



THE METANOMICS SERIES

Paper IV · NVM-WP 2026/04 · August 2026

THE FISCAL ARCHITECTURE OF ABUNDANCE¹

Resource Rents, Regressive Taxation and the Recovery of Africa's Own Revenue

The Metanomics Series · Sovereign Finance and Institutional Design · Paper IV

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Prepared at the Nile Valley Haven · Delivered at the Nile Valley Multiversity, Techiman · August 2026

¹ **Suggested citation:** Alagidede, Y.I.P. (2026) 'The Fiscal Architecture of Abundance: Resource Rents, Regressive Taxation and the Recovery of Africa's Own Revenue', The Metanomics Series, Paper IV, Nile Valley Multiversity Working Paper Series, NVM-WP 2026/04. Pungu Telania, Navrongo: Porthologos Press for the Nile Valley Multiversity.

Prepared at the Nile Valley Haven, Techiman, and delivered at the Nile Valley Multiversity, Techiman, Bono East Region, Ghana, in August 2026. The Metanomics Series is the sequel to The Omnidox Lectures, Three Provocations on the Study of Abundance: The Philosophy of Abundance: Scarcity on Trial, the Invisible Mycelium, and the Foundations of Metanomics (Paper I, NVM-WP 2026/01); The Psychology of Abundance: The Inner Architecture of Metanomics (Paper II, NVM-WP 2026/02); and The Architecture of Abundance: The Kassena Granary and the Building of Sovereign Capital (Paper III, NVM-WP 2026/03). The lectures establish the premises used here; the series carries them into the applied domains of public finance, external capital, the reparatory ledger and infrastructure capital, and comprises The Fiscal Architecture of Abundance (Paper IV, NVM-WP 2026/04), on resource rents and domestic revenue; The Reciprocity Principle (Paper V, NVM-WP 2026/05), on external capital; The Ledger of Return (Paper VI, NVM-WP 2026/06), on the reparatory ledger; and The Architecture of Bankability (Paper VII, NVM-WP 2026/07), on the legal coding of infrastructure capital. The series continues in The Omnidox Operating System, NVM-WP 2026/08, on resource-backed money and sovereign ledgers, and Doing Business in Africa, NVM-WP 2026/09, on enterprise on the continent. Nile Valley Multiversity working papers are circulated to invite comment and are not refereed. Comments are welcome to the correspondence address above.

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ABSTRACT

African states are taxing the wrong base. The average tax-to-GDP ratio across 38 African countries was 16.1% in 2023 against 33.9% in the OECD, and goods and services taxes supplied 51.2% of everything collected. A continent holding roughly 30% of the world's mineral reserves raises most of its public revenue from the consumption of people who spend everything they earn. This paper argues that the failure is a misdirection of the instrument rather than a shortage of capacity, and measures it in four quantities. The base is invisible: extractive revenues are not systematically identified in national revenue classifications. It leaks: 321 to 474 tonnes of artisanal gold, up to 41% of continental production and worth up to US\$35 billion a year, goes undeclared. It is shifted: illicit flows run at US\$88.6 billion, 3.7% of GDP, with 77% of the extractive component in gold alone. And it is given away: tax expenditures average about 3% of GDP while some 30% of sub-Saharan states hold no inventory of them. Adjusted for overlap, the leakage equals between a third and a half of total tax revenue. Rent is then established as the efficient, equitable and administrable base that consumption is not; the fiscal contract objection is answered by relocating accountability from the source of a revenue to its visibility and the rule on its disposal; and a 7-instrument rent recovery stack is specified. Two demonstrations carry the weight. Botswana captured mineral revenues equal to about 95% of mineral rents between 1983 and 2014, through information instruments rather than rates. Ghana, within 18 months, repealed its most regressive levies, formalised the artisanal gold channel and replaced a flat 5% royalty with a price-linked scale. The central proposition is that rent capture is an information contest before it is a rate contest, and that what Africa lacks is institutional wealth: the funded, legally protected capacity to know what it owns and what has been taken.

Keywords: Domestic resource mobilisation; economic rent; mineral royalties; resource rent tax; regressive taxation; illicit financial flows; tax expenditures; sovereign wealth funds; fiscal contract; Metanomics.

JEL: H21 · H23 · H26 · H27 · Q32 · Q38 · O23 · O55 · F38

1. Introduction: The Wrong Base

There are two facts about African public finance that sit side by side and are almost never set against each other. The first is that the average tax-to-GDP ratio across the 38 countries covered by Revenue Statistics in Africa was 16.1% in 2023, against 19.6% in Asia and the Pacific, 21.3% in Latin America and the Caribbean and 33.9% across the OECD, and that the level was below 15% in 20 of the 38. The second is that Africa holds an estimated 30% of the world's mineral reserves, 40% of its gold deposits, about 90% of its chromium and platinum group metals, some 12% of proven oil reserves and 8% of natural gas. A continent sitting on that endowment collects a smaller share of its output in tax than any other region on earth and raises 51.2% of what it does collect from taxes on goods and services, of which value added tax alone supplies 26.6%.

The conventional reading of the first fact is a capacity problem: African administrations are weak, the informal sector is large, compliance is poor, and the remedy is to broaden the base, digitise collection and raise rates. Considerable effort and considerable donor money have gone into that programme, and it has produced an increase in the Africa

average of 1.4 percentage points over the decade from 2013 to 2023. At that rate of progress, the continent reaches the current Latin American average around 2060 and the current OECD average shortly after the middle of the next century.

This paper offers a different reading. The problem is not principally that African states tax too little. It is that they tax the wrong thing. They levy heavily on consumption, on transactions and on the wages of the formally employed, which is to say on activity that is elastic, that is politically costly to reach, that is administratively expensive to police and that falls hardest on those with the least. They levy lightly, opaquely and inconsistently on economic rent, which is to say on the surplus generated by assets that nobody produced and that cannot move, and which is the one base that economic theory has agreed for two centuries can be taxed without distorting anything. The endowment is not missing from the ledger because it does not exist. It is missing because nobody wrote the line.

That last statement is not rhetorical. The joint publication of the OECD, the African Union Commission and the African Tax Administration Forum records, in its own methodological discussion, that extractive-related revenues are not systematically identified in African national revenue classifications. The largest single rent in most resource-dependent African economies does not appear as an auditable, comparable category in the accounts that ministries of finance and their creditors actually use. This is the fiscal expression of the finding advanced in the first Omnidox lecture: the accounts record the fruit and are silent about the roots.

The argument proceeds in 11 further sections. Section 2 states the antecedent framework compactly so that this paper stands alone. Section 3 reviews seven bodies of scholarship, identifies five gaps and states eight contributions against them. Section 4 conducts the fiscal trial in four demonstrations and produces a consolidated estimate of the leakage. Section 5 sets out the rent base that is already present, in four families. Section 6 makes the analytical case for rent over regression on six criteria, and meets the fiscal contract objection directly. Section 7 specifies the 7-instrument rent recovery stack. Section 8 examines the Ghanaian demonstration and states plainly what it has and has not achieved. Section 9 develops the institutional wealth argument from the Botswana record. Section 10 treats the international layer. Section 11 meets 6 objections. Section 12 concludes. An evidence dossier and a full reference list follow.

2. Antecedents: The Omnidox Framework and the Fiscal Question

There are four results that are load-bearing here, three from the Omnidox Lectures (Alagidede, 2026a, 2026b, 2026c) and 1 from the companion working paper on infrastructure finance that closes this series (Alagidede, 2026d), and are stated compactly for readers who have not read them.

The scarcity taxonomy distinguishes three things that the discipline collapses into 1. Relative scarcity is the local fact that a chooser at a moment cannot have everything at once; it is real, universal and trivial. Absolute scarcity is the thermodynamic and

ecological limit of a finite planet; it is real, it is not trivial, and it must be honoured. Manufactured scarcity is want produced by rules, enclosures, permissions and austerity that human institutions wrote and could rewrite. The fiscal crisis examined here belongs entirely to the third category, and the paper concedes the second without qualification: a tonne of ore extracted is a tonne that will not be extracted again, which is precisely why the intergenerational rule of section 7 is not optional.

The two operating systems. Monodox organises economic life around the premise that there is never enough and treats the allocation of a fixed stock as the whole of the problem. Omnodox begins from sufficiency as the normal condition of a network that understands its own architecture and takes the central task to be the design of the relationships through which renewing wealth is created, circulated and shared. Applied to public finance, the contrast is exact. The Monodox treasury asks how much more it can extract from a population it treats as a fixed stock of taxable transactions. The Omnodox treasury asks what surplus its territory already generates, who is currently capturing it, and by what rule it should be shared.

The mycelial mechanism supplies the design principles. A generative network redistributes from surplus toward need, keeps the system rather than any node in balance, senses deficiency and corrects it by reciprocal reward rather than by decree, and regenerates the substrate it feeds upon. Section 7 shows that each of the four has an exact fiscal correlate, and that the correlates are ordinary instruments of resource taxation assembled around a different premise.

The companion working paper on the legal coding of capital, Paper VII in this series, argues that bankability is a legal artefact purchased module by module, that whoever codes an asset captures the value the coding creates, and that the binding constraint on African infrastructure is the legal grammar rather than the quantity of capital. The present paper is the fiscal counterpart of that finding. Where the infrastructure paper asks how an African state finances an asset without surrendering sovereignty, this one asks how it funds itself without taxing its poorest citizens into the informal economy. The two questions meet at the same place, which is the rent: the infrastructure paper proposes that verified national wealth stand behind an issuance, and this paper asks how the state comes to hold verified national wealth in the first place.

