African corridor finance	High but improving after restructuring	Moderate	Moderate	Resource-linked infrastructure case
Namibia	Uranium, diamonds, lithium/rare earth prospects	No major sovereign RBL verified	FDI and corporate/project finance	China and diversified investors	Moderate	Moderate–Low	Low–Moderate	Counterfactual / investment-led case
South Africa	PGMs, manganese, chrome, battery/green-hydrogen value	No major sovereign RBL verified	Domestic-market, concessional and project finance	Domestic markets, EU/Germany, DFIs	Moderate; rising debt but deep markets	Moderate–Low	Low–Moderate	Counterfactual / diversified-finance case

10.1 Seven Comparative Findings

RBL use is driven as much by financing exclusion as by resource abundance. Angola and Zimbabwe relied on resource security in periods when access to conventional finance was constrained. Namibia and South Africa show that valuable mineral endowments can coexist with non-RBL financing.

Stable foreign-currency revenue is the strongest form of collateral. Oil and tobacco are attractive because they already produce recurring export receipts. Direct collateralisation of undeveloped mineral deposits introduces substantially greater valuation uncertainty.

SOEs are central channels of fiscal risk. Sonangol, ZESA and ENH show that public risk can be generated outside the central government balance sheet and subsequently migrate to the sovereign.

Critical minerals are changing the financing ecosystem rather than merely recreating oil-backed loans. Corridor finance, processing facilities, strategic offtakes, public guarantees, FDI, blended finance and development-bank lending are all becoming part of the mineral-finance nexus.

Infrastructure is the bridge between minerals and debt. Railways, ports, electricity and roads can unlock resource production. This creates a circular risk if a state borrows against minerals to build extraction infrastructure and then uses most mineral revenues to repay the infrastructure.

Collateral protects creditors more effectively than it protects borrowers. Angola's restructuring history shows that even heavily secured facilities can create sovereign liquidity stress when commodity prices and production disappoint.

The developmental test is asset conversion, not repayment. The key question is whether a depleting natural asset is converted into public infrastructure, industrial capacity, human development and resilient fiscal revenues of equal or greater long-term value.

11. RBLs, Public Debt Management and the Sustainable Development Goals

RBLs can create genuine development additionality. Infrastructure credit lines can accelerate investment in roads, power, water, hospitals, schools and housing where projects would otherwise remain unfunded. Angola provides the clearest evidence in this sample. Such investment can contribute to SDG 7 (energy), SDG 8 (growth and employment), SDG 9 (infrastructure and industrialisation) and, indirectly, poverty reduction.

The same arrangement can undermine development where debt service crowds out social expenditure, creditors capture future resource revenues, projects have weak economic returns or extractive corridors fail to generate domestic value addition. The fiscal opportunity cost is therefore broader than the contractual interest rate. It includes the present value of future public revenue surrendered and the policy flexibility lost when revenue streams are locked into escrow or off-budget repayment mechanisms.

SDG 16 is especially important. RBLs are complex and often negotiated across finance ministries, SOEs, resource companies, contractors and external lenders. If contracts and guarantees are not disclosed, citizens and parliaments cannot assess the valuation of resources, debt terms, procurement, beneficial ownership, project performance, or contingent liabilities. Transparency is therefore part of debt sustainability, not an optional governance add-on.

For critical minerals, the development test must extend to beneficiation and industrial policy. A lithium-backed railway that primarily lowers the cost of exporting unprocessed ore can be economically useful but is developmentally inferior to financing that also enables domestic processing, power reliability, industrial skills, supplier development, and regional value chains.