3. The Literature and Its Gaps

Bearing on the fiscal question in Africa are seven bodies of scholarship. Each is substantial, each holds a fragment, and the fragments have not been assembled. This section reviews them, states where each stops, and sets this paper's contributions against the resulting gaps.

3.1 Optimal taxation and the domestic resource mobilisation consensus

The dominant policy literature descends from optimal tax theory and its application to developing countries. Diamond and Mirrlees (1971) established the production efficiency

theorem, from which the case for taxing final consumption rather than intermediate transactions follows; Atkinson and Stiglitz (1976) sharpened the conditions under which indirect taxation adds nothing to a well-designed income tax. Applied to low-income countries by Burgess and Stern (1993), Keen and Lockwood (2010) on the value added tax, and successive IMF and World Bank operational work, this became the domestic resource mobilisation consensus: broaden the base, adopt a single-rate VAT with few exemptions, strengthen the large taxpayer unit, formalise the informal, and target a tax-to-GDP ratio of about 15% as the threshold for a functioning state.

The programme has genuine achievements and this paper does not dispute its internal logic. Its limitation is what it does not ask. Optimal tax theory takes the tax base as given by the structure of the economy and asks how to raise a required sum from it at least cost. It does not ask whether a large, immobile, undistortionary base is sitting outside the perimeter unrecorded. In an economy where the rent from subsoil assets exceeds the entire yield of the value added tax, a framework that optimises the VAT while treating the rent as a sectoral detail is optimising the wrong problem. This is the first gap.

3.2 The theory of resource rent taxation

A second literature knows exactly what rent is and how to tax it. Ricardo (1817) established that rent is a surplus attributable to the differential quality of an unproduced asset and that taxing it does not alter the margin of cultivation. Hotelling (1931) supplied the intertemporal price path for an exhaustible resource; Solow (1974) and Hartwick (1977) derived the rule that rents from an exhaustible stock must be reinvested in reproducible capital if consumption is to be sustained. Garnaut and Clunies Ross (1975) turned the insight into an instrument, proposing a resource rent tax that applies only to returns above a threshold rate on accumulated expenditure, so that the normal return to capital is untouched and only the surplus is taken. Boadway and Keen (2010) and the IMF volume edited by Daniel, Keen and McPherson (2010) set out the modern menu of fiscal regimes for extractive industries and the trade-offs among royalties, income taxes, rent taxes and state equity.

This literature is analytically complete and institutionally naive. It assumes, almost universally, that the tax administration observes the quantity produced, the price at which it was sold and the costs properly deductible against it. In African conditions each of those three observations is contested, and the evidence assembled in section 4 shows they are frequently absent altogether. A rent tax levied on a profit figure the state cannot verify is not a rent tax; it is a voluntary contribution. The gap between the theory of rent taxation and the administration of rent taxation is the second gap, and it is where this paper locates its principal contribution.

3.3 The resource curse and its critics

A third literature asks whether resource wealth helps at all. Auty (1993) named the resource curse; Sachs and Warner (1995) produced the influential cross-country evidence of an inverse association between resource intensity and growth. Subsequent work qualified the finding substantially: Mehlum, Moene and Torvik (2006) showed the

curse operates conditionally on institutional quality, and van der Ploeg (2011) reviewed the evidence and concluded that resource wealth is a curse or a blessing depending on the institutions that receive it. Humphreys, Sachs and Stiglitz (2007) and Collier and Venables (2011) set out the escape conditions. On the political economy, Karl (1997) and Ross (2001, 2012) developed the rentier state argument that resource revenue weakens the fiscal contract between rulers and ruled.

The critical literature has been enormously productive and has left African policy in an unfortunate place. Because the curse framing treats resource revenue as inherently hazardous, the practical advice that flows from it is defensive: diversify away from resources, avoid dependence, and manage the volatility. It is advice about how to survive an endowment rather than how to capture it. Nowhere in the mainstream of this literature is there a positive programme for maximising the state's share of the rent, because the rent is treated as a temptation rather than a birthright. This is the third gap.

3.4 Taxation, state-building and the fiscal contract

A fourth tradition, distinct in method and superior in political realism, studies taxation as a relationship rather than a revenue technology. Tilly (1990) and Levi (1988) established the historical link between fiscal extraction and state capacity; Moore (2004) and Bräutigam, Fjeldstad and Moore (2008) carried the argument into contemporary development, and Moore, Prichard and Fjeldstad (2018) provided the standard African treatment. Prichard (2015) supplied the empirical test, finding that taxation is associated with responsive government where and only where it is bargained. The core proposition is that revenue raised from citizens generates accountability, while revenue raised from resources or aid does not, because the ruler who need not ask need not answer.

This is the most serious objection to the argument of the present paper and section 6.5 answers it at length. The reply, stated briefly here, is that the tradition has identified the right variable and attached it to the wrong thing. What generates accountability is not the source of the revenue but its visibility and the rules governing its disposal. A published, independently audited, price-linked royalty whose proceeds require parliamentary appropriation is a more accountable revenue than a value added tax with a substantial part of its base removed by tax expenditures that no legislature approved and no ministry publishes. The literature has assumed that consumption taxes are bargained and rents are not, and in African conditions the assumption is frequently reversed.

3.5 Illicit financial flows and the tax justice literature

A fifth body of work measures what leaves. The High-Level Panel on Illicit Financial Flows from Africa chaired by Thabo Mbeki (AUC and ECA, 2015) put the annual loss at about US\$50 billion; UNCTAD (2020) raised the estimate to US\$88.6 billion, or 3.7% of African GDP, and disaggregated it, finding that of about US\$40 billion of extractive-sector flows in 2015, 77% was concentrated in gold. Ndikumana and Boyce (2011, 2022) developed the capital flight and odious debt analysis. The Tax Justice Network's State of Tax Justice series quantifies cross-border corporate tax abuse and offshore evasion; its 2024 edition put global annual losses at US\$492 billion, and its 2025 edition documented US\$1.7

trillion of corporate tax loss over the six years to 2021. SWISSAID (2024) produced the most granular African evidence yet assembled, quantifying declared and undeclared gold production and trade for all 54 African countries over more than a decade.

The strength of this literature is measurement and its weakness is prescription. Its policy conclusions run almost entirely to international reform: exchange of information, beneficial ownership registers, country by country reporting, a United Nations tax convention. All are necessary and this paper supports each of them. But they are slow, they are contested by the jurisdictions that benefit from the status quo, and they leave the African state waiting. What the literature has not developed is the domestic instrument set that reduces leakage without waiting for anybody's consent, which is the fourth gap.

3.6 Sovereign wealth funds and the intergenerational rule

A sixth literature concerns what to do with rent once captured. Building on Hartwick's rule and the permanent income framework, van der Ploeg and Venables (2011) analysed optimal resource revenue management for capital-scarce developing economies and argued, against the Norwegian template, that domestic investment rather than foreign asset accumulation is usually the higher-return use of rent where the capital stock is thin. The Santiago Principles (IWG, 2008) set governance standards for sovereign funds; the Natural Resource Governance Institute's Resource Governance Index scores practice against them.

The African application of this literature has been dominated by the Norwegian model and has produced a series of underfunded vehicles whose problem is not their governance but their inflow. A stabilisation fund into which almost no rent is deposited is an architectural ornament. The sequencing question, whether capture must precede accumulation and what the design of a fund should be when the binding constraint is upstream, has not been posed.

3.7 Land, unearned increment and non-extractive rent

A seventh tradition concerns rent that has nothing to do with minerals. George (1879) located the engine of poverty in the private capture of the unearned increment on land; the Mirrlees Review (2011) reaffirmed that a tax on land value is among the least distortionary instruments available to any government. Franzsen and McCluskey (2017) documented property taxation across Africa and found collection ratios that are, with a small number of exceptions, negligible. A related body of work concerns rents from spectrum, ports, transit, fisheries and, increasingly, ecosystem services and carbon.

This literature exists but it is not joined to the extractive literature, and the separation is consequential. It means that non-resource African economies read the rent argument as inapplicable to them, when the rent categories available to a country without minerals, being urban land, spectrum, transit corridors, fisheries and standing forest, are frequently larger relative to the economy than the mineral rent of a resource state. The failure to consolidate the rent concept across its families is the fifth gap.

Literature	What it established	Where it stops	What this paper adds
Optimal taxation and the DRM consensus	Least-cost extraction from a given base; the VAT design template; the 15% threshold	Takes the base as given; optimises the VAT while the rent sits outside the perimeter	Reframes the problem as base selection rather than base broadening, and measures what sits outside
Resource rent taxation theory	Rent is undistortionary to tax; the threshold-return instrument; the Hartwick rule	Assumes quantity, price and cost are observed by the administration	Treats rent capture as an information contest, and specifies the five information instruments
Resource curse and its critics	The conditional curse; institutions determine whether endowment helps	Advises survival of an endowment rather than capture of it	A positive programme for maximising the state's share, evidenced by Botswana's 95%
Taxation and the fiscal contract	Bargained revenue builds responsive states; rents can weaken the bargain	Attributes accountability to the source of revenue rather than to its visibility and rules	Visibility-and-rules reformulation: the published, audited, appropriated rent outperforms the opaque VAT
Illicit financial flows and tax justice	The scale of leakage; US\$88.6 billion a year; 77% of extractive flows in gold	Prescriptions are international, slow, and leave the African state waiting	A domestic instrument set that reduces leakage without external consent
Sovereign wealth funds and the intergenerational rule	The Hartwick rule; domestic investment usually dominates foreign accumulation in capital-scarce states	Assumes the inflow; treats governance as the binding constraint	Sequencing: capture precedes accumulation, and fund design follows from capture design
Land, unearned increment and non-extractive rent	Land value tax as least distortionary; negligible African property tax collection	Kept separate from the extractive literature, so non-resource states read out of the argument	Consolidation of rent into four families, so that every African state has a rent base

Table 1. The seven literatures: the fragment each grasped, and where it stops

Source: author's synthesis of the works cited in Section 3. Full bibliographic details for each work appear in the reference list.

3.8 The five gaps and the eight contributions

Gap 1 is the framing of the fiscal problem as insufficient extraction from a given base rather than misdirection of the instrument onto the wrong base. Contribution 1 reframes it and, in section 4, decomposes the shortfall into four separately measurable and separately remediable leakages, with a consolidated estimate.

Gap 2 is the assumption, ubiquitous in rent taxation theory, that the administration observes quantity, price and cost. Contribution 2 is the proposition that rent capture is an information contest before it is a rate contest, and Contribution 3 is the specification of

the five information instruments that decide it, drawn from Botswana's practice rather than from a comparative template.

Gap 3 is the defensive posture bequeathed by the resource curse literature. Contribution 4 is the 7-instrument rent recovery stack, which is a positive programme, and Contribution 5 is the Ghanaian demonstration, in which two of the instruments were deployed within 18 months, alongside the repeal of regressive levies, and the results are measurable in the national accounts.

Gap 4 is the absence of a domestic leakage instrument set in the tax justice literature. Contribution 6 shows, from the Ghanaian artisanal gold channel, that a leak of the order of an entire national artisanal production can be closed by making declaration cheaper than smuggling, which is a domestic legislative act requiring no foreign cooperation whatever.

Gap 5 is the fragmentation of the rent concept. Contribution 7 consolidates rent into four families, subsoil, land and location, licence and transit, and ecological, so that the argument applies to Rwanda and Senegal as much as to Angola and the Congo. Contribution 8 answers the fiscal contract objection with the visibility-and-rules reformulation, which is the paper's principal theoretical claim and the one on which it should be judged.

THE REGRESSIVE TRAP

The condition in which a state, unable or unwilling to reach the rent generated within its own territory, raises the majority of its revenue from the consumption and transactions of those who spend everything they earn; and in which the resulting political resistance, informality and evasion are then read as evidence of low taxable capacity rather than as the predictable response to taxing the wrong base. The trap is self-sealing: each failure of the consumption tax is met by a further extension of the consumption tax.

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4. The Fiscal Trial: 4 Demonstrations

The method of the Omnidox lectures is to state the abundance available, set beside it the want that persists, and locate the gap in the rules rather than in nature. Applied to public revenue, the trial has four counts. The base is invisible, it leaks, it is shifted, and it is given away. Each is measured from published sources, and the section closes with a consolidated estimate that is deliberately conservative.

4.1 The invisible base

The first count is the most consequential and the least discussed. Non-tax revenues in Africa averaged 5.9% of GDP in 2023 across 37 reporting countries, ranging from 0.5% in The Gambia to 33.8% in Lesotho, and exceeding 10% of GDP in 6 countries. In Nigeria, rents and royalties amounted to 5.9% of GDP and 87.8% of all non-tax revenue, against a

total tax-to-GDP ratio of 8.2%. In other words, in Africa's largest economy the rent line is equal to more than two-thirds of the entire tax line, and it sits in a residual category called non-tax revenue that receives a fraction of the analytical attention devoted to the value added tax.

Worse, it is frequently not identifiable at all. The joint OECD, African Union Commission and African Tax Administration Forum publication states in its own methodological discussion that extractive-related revenues are not systematically identified in national revenue classifications. This is not a minor technical observation. It means that for a large number of African states there is no consistent, published, comparable series showing what the country received from its subsoil, by instrument, by company, by year. A magnitude that cannot be observed cannot be benchmarked, cannot be audited against a counterfactual, and cannot become a political question. The first leak is therefore not a flow of money but an absence in the ledger, and it is the condition that permits the other 3.

4.2 The leaking base: undeclared production

The second count concerns output that never enters the accounts at all. SWISSAID's 2024 study quantified declared and undeclared gold production and trade for all 54 African countries over more than a decade, and its findings are the most precise measurement of a resource leak yet produced for the continent. Between 321 and 474 tonnes of gold are produced annually by artisanal and small-scale mining in Africa without being declared, a quantity equivalent to as much as 41% of total continental gold production and worth up to US\$35 billion a year. In 2022 alone more than 435 tonnes were smuggled out, more than a tonne a day, worth about US\$30.7 billion at prices then prevailing. Between 2012 and 2022, 2,569 tonnes of gold entered a single destination market, the United Arab Emirates, without corresponding export declarations from the countries of origin, a quantity worth roughly US\$115.3 billion; in 2022, 66.5% of the African gold that market received, some 405 tonnes, was unreported by the exporting states, and the discrepancy had widened from 234 tonnes in 2020.

The country-level detail is more damning than the aggregate. Some 15 of the 54 African states produce artisanal gold and officially report no production at all. Mali reported artisanal output of about 6 tonnes a year from 2016 while the true figure is estimated at between 30 and 57 tonnes. Ghana's undeclared output in 2023 was estimated at 34 tonnes, a quantity roughly equal to that country's entire declared artisanal production for the year. Some 9 African countries each see more than 20 tonnes of artisanal gold go undeclared annually.

The analytical significance is that this leak is not a tax avoidance problem in the ordinary sense. There is no aggressive interpretation of a transfer pricing rule and no treaty being shopped. The mineral simply leaves without being recorded, which means that no rate, however well designed, applies to it. A state that raises its royalty from 5% to 12% on production it does not observe has raised nothing.

4.3 The shifted base: illicit financial flows and profit shifting

The third count concerns value that is recorded but relocated. UNCTAD's Economic Development in Africa Report 2020 put illicit financial flows from the continent at US\$88.6 billion a year, equivalent to 3.7% of African GDP, and observed that this approached the combined total of official development assistance and foreign direct investment received. Trade misinvoicing accounts for up to US\$52 billion of the annual total. Of an estimated US\$40 billion of illicit flows derived from extractive commodities in 2015, 77% was concentrated in the gold supply chain, followed by diamonds at 12% and platinum at 6%. The earlier High-Level Panel chaired by Thabo Mbeki had put the figure at about US\$50 billion a year against a cumulative loss exceeding US\$1 trillion over the preceding five decades.

On the corporate side, the Tax Justice Network's State of Tax Justice put global annual losses to cross-border tax abuse at US\$492 billion in its 2024 edition, of which roughly two-thirds arises from multinational profit shifting and one-third from offshore individual evasion; the 2025 edition documented US\$1.7 trillion of corporate tax loss over the six years to 2021 and found that more than a quarter of it could have been prevented by publishing the country by country reports that tax authorities already collect. The African share of these losses is disproportionate relative to the tax base, which is the standard finding of the literature.

Against this, the recovery to date is modest and instructive. Thirty-four African countries were signatories to the Yaoundé Declaration by 2023, and in 2022 African countries reported additional revenues of EUR 66 million in taxes, interest and penalties as a result of exchange of information collaboration, a 77% increase on the prior year. A 77% annual increase is genuine progress. EUR 66 million against US\$88.6 billion is a recovery rate of well under one tenth of 1%. The international machinery is worth building and it is not, on current trajectory, the answer.

4.4 The base given away: tax expenditures

The fourth count concerns revenue the state has legislated away and does not count. Globally, reported revenue forgone through tax expenditures averages 3.8% of GDP and 23.0% of tax revenue among the 116 jurisdictions that have published such data at least once. For sub-Saharan Africa specifically, IMF staff work in 2025 found revenue forgone ranging from 0.1% to 13% of GDP and averaging about 3% of GDP across reporting countries, with value added tax and corporate income tax provisions the major drivers.

The governance findings matter as much as the magnitudes. About 30% of sub-Saharan African countries have no inventory of tax expenditures and no estimate of revenue forgone. Among the 32 that do report, only about half of the reports are comprehensive and published; roughly a third of countries with estimates choose not to publish them; and about a quarter appear to lack any legislative rules governing the creation of tax expenditures at all. A tax expenditure is a public subsidy delivered through the revenue code rather than the appropriation. Where it is uninventoried, unpublished and ungoverned by statute, it is a permanent, unbudgeted transfer from the general taxpayer to a specific beneficiary, decided administratively and reviewed by nobody.

4.5 The consolidated estimate

The four magnitudes overlap and cannot simply be added. Undeclared artisanal gold is partly captured within the illicit financial flow estimate; trade misinvoicing appears in both the UNCTAD figure and, differently measured, in the corporate abuse estimates; and revenue forgone through tax expenditures is a legal act rather than a leak, so it belongs in a different moral category even though its fiscal effect is identical. Table 2 therefore states each magnitude on its own basis, indicates the overlap, and offers a deliberately conservative consolidated range.

Leakage	Measured magnitude	As share of GDP	Overlap and caveat
1. The invisible base	Extractive revenues not systematically identified in national revenue classifications; non-tax revenue averages 5.9% of GDP with rents and royalties dominant in resource states	Not quantifiable by construction	This is the enabling condition of the other three rather than a separate flow; it is measured by its absence
2. Undeclared production	321 to 474 tonnes of artisanal gold annually, up to 41% of continental production, worth up to US\$35 billion; 435 tonnes smuggled in 2022	Approximately 1.1% of African GDP	Substantially inside the UNCTAD illicit flow estimate; gold only, so it understates total undeclared resource output
3. Shifted value	US\$88.6 billion a year in illicit financial flows, of which up to US\$52 billion is trade misinvoicing; 77% of extractive flows concentrated in gold	3.7% of African GDP	Contains most of leakage 2; excludes legal but aggressive profit shifting measured separately by TJN
4. Revenue forgone	Tax expenditures averaging about 3% of GDP across reporting SSA countries, ranging to 13%; about 30% of countries hold no inventory	About 3% of GDP	Legal rather than illicit; largely distinct from 2 and 3; reporting-country average, so the true figure is likely higher
Consolidated	Leakages 3 and 4 taken together, with two treated as contained within 3	Approximately 6% to 7% of GDP	Against an Africa average tax-to-GDP ratio of 16.1%, this is equivalent to between a third and a half of total tax revenue

Table 2. The four fiscal leakages, measured

Sources: OECD/AUC/ATAF (2025) for the revenue classification finding; SWISSAID (2024) for undeclared production; UNCTAD (2020) for illicit financial flows; Liu, Schneider, Sever and Jankulov Suljagic (2025) and Redonda, von Haldenwang and Aliu (2025) for tax expenditures. Shares of GDP are as published, except the artisanal gold figure, which is the author's calculation against an African GDP of approximately US\$3.1 trillion. The consolidated row is the author's, on the overlap treatment stated in column 4.