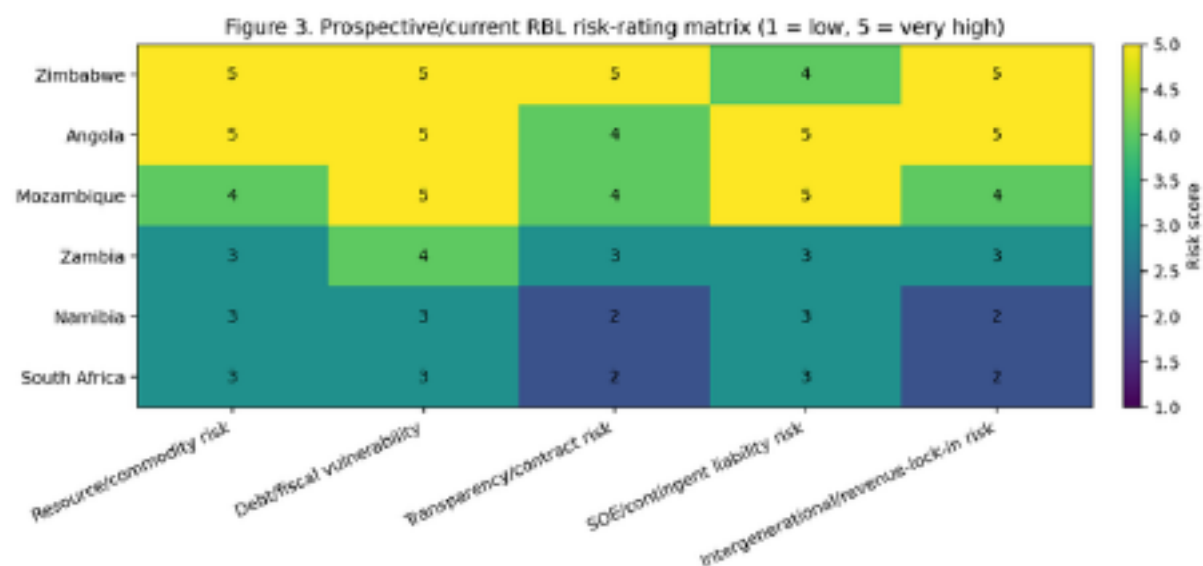


“Debt sustainability is not only about the interest rate; it is also about the future public revenues and policy choices surrendered to service the debt.”

SDG	RBL linkage	Suggested assessment
SDG 1 – No Poverty	Potential via infrastructure/jobs; risk via fiscal crowding-out	Assess distribution of benefits and social-spending opportunity cost
SDG 3 & 4 – Health/Education	RBL infrastructure can support services; high debt service can squeeze recurrent budgets	Track social expenditure before/after major debt-service peaks.
SDG 7 – Affordable & Clean Energy	Strong potential where RBL/project finance expands power	Assess tariff, reliability, emissions and access outcomes
SDG 8 – Decent Work & Growth	Potential through infrastructure/mining value chains	Measure local employment, supplier participation and productivity
SDG 9 – Industry & Infrastructure	Most direct positive pathway	Test whether assets are productive and nationally integrated
SDG 10 – Reduced Inequality	Depends on spatial and fiscal distribution	Assess who bears extraction costs and who receives benefits
SDG 12/13 – Responsible Production/Climate	Critical-mineral projects can enable transition but create local environmental costs.	Apply lifecycle, water, carbon and rehabilitation safeguards.
SDG 16 – Strong Institutions	High relevance because RBL opacity can weaken accountability	Publish contracts, guarantees, escrow rules and SOE obligations
SDG 17 – Partnerships	Potential for diversified finance and technology transfer	Avoid exclusive arrangements that weaken bargaining flexibility

12. RBL Risk-Rating Framework

The risk matrix is designed as a policy-screening tool rather than a credit rating. Scores range from 1 (low) to 5 (very high) across five dimensions: resource/commodity risk; debt and fiscal vulnerability; transparency and contract risk; SOE/contingent liability risk; and intergenerational/revenue lock-in risk. For countries without confirmed RBLs, the score represents prospective exposure should RBL borrowing emerge, not an assertion of an existing hidden RBL portfolio.



Scores are comparative research judgements based on the evidence reviewed; they should be validated through country interviews and updated when contracts or debt data change.

Country	Resource/c ommodity risk	Debt/fiscal vulnerability	Transparency /contract risk	SOE/contin gent liability risk	Intergenera tional/reve nue-lock-in risk	Average score	Rating
Zimbabwe	5	5	5	4	5	4.8	Very High
Angola	5	5	4	5	5	4.8	Very High
Mozambique	4	5	4	5	4	4.4	Very High
Zambia	3	4	3	3	3	3.2	Moderate
Namibia	3	3	2	3	2	2.6	Low– Moderate
South Africa	3	3	2	3	2	2.6	Low– Moderate

12.1 Interpretation by Country

Zimbabwe – Very High: historical direct mineral collateral, severe external-financing constraints and a live 2026 proposal for future mineral-revenue financing create the highest prospective risk in the sample.

Angola – Very High/High: a very large historic oil-backed exposure, creditor-controlled repayment mechanisms, and repeated restructurings demonstrate realised fiscal risk, although recent financing signals indicate a shift away from oil collateral.

Mozambique – High: large sovereign-guaranteed resource-project liabilities combine with severe public-debt stress and prospective LNG revenue dependence.

Zambia – Moderate: no verified sovereign copper-backed RBL portfolio, but high debt history and rapidly expanding copper infrastructure create future exposure if mineral-revenue pledges are introduced.