The consolidated finding is the argument of this paper in a single line. African states are not short of taxable capacity. They are losing, annually, an amount equivalent to between

a third and a half of everything they collect in tax, through three channels that are separately identifiable and one condition that makes all three possible. And they are attempting to close the resulting fiscal gap by raising rates on the base that is easiest to see and least able to resist, which is the consumption of the poor.

5. The Rent Base That Is Already Here

Economic rent is the return to an asset in excess of what is required to bring it into use. It arises where supply is fixed by nature, by law or by location, so that competition cannot drive the surplus to zero. Ricardo derived it for agricultural land; George extended it to urban location; the extractive literature applies it to subsoil deposits; and modern public finance recognises it wherever a licence, a frequency, a corridor or an ecosystem confers a return that no effort created. The defining property, for fiscal purposes, is that a tax on pure rent changes no decision. The land does not move, the ore body does not relocate, the spectrum does not emigrate, and the operator who was earning above the required return continues to operate while earning slightly less above it.

SOVEREIGN RENT

The surplus generated within a territory by assets that no person produced and that cannot be moved: the subsoil, the land and its location, the licensed frequency, the transit corridor, the fishery and the standing forest. It belongs, in the first instance, to the political community in whose territory it arises, and its capture by that community distorts no economic decision because the asset would have been supplied anyway. Sovereign rent is not a windfall to be spent, but a stock being converted into a flow, and the rule governing its conversion is the first fiscal question a resource-holding state must answer.

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Africa's endowment of this base is not in dispute. The continent holds an estimated 30% of the world's mineral reserves, 40% of its gold deposits, and about 90% of its chromium and platinum group metals, alongside roughly 12% of proven oil reserves and 8% of natural gas. Measured as realised rent, the World Bank's series shows total natural resource rents exceeding 60% of GDP in Libya and exceeding a third of output in the Democratic Republic of the Congo and the Republic of the Congo. The critical minerals position sharpens this further: the Democratic Republic of the Congo produced approximately 230,000 tonnes of mined cobalt in 2025, roughly three-quarters of world supply; the Congo and Zambia together are the largest single contributors to narrowing the global copper supply gap; Madagascar, Mozambique and Tanzania could collectively supply about a third of the world's mined natural graphite by 2040, up from approximately 11% in 2025; and African lithium output rose 44% in 2025 alone.

But the argument does not depend on minerals, and it is important to say so early, because the most common reason a finance ministry sets this analysis aside is the belief that it

applies to somebody else. Rent has four families and every African state holds at least three of them.

Family	What generates the rent	Principal instrument	African state of play
Subsoil	Deposits of hydrocarbons, metals, industrial minerals and gemstones fixed in location and quality	Royalty, resource rent tax, state equity, production sharing	Widely legislated, weakly administered; the rate is contested and the quantity is frequently unobserved
Land and location	The unearned increment on urban and peri-urban land created by public investment and population growth	Land value tax, betterment levy, land value capture around corridors and stations	Collection ratios negligible across most of the continent; valuation rolls decades out of date
Licence and transit	Exclusive rights conferred by the state: spectrum, port and airport concessions, transit corridors, overflight, landing rights, fishing access	Auction rather than administrative allocation; revenue-sharing concession fees; access agreements	Frequently allocated administratively at negotiated prices; the auction premium is forgone
Ecological	Standing forest, carbon sequestration capacity, biodiversity, fisheries and watershed services	Access fees, results-based payments, Article 6 credit issuance, sovereign carbon registries	Emerging, unstandardised, and at present the family most exposed to under-pricing by first movers

Table 3. The four families of sovereign rent

Source: author's construction. The state of play recorded in column 4 draws on Franzsen and McCluskey (2017) for property taxation, on the extractive fiscal literature reviewed in Section 3.2, and on OECD/AUC/ATAF (2025) for the treatment of rents and royalties in national revenue classifications.

There are two observations that follow from the table. The first is that the fiscal condition of a non-mineral African economy is not the absence of rent but its concentration in the two families that are hardest to see: urban land and licensed access. The second is that the ecological family is at the stage the subsoil family occupied in the 1960s, which is to say that the terms on which it is being coded now will determine the distribution of its rent for the next half century. That is not a distant concern. It is the reason section 10 treats the international layer as urgent rather than aspirational.

6. Why Rent Rather Than Regression

The case for shifting the fiscal weight from consumption to rent rests on six criteria. The first four are settled in the theoretical literature and are stated briefly. The fifth is contested and is treated at length. The sixth is the one African finance ministries actually care about.

6.1 Efficiency

A tax on pure rent is the only major tax that changes no allocative decision, because the supply of the underlying asset does not respond to it. Every other substantial instrument distorts something: the value added tax drives activity into the informal sector, the payroll tax discourages formal employment, the corporate income tax alters the location and financing of investment, and the transaction tax suppresses the transactions it touches. The efficiency argument for rent taxation is not a marginal improvement over the alternatives. It is a difference in kind, and it has been agreed across otherwise irreconcilable schools since Ricardo.

6.2 Incidence

Consumption taxes are regressive with respect to income because the propensity to consume falls as income rises. A household that spends everything it earns pays the full statutory rate on its entire income; a household that saves half pays it on half. In African conditions the effect is amplified by the composition of consumption and by the reach of transaction levies into the payment systems that the unbanked depend on. Ghana's electronic transfer levy is the clearest recent illustration on the continent: introduced in the 2022 budget with a projected yield of GH¢6.96 billion, roughly US\$1.1 billion at the time, it fell on mobile money transfers that function as the retail banking system for the majority of the population, was politically contested from the outset, fell far short of its original revenue projection, and was repealed in 2025. Rent, by contrast, is captured from a surplus whose beneficiaries are, almost by construction, at the top of the distribution.

6.3 Administrability

The most persistent argument for consumption taxation in low-income countries is administrative: it is easier to collect at the point of sale from a registered trader than to assess income from a dispersed and informal population. The argument is sound as far as it goes, and it points in the opposite direction from where it is usually taken. If administrative reach is the binding constraint, then the state should concentrate its scarce enforcement capacity on the smallest number of the largest transactions. A ministry of finance that can supervise 20 large mines, 6 ports and a spectrum register is in a very different position from one attempting to reach 20 million informal traders. Rent is administratively the easiest base in Africa, not the hardest, provided the state solves the observation problem set out in section 9.

6.4 Volatility

The strongest technical objection to rent-based public finance is that commodity prices move violently and that a budget resting on them is a budget resting on nothing. The objection is real and it has two answers, both of which are instruments rather than assurances. The first is the price-linked sliding scale, which converts volatility from a fiscal shock into a fiscal automatic stabiliser by raising the state's share when prices are high and lowering it when they fall. The second is the stabilisation and intergenerational rule, which routes the cyclical component of rent into a fund rather than into the recurrent budget. Both are treated in section 7. It is worth noting that the volatility objection is

rarely applied with equal force to the alternative, which is a revenue base resting on commodity-driven import volumes and therefore no less cyclical, but cyclical in a way the budget does not acknowledge.

6.5 The fiscal contract: the serious objection

The most serious objection to this paper's argument comes from the tax and state-building literature and deserves the fullest answer the paper can give. The claim, developed by Moore, Prichard, Fjeldstad and others and grounded in a long historical literature on European state formation, is that taxation builds states because it forces rulers to bargain with those they tax. Revenue that arrives without a bargain, whether from aid or from resources, severs the link, and the rentier state that results is less accountable, less responsive and ultimately less capable. On this reading, a programme to substitute rent for broad-based taxation is a programme to weaken African democracy in exchange for revenue.

The objection identifies the right variable and attaches it to the wrong thing. What produces accountability is not the source of a revenue but two properties of it: whether the citizen can see it, and whether its disposal is governed by a rule the citizen's representatives control. Consumption taxes have historically possessed both properties, which is why the literature associates them with responsive government. But possession is contingent, not intrinsic, and in contemporary African conditions the association frequently inverts.

Consider the two revenues actually available. On the one side, a value added tax whose statutory rate is public but whose effective base has been reduced by tax expenditures that, in roughly 30% of sub-Saharan countries, are not inventoried at all, in about a third of the reporting countries are not published, and in about a quarter are not governed by any legislative rule. The citizen sees the rate on the receipt and cannot see how much of the base has been given away by administrative decision. On the other side, a royalty set by a published legislative instrument, calculated against an internationally quoted reference price, assessed on a quantity verified at export by a licensed assayer, reported through the Extractive Industries Transparency Initiative, and appropriated by parliament. The second revenue is more visible and more rule-bound than the first.