Namibia – Low–Moderate: current evidence is dominated by FDI and corporate finance; risk rises if future oil/mineral revenues become collateral for sovereign infrastructure borrowing.

South Africa – Low–Moderate: deep domestic markets and diversified financing reduce the need for RBLs, although high public debt and infrastructure needs mean the option cannot be ruled out.

13. Toward a Southern African Framework for Responsible Resource-Backed Financing

1. Full pre-effectiveness disclosure. Publish loan agreements, collateral/security documents, guarantees, offtake terms, repayment waterfalls, escrow rules, fees and project lists before first disbursement, subject only to narrowly justified commercial redactions.

2. Parliamentary authorisation. Require explicit legislative approval for any borrowing that commits future sovereign natural-resource revenue, mineral rights or production.

3. Independent resource valuation. Commission independent reserve, price, extraction-cost and fiscal valuation under downside, base and upside commodity scenarios.

4. Debt-sustainability and liquidity stress testing. Model commodity-price, production, exchange-rate, interest-rate and delay shocks, including contingent liabilities and SOE debt.

5. Unified SOE debt reporting. Bring national oil, mining, power and infrastructure SOEs into consolidated public-sector debt reporting and fiscal-risk statements.

6. Productive-use rule. Prohibit RBLs for recurrent expenditure except in exceptional, legislatively approved emergencies; prioritise long-lived productive public assets.

7. Beneficiation and structural-transformation test. Require financed infrastructure to support domestic processing, diversified firms, skills and regional value chains rather than only raw-material evacuation.

8. Fiscal revenue-retention floor. Set a maximum share of projected resource revenue that can be assigned to secured debt service so that essential public expenditure remains protected.

9. Community, climate and environmental safeguards. Apply social and environmental impact assessment, free and meaningful consultation, land and resettlement safeguards, water-risk management and mine-closure obligations.

10. Competitive financing and procurement. Benchmark RBL terms against concessional, bond, PPP, project-finance and blended-finance alternatives and competitively procure contractors wherever possible.

11. Regional coordination. Develop SADC principles to reduce destructive competition among member states offering mineral concessions or revenue pledges for finance.

12. Public-value audit. Require ex-post audits comparing the value of resources/revenues surrendered with asset quality, economic returns, service outcomes and SDG contribution.

14. Conclusion

The evidence does not support a simplistic verdict that all resource-backed finance is inherently exploitative or inherently developmental. RBLs can mobilise infrastructure funding in circumstances where ordinary sovereign finance is unavailable, and Angola demonstrates that such facilities can produce tangible public assets. However, the same case demonstrates that resource collateral can bind debt service to the country's dominant export commodity, intensify liquidity stress and narrow fiscal flexibility when prices fall.

The six-country comparison shows that Southern Africa faces multiple financing models rather than a single RBL trajectory. Angola represents the mature oil-backed model; Zimbabwe combines historic resource collateral with the clearest emerging critical-mineral RBL proposal; Mozambique represents sovereign-guaranteed resource-revenue exposure; Zambia represents mineral-driven corridor finance without verified copper collateral; and Namibia and South Africa illustrate investment-led and diversified-finance alternatives.

The policy issue is consequently not only who owns Southern Africa's minerals, but who acquires first claim over the future revenues generated by them. Critical minerals strengthen the region's bargaining position only if governments avoid prematurely surrendering that bargaining power through opaque, under-valued or weakly appraised financial commitments.

The study's central intergenerational principle is therefore straightforward: a non-renewable natural asset should be pledged only where the transaction transparently converts that asset into durable public value that is at least commensurate with the future revenue surrendered. Anything less risks turning strategic mineral wealth into temporary fiscal liquidity while leaving future citizens with depleted assets, restricted revenues and continuing debt obligations.