The reformulation follows. It is not rent that corrodes the fiscal contract; it is opacity, and opacity is a property of administration rather than of geology. This yields a testable proposition, and the paper states it for testing: the accountability effect of a revenue source varies with its visibility and the statutory constraint on its disposal, not with whether it originates from citizens or from resources. Botswana, which captured mineral revenues equal to about 95% of mineral rents between 1983 and 2014 while sustaining the longest continuous multiparty electoral record in Africa, is the observation that the rentier hypothesis in its simple form cannot accommodate.

6.6 Political feasibility

The final criterion is the one that decides. Every increase in a consumption tax is paid by the entire electorate and is felt immediately; the political cost is high, certain and borne

by the incumbent. An increase in the state's share of rent is paid by a small number of firms, most of them foreign, and is felt by the electorate as a gain. The reason this asymmetry has not driven policy is that the second option requires the state to know things it does not currently know and to withstand pressure it does not currently withstand. Ghana's experience in March 2026 is instructive: when the sliding-scale royalty regulations were finalised, diplomatic missions of both the United States and China reportedly urged the government to reconsider. That is a real cost and it should be stated. It is also a cost incurred once, in exchange for a permanent change in the revenue base, whereas the political cost of a consumption tax is incurred at every budget.

Criterion	Consumption and transaction taxes	Sovereign rent
Efficiency	Distorts the taxed activity; drives transactions into informality and cash	Changes no allocative decision; the asset would have been supplied anyway
Incidence	Regressive with respect to income; falls at full rate on those who spend everything they earn	Falls on a surplus whose beneficiaries are at the top of the distribution by construction
Administrability	Requires reach across millions of dispersed and informal transactions	Requires supervision of a small number of large, fixed, licensed operations
Volatility	Cyclical through import and consumption volumes, but unacknowledged in budget design	Cyclical and acknowledged; managed by sliding scale and stabilisation rule
Accountability	Visible on the receipt; base frequently reduced by unpublished and ungoverned tax expenditures	Capable of full visibility: published instrument, reference price, verified quantity, parliamentary appropriation
Political feasibility	Cost borne by the whole electorate at every budget; resistance is continuous	Cost borne by a small number of firms once; external diplomatic pressure is the real constraint

Table 4. Rent and regressive taxation compared on six criteria
Source: author's construction, on the criteria and the evidence set out in Sections 6.1 to 6.6. Column 2 draws on the optimal taxation literature reviewed in Section 3.1 and on Liu et al. (2025) for the treatment of tax expenditures.

7. The Rent Recovery Stack: 7 Instruments

What follows is a stack rather than a menu. The instruments are ordered by the depth of institutional capacity each requires, and a state should not attempt instrument 5 before instrument 4 is working, because each higher instrument depends on information the lower one generates. The four mycelial design principles map onto the stack directly: instruments 1 and 2 redistribute from surplus toward need by taking more when the surplus is larger; instrument 3 makes the state a participant in the network rather than a claimant upon it; instruments 4 and 6 are the sensing function without which no correction is possible; and instrument 7 is regeneration, the rule that leaves the substrate richer than it was found.

Instrument 1: the price-linked sliding scale

A flat royalty is a fixed claim on a variable surplus, which means it over-taxes at the bottom of the price cycle and under-taxes at the top. A price-linked scale corrects both errors with a single published schedule. Ghana's Minerals and Mining (Royalties) Regulations, 2025 (L.I. 2517), which became law on 9 March 2026, is the current African reference case. It replaces the flat 5% rate that had applied since 2010 with a schedule running from 5.0% at gold prices up to US\$1,900 per ounce, rising by 1 percentage point per band through US\$2,000, US\$2,500, US\$3,000, US\$3,500, US\$4,000 and US\$4,500, and reaching 12.0% above US\$4,500. Small-scale operations pay 2.0%. Lithium moves to a 5% to 12% scale linked to prices between US\$1,500 and US\$3,200 per tonne; other minerals retain the flat 5%. The reference price for gold is the weekly average of the London Bullion Market Association PM fix in United States dollars per fine troy ounce, which removes valuation from negotiation.

There are two features of the design that deserve emphasis. The instrument is symmetrical: it protects the operator on the downside as automatically as it captures for the state on the upside, which is what distinguishes it from a windfall levy and is the reason it is defensible in a stability negotiation. And it is a legislative instrument keyed to a published external price, so that the state's revenue does not depend on any administrative discretion, any company disclosure, or any officer's judgement.

The Sankofa observation is unavoidable and instructive. Ghana already had this instrument. Section 22 of the Minerals and Mining Law, 1986 (PNDCL 153), elaborated by the Minerals (Royalties) Regulations, 1986 (L.I. 1340) and 1987 (L.I. 1349), established a sliding scale of 3% to 12% with triggers linked to mine profitability expressed as an operating ratio. The range was subsequently narrowed to 3% to 6%, a flat 5% was introduced in 2010 under Act 794, and a 2015 amendment conferred ministerial discretion over the rate. The Ghana Extractive Industries Transparency Initiative's assessment of why the original scale failed is the single most useful sentence in this literature: companies frequently paid the minimum rate regardless of market conditions. The instrument did not fail because it was badly designed. It failed because it was keyed to a variable, mine profitability, that the company reported and the state could not verify. The 2026 instrument is keyed to a price the state can read in a newspaper. That is the whole of the difference, and it is the thesis of section 9 in miniature.

Instrument 2: the resource rent tax

A royalty is levied on gross value and is therefore regressive with respect to the profitability of the deposit: it takes the same proportion from a marginal mine as from an exceptional one. The resource rent tax proposed by Garnaut and Clunies Ross (1975) corrects this by applying only to accumulated returns above a threshold rate on accumulated expenditure, so that the normal return to capital passes untaxed and only the true surplus is taken. Properly specified it is the most theoretically satisfactory instrument in the stack, and it is the one most vulnerable to the observation problem, because it operates on a profit figure rather than a price. It should therefore be layered above a royalty floor rather than substituted for one, and it should not be attempted

before instruments 4 and 6 are operating. A resource rent tax without cost audit is an invitation.

Instrument 3: state equity and the joint venture

Equity participation gives the state a claim on the residual and, more importantly, a seat inside the information flow. The canonical African case is Debswana, formed in 1969 as a joint venture in which the Government of Botswana held 15%, increased to 50% by the mid-1970s and held at that level since. The distinction that matters is between carried interest, in which the state's share is funded out of production and its influence is nominal, and paid or working interest, in which the state contributes capital and sits genuinely inside the governance of the operation. The first is a revenue instrument dressed as participation; only the second delivers the informational benefit that justifies the risk.

Instrument 4: valuation and marketing control

This instrument is the least discussed and, on the evidence of section 4, the most valuable. The state's revenue depends on three observations: how much was produced, at what price it is deemed to have been sold, and what costs are deductible. Where the operator supplies all 3, the statutory rate is advisory. Botswana's response was to build independent observation: it employs an independent diamond valuator to audit and value the stones sold from the joint venture to its partner, engages external auditors to verify that transfer values are appropriate, and participates directly in downstream marketing through the Okavango Diamond Company specifically in order to acquire the sales and marketing knowledge that offsets the information asymmetry between government representatives and those of an established mining house. Ghana's Gold Board, discussed in section 8, is a version of the same instrument applied to a dispersed artisanal channel rather than to a single large counterparty.

Instrument 5: supply discipline

Where a state holds a genuinely large share of world supply, the rent available to it is not merely a share of the prevailing price but a function of the price itself, and the instrument is quantity rather than rate. The Democratic Republic of the Congo demonstrated this in 2025 and 2026 with the clearest natural experiment the continent has produced. Holding roughly three-quarters of world mined cobalt supply at approximately 230,000 tonnes in 2025, the government imposed an export ban in February 2025 and announced in September its replacement, from 16 October, by a quota capping exports at 96,600 tonnes a year for 2026 and 2027, less than half of the prior year's volume. Cobalt metal prices responded by approaching US\$58,000 per tonne, and by the International Energy Agency's own account the Congolese quota became the central variable determining whether the world cobalt market runs a surplus or a deficit.

The instrument is powerful and it is the most dangerous in the stack, for three reasons that must be stated alongside it. It requires a genuinely dominant share, which few African states hold in any single commodity. It invites substitution and thrifting over the medium term, so the rent it captures may be borrowed from the future. And it is the instrument most likely to provoke coordinated counter-pressure. Its correct use is therefore collective rather than unilateral, which is the argument of section 10.

Instrument 6: ring-fencing and anti-avoidance

The sixth instrument protects the first five from erosion. Its components are standard and their absence is the norm: ring-fencing of each licence area so that losses from one project cannot shelter profits from another; thin capitalisation and interest limitation rules to prevent the substitution of related-party debt for equity; transfer pricing rules with reference-price or sixth-method fallbacks for commodities, so that the state is not required to find comparables that do not exist; withholding at source on management and technical service fees; a general anti-avoidance rule; mandatory country by country reporting with automatic exchange; and a public beneficial ownership register. The Tax Justice Network's finding that more than a quarter of global corporate tax losses could have been prevented simply by publishing country by country reports that authorities already hold is the cheapest available reform in this entire paper.

Instrument 7: the intergenerational rule

The seventh instrument governs disposal. Hartwick's rule states that if consumption is to be sustained from an exhaustible stock, the rents from that stock must be reinvested in reproducible capital at a rate equal to their depletion. This is the point at which the paper concedes the absolute scarcity of the Omnidox taxonomy without reservation: subsoil rent is not income, it is the liquidation of a balance sheet, and a state that routes it into recurrent expenditure is consuming its own capital while reporting a surplus.

The design question is where the reinvestment goes, and here the African answer should differ from the Norwegian one. Van der Ploeg and Venables (2011) showed that for a capital-scarce developing economy the return on domestic investment generally exceeds the return on foreign financial assets, so that the Norwegian practice of accumulating an offshore portfolio is not the appropriate template. The appropriate template routes rent into the domestic capital stock, which is precisely the corridor and infrastructure programme specified in the companion working paper on infrastructure finance (Paper VII), with an offshore stabilisation tranche sized only to smooth the cycle rather than to accumulate indefinitely. Botswana's Pula Fund and the Diamonds for Development Fund created under its February 2025 agreement with De Beers, alongside the new sovereign fund established in September 2025 to direct diamond revenues into agro-processing, renewables and tourism, are the continental reference points.

Instrument	What it captures	Information it requires	African reference case
1. Price-linked sliding scale	A rising share of gross value as the price rises	Quantity at export and a published external reference price	Ghana, L.I. 2517 (2026): 5% to 12% on gold, keyed to the LBMA PM fix
2. Resource rent tax	Returns above a threshold rate on accumulated expenditure	Audited costs and capital expenditure by ring-fenced project	Widely legislated in principle across the continent; rarely effective in practice
3. State equity	A share of the residual, and a seat	Governance participation and the	Debswana: 50/50 since the mid-1970s, with

Instrument	What it captures	Information it requires	African reference case
	inside the information flow	capital to fund a paid interest	genuine board participation
4. Valuation and marketing control	The difference between the declared price and the true price	Independent assay, independent valuation, downstream market knowledge	Botswana's independent diamond valuator and Okavango Diamond Company; Ghana's GoldBod
5. Supply discipline	The price effect of quantity management where the state's share is dominant	Accurate production data and credible export control	DRC cobalt: export ban February 2025, quota of 96,600 tonnes from September 2025
6. Ring-fencing and anti-avoidance	Value that would otherwise be shifted out of the tax net	Country by country reports, beneficial ownership, reference prices	Yaoundé Declaration exchange of information; 34 signatories by 2023
7. The intergenerational rule	Nothing; it governs the disposal of what the first six capture	A published deposit rule and an audited fund	Botswana's Pula Fund and Diamonds for Development Fund; Ghana's reserve accumulation policy

Table 5. The rent recovery stack

Sources: author's construction. Reference cases in column 4 are documented in Republic of Ghana (2025c) and GHEITI (2026) for the sliding scale; International IDEA (2025) for Debswana, the independent valuator and the Okavango Diamond Company; IEA (2026) for the Congolese cobalt quota; and the Yaoundé Declaration reporting summarised in Tax Justice Network Africa for exchange of information.

8. The Ghana Demonstration

Between January 2025 and July 2026 Ghana executed 3 moves, deploying 2 of the 7 instruments, in sequence, and the results are measurable in published national accounts. The sequence matters as much as the substance, and it is set out here in the order in which it occurred because the order is the lesson.

8.1 Move 1: the repeal of regressive instruments

In March 2025 Parliament passed a package of tax measures whose direction was, unusually, subtractive. The Electronic Transfer Levy (Repeal) Act, 2025 eliminated the levy on mobile money transfers. The Income Tax (Amendment) Act, 2025 abolished the 10% withholding tax on betting and gaming winnings and, critically for what followed, removed the 1.5% withholding tax on unprocessed gold from small-scale miners. The Emissions Levy (Repeal) Act, 2025 removed the carbon emissions levy. The Earmarked Funds Capping and Realignment (Amendment) Act uncapped statutory funds for education, health and roads.

The electronic transfer levy is the instructive case. Introduced in the 2022 budget with a projected yield of GH¢6.96 billion, roughly US\$1.1 billion at the time, levied on the payment rails that function as the retail banking system for most Ghanaians, it was politically contested from introduction, fell far short of its original projection, and was repealed within three years. It is the regressive trap in a single instrument: a state unable to reach its rent reaches instead for the transactions of the people least able to avoid them, and the yield disappoints because the base responds.

8.2 Move 2: closing the artisanal leak

The Ghana Gold Board Act, 2025 (Act 1140) established a statutory body mandated to generate foreign exchange and to support gold reserve accumulation by the Bank of Ghana, consolidating a fragmented and heavily smuggled artisanal export trade into a single regulated channel. The combination with the withholding tax repeal is the design insight, and it should be stated explicitly because it is generalisable: the leak was closed by making declaration cheaper than smuggling, not by making smuggling more dangerous. A licensed buyer offering a competitive price, minus a tax that had just been abolished, dominates a smuggler offering a discount for the risk he carries.

The measured result is the strongest single piece of evidence in this paper. Recorded artisanal and small-scale exports rose from 63.6 tonnes for the whole of 2024 to 103 tonnes in 2025, generating about US\$10.8 billion in foreign exchange inflows. Set that against the SWISSAID estimate that Ghana's undeclared output in 2023 was about 34 tonnes, a quantity roughly equal to the country's entire declared artisanal production for that year. A leak of roughly that magnitude appears to have been substantially closed by two legislative acts within a single year.

The macroeconomic consequences followed. Gross international reserves rose from US\$8.98 billion at end-2024 to US\$13.8 billion at end-2025, equivalent to 5.7 months of import cover. The current account balance moved from a surplus of 1.9% of output in 2024 to 8.3% in 2025, an improvement of 6.4 percentage points that the Minister for Finance attributed to this single policy measure when presenting the mid-year budget review on 23 July 2026, reporting an additional US\$15 billion in foreign exchange inflows. The cedi appreciated 40.7% against the dollar in 2025 and inflation fell from 23.5% in January 2025 to 3.8% in January 2026. Total gold output reached a record 6 million ounces in 2025.

8.3 Move 3: the price-linked royalty

The Minerals and Mining (Royalties) Regulations, 2025 (L.I. 2517) were laid before Parliament in December 2025 and became law on 9 March 2026, replacing the flat 5% gold royalty with the schedule described in section 7. The context is material: gold traded above US\$5,000 per ounce in the first quarter of 2026, placing Ghana at the top band of the new scale, while Ghana-linked producers reported exceptional results for 2025, with Newmont earning over US\$7 billion, Gold Fields more than doubling profits, AngloGold Ashanti tripling profit and Perseus recording US\$421.7 million for the year to June 2025, up 16% year on year.

An illustrative calculation makes the magnitude concrete, and its assumptions are stated so that it can be checked and disputed. Take 3 million ounces of non-small-scale output, being half of the 2025 record total, and a gold price of US\$5,000 per ounce, within the top band above US\$4,500. Gross value is US\$15.0 billion. The difference between the former flat 5% royalty and the new top band of 12% is 7 percentage points, or approximately US\$1.05 billion a year. The realised increment will be materially lower, because output under subsisting development agreements with fiscal stability clauses is grandfathered, because the price will not remain at the top band, and because Parliament simultaneously reduced the Growth and Sustainability Levy on mining gross production from 3% to 1% under Act 1166, passed on 13 March 2026, which the Institute of Economic Affairs has rightly noted offsets part of the gain. Even so, the order of magnitude is unambiguous, and the comparison that matters is this: a single legislative instrument levied on windfall rent is worth about as much as the most politically costly consumption tax in Ghana's recent fiscal history was ever projected to raise, and many times what it actually collected, and it is paid by companies reporting record profits rather than by families sending money to relatives.

8.4 What has not been done

A demonstration is only useful if its limits are stated as precisely as its achievements, and five things remain undone.

The honest summary is that Ghana has demonstrated instruments 1 and 4 convincingly, has an unfinished position on instruments 2 and 7, and has not begun on 3, 5 or 6. That is a considerable achievement in 18 months and it is roughly half of the programme.

9. Institutional Wealth: Rent Capture as an Information Contest

The central theoretical claim of this paper can now be stated. The determinants of how much rent a state captures are, in order of importance: what it can observe, what rule governs the observation, and only then what rate the statute specifies. Rate is the variable that receives the political attention and it is the least important of the 3. A 12% royalty on 60% of production, valued at a declared price two-thirds of the market price, yields less than a 5% royalty on 100% of production valued at an external reference. The arithmetic is trivial and the policy implication is not.

The evidence for this claim is Botswana, and it is stronger than any cross-country regression. Between 1983 and 2014, one estimate holds that Botswana's mineral revenues were equal to about 95% of mineral rents. That is close to complete capture of the surplus by the political community in whose territory it arose, sustained across three decades, by a state with a population of at most about 2 million negotiating against the most sophisticated counterparty in its industry. No plausible account of that outcome runs through statutory rates, because Botswana's royalty rates are unremarkable. It runs through information.

There were five instruments that produced it, and each is transferable.

INSTITUTIONAL WEALTH

The accumulated, funded and legally protected capacity of a state to know what it owns, what that is worth, and what has been taken from it: the assay, the valuation, the cost audit, the register of beneficial ownership, the continuity of counsel and the institutional memory that survives an electoral cycle. It is the true endowment of a resource-holding nation, because without it the geological endowment is merely a stock that other people are better placed to value. Where the mineral is depleted by extraction, institutional wealth compounds with use. It is the only asset in the resource economy that behaves like the mycelium rather than like the ore.

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The concept resolves a puzzle that the resource curse literature has struggled with. That literature finds, correctly, that resource wealth helps where institutions are strong and harms where they are weak, and then defines institutional quality through general governance indices that offer a minister no actionable programme. The reformulation offered here is narrower and therefore usable: the institutions that matter for rent capture are five specific measurement and continuity functions, they can be listed, they can be costed, and they can be legislated. A state that funds an independent assay authority, a reference-price valuation rule, a statutory cost audit, a beneficial ownership register and a permanent counsel retainer has done more for its rent capture than a decade of general governance reform.

The cost comparison is not close. The five functions together are within the recurrent budget of any African ministry of finance. Against them stands the leakage estimated in section 4, equivalent to between a third and a half of total tax revenue. There is no other available fiscal reform with that ratio of return to expenditure, and the reason it is not undertaken is not cost. It is that measurement capacity is invisible in a budget speech, produces no ribbon to cut, and pays out over a horizon longer than an electoral cycle.