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ANNEX A. DETAILED COUNTRY-BY-COUNTRY TRANSACTION INVENTORY

Country	Year	Borrower	Lender/financier	Quantum	Resource/securi-ty	Financing form	Purpose	Classificati-on	Indicative terms/structure	Evidence confidence
Angola	2004	Government	China Eximbank	US\$2.0bn	Oil sales receivables	Resource-sales receivables/infras-tructure credit line	Post-war reconstruction; at least 50 projects including schools, hospitals, power, water and equipment	Confirmed RBL	Reported oil-sale proceeds equivalent to 10,000 bpd into offshore repayment account; early literature reports LIBOR + 1.5%; long tenor.	High
Angola	2007	Government	China Eximbank	Not consistently reported in core dataset	Oil	Oil-backed credit facility	Infrastructure programme	Confirmed RBL	Publicly available terms incomplete	High (existence); Medium (terms)
Angola	2007	Government	China Eximbank	Not consistently reported in core dataset	Oil	Oil-backed credit facility	Infrastructure programme	Confirmed RBL	Publicly available terms incomplete	High (existence); Medium (terms)
Angola	2009	Government	China Eximbank	US\$6.0bn master facility	Oil prepayment	Master Loan Facility/oil prepayment	Multiple infrastructure projects	Confirmed RBL	AidData reports an estimated 3.6708% interest rate, a 17.5-year maturity, and a 2.5-year grace period.	High
Angola	2010	Sonangol	ICBC	US\$2.5bn	Oil-sale proceeds	Resource-sales receivables	Kilamba Kiayi New Town housing	Confirmed RBL	Repaid from proceeds of Angolan oil sales to Sinopec	High
Angola	2015	Government / on-lent to Sonangol	China Development Bank	US\$15.0bn	Oil offtake receivables + escrow	Oil-prepayment facility	Sonangol recapitalisation/refinancing and public investment	Confirmed RBL	12-year facility; receivables assignment, collection account and ~US\$1.5bn minimum DSRA; reprofiled in 2020 and repayment mechanics amended in 2024	High
Angola	2026	Sonangol (proposed)	Chinese financial institutions	US\$4.8bn sought	None pledged	Conventional/project-linked loan	Lobito refinery	Non-RBL financing under discussion	Sonangol explicitly stated oil collateral is not envisaged	High
Zimbabwe	2004	ZESA	CATIC	US\$110m	Tobacco sales receivables	Resource-sales receivables	Rural electrification equipment	Confirmed RBL	Repayment from tobacco sales receivables; lender sought revenue certainty rather than tobacco access	High

Country	Year	Borrower	Lender/financier	Quantum	Resource/securi-ty	Financing form	Purpose	Classificati-on	Indicative terms/structure	Evidence confidence
Zimbabwe	2006	Government	China Eximbank	US\$200m	Selous and Northfields platinum deposits	Direct resource collateral	Agricultural inputs/equipment and irrigation	Confirmed RBL	Reportedly rights to part of potential platinum reserves pledged until cash repayment; fixed rate reported up to 2% in World Bank sample	High
Zimbabwe	2011	Government	China Eximbank	~US\$98m	Diamond-related revenue	Resource-linked repayment	Public/project financing	Confirmed RBL	Public details incomplete	Medium–High
Zimbabwe	2026	Government (proposed)	China Railway / Chinese financiers	Not yet public/agreed	Future mineral revenues, with lithium central to context	Proposed mineral-backed infrastructure finance	Road and railway rehabilitation	Proposed / under discussion	Finance minister confirmed talks; project structure and collateral not yet public.	High (talks); Low (final terms)
Mozambique	2019	ENH / sovereign-guaranteed participation	Project-finance lenders	Guarantee ceiling up to US\$2.25bn	Future LNG revenues	Resource-revenue-linked sovereign-guaranteed project finance	ENH participation in Area 1/Golfinho LNG	Quasi-RBL / boundary case	IMF reports ENH debt contracts structured for repayment directly from LNG revenues after production	High
Mozambique	2026	Private investor	Private/Chinese investment	US\$200m investment reported	Graphite	FDI/project investment — not public debt	200,000 tpa graphite processing plant	Non-RBL comparator	No sovereign resource pledge identified	High
Zambia	2010	Public entities/government	Chinese official lenders	Portfolio context: US\$12.7bn via 111 loans, 2000–2023	No verified copper pledge for portfolio	Conventional/collateralised infrastructure finance	Energy, transport and other infrastructure	Not classified as RBL	Some loans use escrow/security structures, but resource linkage must be demonstrated transaction-by-transaction	High
Zambia	2026	Project/SPV / public partners	MCC, AFC and multiple financiers	US\$491m MCC programme; Lobito financing target US\$3–5bn	Copper/cobalt corridor economics, not pledged collateral	Grant/project finance/resource-linked infrastructure	Lobito Corridor and critical-mineral infrastructure	Non-RBL comparator	Mineral logistics justify infrastructure economics; no sovereign copper collateral identified.	High