10. The International Layer

Of the seven instruments, three can be deployed unilaterally, two require regional coordination to be safe, and two depend on international rules that Africa does not presently write. This section treats the layer that individual action cannot reach, and argues that it is more urgent than its slow procedural character suggests.

10.1 The collective action problem in rent

The structural weakness of the African fiscal position in extractives is competitive undercutting. Where five states hold deposits of the same mineral and each negotiates alone, the fiscal terms converge downward toward the terms offered by the most desperate. This is the tax competition dynamic familiar from the corporate income tax, applied to a base that is immobile and where competition therefore serves no efficiency

purpose whatsoever. The deposit cannot relocate to the jurisdiction with the lower royalty. Only the investment can, and only at the margin.

The remedy is the same instrument that the corporate income tax world reached after three decades of erosion, which is a floor. A continental minimum royalty floor by mineral class, agreed as an African Union instrument and expressed as a legislative commitment rather than a target, would do for resource rent what the global minimum effective rate does for corporate profit. It has two advantages over the corporate analogue: the base cannot move, so the floor is fully effective; and Africa's collective share of several critical minerals is high enough that the floor would bind on world prices rather than merely redistributing between jurisdictions.

The institutional vehicle exists in outline. The Africa Mining Vision of 2009 established the value-capture framing; the African Green Minerals Strategy, adopted at the 38th Ordinary Session of the Assembly in February 2025, updated it for the energy transition and explicitly targets critical minerals as levers for industrialisation; and the Magaliesberg Communiqué of March 2026 called for continental value addition, regional industrialisation corridors and the establishment of collective bargaining power to prevent a race to the bottom. What is missing is the binding fiscal instrument beneath the strategy. A strategy that commits to value addition without committing to a royalty floor has left the price of the raw material to bilateral negotiation, which is where it has always been lost.

10.2 The pressure test

That a coordinated floor is necessary can be demonstrated from a single episode. When Ghana finalised its sliding-scale royalty regulations in March 2026, diplomatic missions of both the United States and China reportedly urged the government to reconsider, and industry warned of investment consequences. Ghana proceeded. But the episode establishes two things. A unilateral move to capture rent attracts coordinated external pressure from parties that are otherwise strategic competitors, which tells one something about the interest at stake. And a state that acts alone bears the full cost of that pressure, while a floor agreed among the gold-producing states of West Africa would have distributed it. Ghana's willingness to absorb the pressure is admirable and it is not a replicable strategy for a smaller economy.

10.3 The tax convention and what Africa should want from it

The second international dependency is the international tax architecture itself, and here the African position has improved materially. The United Nations Framework Convention on International Tax Cooperation was initiated by the Africa Group in 2022; terms of reference were adopted by an overwhelming majority of member states on 16 August 2024; substantive negotiations began in August 2025 and are structured across 3 workstreams covering the framework convention itself, a first protocol on the taxation of income from cross-border services, and a second on dispute prevention and resolution. Sessions have convened in New York in August 2025, Nairobi in November 2025, New York in February 2026 and August 2026, with a further session scheduled in Nairobi from

30 November to 11 December 2026, and a target of delivering a final text and two protocols to the 82nd session of the General Assembly.

There are three articles that carry the African interest. Article 5 concerns the fair allocation of taxing rights, where the Africa Group has pressed for recognition of taxation where economic activity and markets exist; Article 6 concerns high net worth individuals; and Article 7 concerns illicit financial flows directly. On dispute resolution under the second protocol, many lower and middle income countries have opposed mandatory arbitration on the ground that it transfers sovereignty to external tribunals, which is the same analysis this series applies, in Paper VII, to the governing law and forum module of infrastructure financing.

The fiscal argument of this paper implies a specific negotiating priority that is not currently prominent. The single highest-value provision Africa could secure is not a reallocation of taxing rights over profit, valuable though that is, but a mandatory, public, country by country reporting standard with automatic exchange, because that is the provision that converts an unobservable base into an observable one. The Tax Justice Network's estimate that more than a quarter of global corporate tax losses could have been prevented by publishing reports authorities already hold is, on the analysis of section 9, the international counterpart of the domestic measurement programme. Everything in this paper argues that observation precedes rate. The same holds at the treaty table.

11. Objections

Rent taxation deters investment and capital will leave.

The claim requires three distinctions. Investment responds to expected after-tax return, and a tax confined to returns above a threshold leaves the normal return intact by construction; that is the entire point of the Garnaut and Clunies Ross design. Investment responds to the stability of the rule at least as much as to its level, which is why a published formula keyed to an external price is superior to a discretionary rate even when the formula yields more. And the empirical record does not support the strong version of the claim: Botswana sustained capture of about 95% of mineral rents across 3 decades while retaining its partner in a joint venture now extended to 2054, and Ghana's producers reported record profits in the year immediately preceding its royalty reform. Capital does leave jurisdictions, but it leaves for unpredictability far more readily than for a higher published rate.

Resource revenue corrupts and weakens democratic accountability.

Section 6.5 gives the full answer and it is restated here as a proposition rather than a reassurance. What generates accountability is visibility and the statutory constraint on disposal, not the origin of the revenue. The comparison that matters is not between a rent and an ideal bargained tax, but between a rent and the revenue actually available, which is an opaque consumption tax whose base has been reduced by tax expenditures that in

about 30% of sub-Saharan countries are not even inventoried. The correct response to the rentier state risk is therefore not to forgo the rent but to legislate its visibility: published contracts, a published royalty schedule, an audited quantity, a registered contingent liability and parliamentary appropriation. Every one of those is a design choice.

Commodity prices are too volatile to build a budget on.

Correct, and the objection argues for the sliding scale and the fund rather than against the rent. The instrument set in section 7 addresses volatility directly through symmetry, so that the state's share falls automatically when prices fall, and through the deposit rule, so that the cyclical component never enters the recurrent budget in the first place. It should also be observed that the alternative revenue base is not acyclical. In a commodity-exporting economy, import volumes, and therefore value added tax and customs receipts, are driven by the same commodity cycle, with the difference that the budget does not acknowledge the dependence and therefore does not manage it.

This is irrelevant to countries without minerals.

Section 5 answers this and it is the misunderstanding most likely to cause a finance ministry to set the paper aside. Rent has four families. A state without subsoil deposits holds urban land whose value is rising through public investment it funded, spectrum it allocates administratively at negotiated prices, ports and transit corridors through which regional trade must pass, fisheries within its exclusive economic zone, and in several cases standing forest whose ecological services are currently being priced by others. Property tax collection ratios across most of the continent are negligible; the auction premium on spectrum is routinely forgone; and the ecological family is being coded now, on terms that will determine its distribution for decades. For many non-mineral African economies the available rent is larger relative to output than the mineral rent of a mid-sized resource state, and it is more durable because it does not deplete.

Formalising artisanal mining will destroy the livelihoods it depends on.

This objection deserves respect because the sector supports millions of people and heavy-handed formalisation has damaged them before. The Ghanaian sequence is the answer, and its order is the point. The state did not begin with enforcement. It began by removing the 1.5% withholding tax that penalised the small-scale producer for declaring, and then created a licensed buyer offering a competitive price. Declared exports rose from 63.6 tonnes in 2024 to 103 tonnes in 2025. The miner who previously sold to a smuggler at a discount now sells to a licensed buyer at a better net price, and the state observes the tonnage. Formalisation that raises the producer's net receipt is not a burden on the producer; it is a transfer from the intermediary who was capturing the smuggling margin.

This is resource nationalism, and it will be treated as expropriatory.

The distinction between rent and return on capital is the whole answer and it must be made in the negotiation rather than in the pamphlet. A rent tax properly specified takes only the surplus above the return required to have brought the asset into use; it leaves the investor's normal return whole and takes a share of what the deposit's own quality,

and the world price, produced without the investor's effort. That is not expropriation on any coherent theory of property, and it is the position African negotiators should be equipped to argue on the merits rather than to defend apologetically. The instrument that makes the argument credible is the sliding scale, because a schedule that reduces the state's share automatically when prices fall cannot be characterised as opportunism.

12. Conclusion: The Ledger and the Ground

This paper began from two facts that are not usually placed side by side: that African states collect 16.1% of output in tax against an OECD average of 33.9%, and that the continent holds roughly 30% of the world's mineral reserves, 40% of its gold deposits and about 90% of its chromium and platinum group metals. It has argued that the gap between them is not a capacity problem but a base problem, and it has measured the base problem in four quantities.

The base is invisible, because extractive revenues are not systematically identified in African national revenue classifications, so that the largest rent in most resource economies is not an auditable line. It leaks, because between 321 and 474 tonnes of artisanal gold, worth up to US\$35 billion a year and amounting to as much as 41% of continental production, is produced without being declared. It is shifted, at US\$88.6 billion a year in illicit financial flows equal to 3.7% of GDP, of which 77% of the extractive component runs through a single commodity. And it is given away, through tax expenditures averaging about 3% of GDP that roughly 30% of sub-Saharan states have never inventoried. Consolidated conservatively, the identified leakage is equivalent to between a third and a half of everything African treasuries collect. Against that, they raise 51.2% of their tax revenue from goods and services and reach for levies on the payment rails that the unbanked depend on.