Country	Year	Borrower	Lender/financier	Quantum	Resource/security	Financing form	Purpose	Classification	Indicative terms/structure	Evidence confidence
Namibia	2012	Corporate project vehicle	Chinese/international banks	Husab-related corporate financing exceeded US\$1bn	Uranium project assets/offtake	Corporate/project finance	Husab uranium acquisition/development	Non-sovereign; not public RBL	Borrower not Namibian sovereign; important classification boundary	High
Namibia	2026	Government/private investors	Chinese partners	Investment/deal values vary	Uranium and other critical minerals	Investment/infrastructure cooperation	Mining, energy and infrastructure	Non-RBL / prospective exposure	No verified sovereign mineral-backed loan identified	High
South Africa	(2026).	Government/public programmes	Germany/EU	€200m concessional climate loan + >€270m green hydrogen/battery support	Critical-mineral cooperation but no pledge	Concessional sovereign/climate finance	Grid, renewables, green hydrogen and battery value chains	Non-RBL comparator	Mineral cooperation and financing coexist without mineral collateral	High

ANNEX B. COMPARATIVE DATASET

Country	Strategic resources	RBL exposure	Dominant financing architecture	Creditor/investor pattern	Debt vulnerability	Transparency/governance concern	Prospective RBL risk	Analytical type
Angola	Oil; emerging corridor role for copper/cobalt logistics	Very high/mature	Oil receivables, prepayment, escrow/DSRA	Chinese policy/commercial banks	High; 2020 reprofiling and 2024 repayment changes	Moderate–High	High	Mature RBL case
Zimbabwe	Tobacco, platinum, diamonds; lithium increasingly strategic	High historic; re-emerging	Receivables, direct mineral collateral; proposed future mineral revenues	China Eximbank, CATIC; proposed China Railway-linked finance	Very high given arrears and restricted financing access	High	Very high	Emerging critical-mineral RBL case
Mozambique	LNG, graphite	Boundary/quasi-RBL	Sovereign-guaranteed project debt repaid from LNG revenues	International project lenders	Very high / debt unsustainable in 2026 assessments	High	High	Quasi-RBL / contingent-liability case
Zambia	Copper, cobalt corridor potential	Low under strict definition	Escrow/collateralised infrastructure in some cases; minerals not proven pledged	Chinese lenders; US/EU/African corridor finance	High but improving after restructuring	Moderate	Moderate	Resource-linked infrastructure case
Namibia	Uranium, diamonds, lithium/rare earth prospects	No major sovereign RBL verified	FDI and corporate/project finance	China and diversified investors	Moderate	Moderate–Low	Low–Moderate	Counterfactual / investment-led case
South Africa	PGMs, manganese, chrome, battery/green-hydrogen value chains	No major sovereign RBL verified	Domestic-market, concessional and project finance	Domestic markets, EU/Germany, DFIs	Moderate; rising debt but deep markets	Moderate–Low	Low–Moderate	Counterfactual / diversified-finance case

ANNEX C. RISK SCORING DATASET

Country	Resource/comm odity risk	Debt/fiscal vulnerability	Transparency/contract risk	SOE/contingent liability risk	Intergenerational/revenue -lock-in risk	Average score	Rating
Zimbabwe	5	5	5	4	5	4.8	Very High
Angola	5	5	4	5	5	4.8	Very High
Mozambique	4	5	4	5	4	4.4	Very High
Zambia	3	4	3	3	3	3.2	Moderate
Namibia	3	3	2	3	2	2.6	Low-Moderate
South Africa	3	3	2	3	2	2.6	Low-Moderate

Scoring note: 1 = low risk; 2 = low-moderate; 3 = moderate; 4 = high; 5 = very high. The matrix is an analytical screening tool, not a sovereign credit rating.

ANNEX D. VALIDATION QUESTION

1. For each identified transaction, can the borrower or Ministry of Finance confirm the original commitment, disbursement, outstanding balance, interest, maturity, grace period, security and repayment waterfall?
2. Was the transaction approved by Parliament or another statutory authority and is the approval/guarantee publicly available?
3. What independent valuation was undertaken for any mineral reserve, production stream or revenue pledge?
4. How is the liability recorded in public debt statistics, including SOE debt and sovereign guarantees?
5. What public asset or service was produced, at what final cost, and what evidence exists of economic and social returns?
6. What share of future resource revenues is legally or practically unavailable to the budget because of debt-service arrangements?
7. What commodity-price, production, exchange-rate and project-delay stress tests were performed before contracting?
8. How do proposed critical-mineral financing arrangements compare with concessional, project-finance, PPP, bond, grant and equity alternatives?
9. What local beneficiation, employment, procurement, technology-transfer and community benefits are contractually protected?
10. What changes would be required for SADC countries to adopt a common responsible resource-backed financing standard?



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