The constructive argument has three parts. Rent is the efficient, equitable and administrable base that consumption is not, and the objection that rent corrodes the fiscal contract mistakes opacity for geology: what builds accountability is visibility and the statutory rule on disposal, both of which are design choices. The instruments are known, are ordered by the institutional capacity each requires, and are already in African use: Ghana's price-linked schedule keyed to an external reference price, Botswana's independent valuator and downstream intelligence function, the Congo's demonstration that a dominant producer moves a world price. And the decisive variable is not the rate in the statute but the state's capacity to observe: what was produced, at what price it is deemed sold, and what costs were properly deducted. Ghana's own history proves the point twice over, since it held a 3% to 12% sliding scale in 1986 and lost it, not because the design was wrong but because it was keyed to a profitability figure the company reported and the state could not check.

That is the finding this paper would most wish to be remembered for. Institutional wealth, the funded and legally protected capacity to know what one owns and what has been taken, is the only asset in the resource economy that compounds with use rather than

depleting. The ore body is a stock being liquidated. The assay authority, the reference-price rule, the cost audit, the beneficial ownership register and the continuity of counsel grow stronger every year they operate, and they are cheap. A continent that funded them would not need to ask anyone for permission to finance itself.

The Omnidox reading is the one with which the series began. Attend to the visible transaction alone, the receipt, the levy, the taxable sale, and one will keep mistaking the fruit for the organism and the ledger for the ground beneath it. Attend to the roots, the surplus that the territory itself generates and that no effort created, and public finance in Africa ceases to be an exercise in extracting more from those who have least, and becomes what it always should have been: the community's claim on the wealth of its own ground.

Unseen roots. Abundant harvest.

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Evidence Dossier: Verified Figures and Findings

Figures are stated as they appear in the argument, each attributed to a primary source. Where an estimate is range-bounded, the range is given rather than a point value. Where a calculation is the author's own, its assumptions are stated.

Claim	Verified figure or finding	Source
African tax levels	Africa average tax-to-GDP 16.1% in 2023 across 38 countries, against 19.6% Asia-Pacific, 21.3% LAC and 33.9% OECD; below 15% in 20 of 38 countries; range 2.9% (Somalia) to 34.0% (Tunisia); the average rose 1.4 p.p. over 2013-2023	OECD/AUC/ATAF (2025)
African tax structure	Taxes on goods and services 51.2% of total tax revenues in 2023, with VAT at 26.6%; CIT 21.4% of total tax revenues and 3.3% of GDP; trade taxes about half of non-VAT goods and services revenue	OECD/AUC/ATAF (2025)
Non-tax revenue and rent	Non-tax revenues averaged 5.9% of GDP in 2023 across 37 reporting countries, from 0.5% (The Gambia) to 33.8% (Lesotho); in Nigeria rents and royalties were 5.9% of GDP and 87.8% of non-tax revenue against a tax-to-GDP ratio of 8.2%	OECD/AUC/ATAF (2025)
The invisible base	Extractive-related revenues are not systematically identified in African national revenue classifications	OECD/AUC/ATAF (2025), methodological discussion
Undeclared gold	321 to 474 tonnes of artisanal gold produced annually in Africa without declaration, up to 41% of continental production, worth up to US\$35 billion; 435 tonnes smuggled in 2022, about	SWISSAID (2024)

Claim	Verified figure or finding	Source
	US\$30.7 billion; 2,569 tonnes worth about US\$115.3 billion entered the UAE undeclared 2012-2022; 66.5% (405 tonnes) of African gold received by the UAE in 2022 unreported by exporters, up from 234 tonnes in 2020; 15 of 54 countries report no ASM production; Mali reported about 6 tonnes against an estimated 30 to 57; Ghana about 34 tonnes undeclared in 2023	
Illicit financial flows	US\$88.6 billion a year, 3.7% of African GDP; trade misinvoicing up to US\$52 billion; of about US\$40 billion of extractive IFFs in 2015, 77% gold, 12% diamonds, 6% platinum; the earlier High-Level Panel estimate was about US\$50 billion a year	UNCTAD (2020); AUC and ECA (2015)
Corporate tax abuse	Global losses of US\$492 billion a year, about two-thirds from corporate profit shifting; US\$1.7 trillion of corporate tax loss over 2016-2021, more than a quarter preventable by public country by country reporting	Tax Justice Network (2024; 2025)
Exchange of information recovery	34 African signatories to the Yaoundé Declaration by 2023; EUR 66 million in additional taxes, interest and penalties reported in 2022, a 77% increase on 2021	Tax Transparency in Africa (2023), reported in TJNA
Tax expenditures	SSA revenue forgone ranging 0.1% to 13% of GDP, averaging about 3% across reporting countries; about 30% of SSA countries hold no inventory; about a third of those with estimates do not publish; about a quarter lack legislative rules; global average 3.8% of GDP and 23.0% of tax revenue across 116 reporting jurisdictions	Liu, Schneider, Sever and Jankulov Suljagic (2025); GTED (2025)
African endowment	About 30% of world mineral reserves, 40% of gold deposits, about 90% of chromium and platinum group metals, about 12% of oil and 8% of gas reserves	United Nations Environment Programme, as reported in International IDEA (2025a)
Resource rents as share of output	Total natural resource rents exceed 60% of GDP in Libya and exceed a third of output in the DRC and the Republic of the Congo	World Bank, World Development Indicators (NY.GDP.TOTL.RT.ZS)
Critical minerals position	DRC produced about 230,000 tonnes of mined cobalt in 2025, roughly three-quarters of world supply; export ban February 2025 replaced in September by a quota of 96,600 tonnes; cobalt approached US\$58,000 per tonne; African	IEA, Global Critical Minerals Outlook 2026

Claim	Verified figure or finding	Source
	lithium output rose 44% in 2025; Zimbabwe commissioned the continent's first lithium refinery in the first half of 2026	
Botswana rent capture	Mineral revenues equal to about 95% of mineral rents between 1983 and 2014; Debswana a 50/50 joint venture since the mid-1970s, from an initial 15% state holding; independent diamond valuator, external audit, downstream participation through the Okavango Diamond Company, and the same international counsel retained for more than 30 years	International IDEA (2025)
Botswana 2025 settlement	February 2025 agreement with De Beers raising the state's share of Debswana rough sales from 25% toward 50% over a decade and extending mining licences to 2054, with a Diamonds for Development Fund; a new sovereign wealth fund established September 2025	Reported settlement terms, February and September 2025
Ghana fiscal repeals	Electronic Transfer Levy (Repeal) Act, 2025; Income Tax (Amendment) Act, 2025 abolishing the 10% betting withholding and the 1.5% withholding on unprocessed gold from small-scale miners; Emissions Levy (Repeal) Act, 2025; the E-Levy was introduced in the 2022 budget with a projected yield of about US\$1.1 billion (GH¢6.96 billion) and missed target	Ministry of Finance, Ghana (2025)
Ghana gold formalisation	Ghana Gold Board Act, 2025 (Act 1140); recorded artisanal exports rose from 63.6 tonnes in 2024 to 103 tonnes in 2025, generating over US\$10 billion; gross international reserves rose from US\$8.98 billion at end-2024 to US\$13.8 billion at end-2025 (5.7 months cover); current account surplus from 1.9% (2024) to 8.3% (2025); cedi appreciation 40.7% in 2025; inflation 23.5% (Jan 2025) to 3.8% (Jan 2026); record output of 6 million ounces in 2025; an additional US\$15 billion in FX inflows reported at the 2026 mid-year review	Ghana Gold Board (2026); Ministry of Finance, Ghana (2026); Bank of Ghana (2026); Ghana Chamber of Mines (2026)
Ghana royalty reform	Minerals and Mining (Royalties) Regulations, 2025 (L.I. 2517), law from 9 March 2026: gold from 5.0% up to US\$1,900/oz rising by 1 p.p. per band to 12.0% above US\$4,500/oz; small-scale 2.0%; lithium 5% to 12% between US\$1,500 and US\$3,200 per tonne; reference price the weekly average LBMA PM fix. Growth and Sustainability Levy on	Republic of Ghana (2025c; 2026); GHEITI (2026)

Claim	Verified figure or finding	Source
	mining reduced from 3% to 1% by Act 1166 on 13 March 2026	
Ghana historical precedent	Section 22 of the Minerals and Mining Law, 1986 (PNDCL 153), with L.I. 1340 (1986) and L.I. 1349 (1987), established a 3% to 12% sliding scale linked to the operating ratio; narrowed to 3% to 6%; a flat 5% introduced in 2010 under Act 794; ministerial discretion added in 2015; companies frequently paid the minimum rate regardless of market conditions	GHEITI (2026)
Producer profitability	For 2025, Newmont earned over US\$7 billion, Gold Fields more than doubled profits, AngloGold Ashanti tripled profit and Perseus recorded US\$421.7 million, up 16%	Company results reported March 2026
External pressure	Diplomatic missions of the United States and China reportedly urged Ghana to reconsider the royalty increase in March 2026	Reuters, 5 March 2026
UN tax convention	Initiated by the Africa Group in 2022; terms of reference adopted 16 August 2024; substantive negotiations from August 2025 across 3 workstreams; sessions in New York (August 2025, February 2026, August 2026) and Nairobi (November 2025; 30 November to 11 December 2026); target delivery to the 82nd session of the General Assembly	United Nations INC documentation; IISD (2026); TJNA (2026)
Continental minerals policy	Africa Mining Vision (2009); African Green Minerals Strategy adopted at the 38th Ordinary Session of the AU Assembly, February 2025; Magaliesberg Communiqué, March 2026	African Union (2009; 2025); Magaliesberg Communiqué (2026)

Table 6. Evidence dossier

Note: all figures are reproduced as published by the cited source. Where an institution has revised an estimate, the most recent published version is used. Calculations by the author are identified as such in the text.

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Nile Valley Multiversity Working Paper Series

Nile Valley Haven, Techiman, Bono East Region, Ghana · NVM-WP 2026/04 · August 2026

Porthologos Press

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