

HRS Resilience Foundation

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Fiscal Transparency Frameworks for Resource-Boom States

Revenue Governance, Institutional Pace and Continuity in Rapid Resource Transitions

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AUTHOR

André Vieira

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About this series. This Technical Paper is the second publication in the HRS Resilience Foundation's Western Hemisphere Readiness Series. It extends the analytical approach introduced in HRS Strategic Report 02, Resilient Infrastructure Investment in the Western Hemisphere,^[8] by applying the HRS Readiness Cycle's Sustain and Learn functions specifically to fiscal institutions in states experiencing rapid resource-revenue growth, and draws on the applied case developed in Country Readiness Assessment 12 — Guyana.^[5]

EXECUTIVE SUMMARY

Fiscal Transparency Frameworks for Resource-Boom States

Fiscal institutions are a readiness capability, not merely an accounting function. When a state's resource-sector revenue scales faster than its fiscal, regulatory and disclosure institutions, the risk is not primarily that money is stolen — it is that decisions about how revenue is saved, spent, and accounted for are made without the governance architecture a state would ordinarily build for a resource base of that size.

This paper is published against the backdrop of Guyana's offshore oil production, which reached approximately 903,000 barrels per day by mid-2026 from a field discovered only in 2015 — one of the fastest resource transformations this series has documented.^[1] It develops an operational framework drawn from that case and applicable to any state experiencing comparably rapid resource-revenue growth, whether from hydrocarbons, critical minerals, or another extractive sector.

The central technical problem is not simply whether a state saves enough of its new revenue. It is whether the state can build transparent revenue-accounting institutions, durable sovereign-wealth governance, and continuity-tested fiscal decision rights at the same pace the underlying resource itself is scaling — rather than importing institutional design only after the revenue has already arrived.

This paper develops an operational framework — the HRS Revenue-to-Institution Framework — around five linked capabilities: revenue visibility, risk-paced institution building, reserve-fund design, investment screening, and public disclosure. These capabilities should operate within clear governance and decision rights and should be measured using pace-based indicators, not only stock-based indicators.

CENTRAL TECHNICAL PROPOSITION

Resilient fiscal institutions for resource-boom states are designed around the pace of revenue growth, not simply its eventual size. The appropriate response may be accelerated institution-building, transparent disclosure systems, diversified investment screening, continuity-tested leadership succession, or a combination of these measures.

SECTION 01

The Technical Problem

Resource-boom fiscal institutions fail at interfaces. A state may have a well-designed sovereign-wealth fund while its revenue-forecasting capacity cannot keep pace with actual production growth; a disclosure law may exist while the public institutions responsible for publishing the data lag behind legislative intent; a reserve-fund withdrawal rule may be sound while the underlying fiscal-management institution has not yet built the staff and systems to apply it consistently across changes in government.

Guyana's experience illustrates the practical scale of this problem. Offshore production rose from first oil in December 2019 to approximately 903,000 barrels per day by mid-2026, a seven-year trajectory with few precedents among resource-exporting states.^[1] For fiscal institutions, the practical implication is to connect revenue forecasting, reserve-fund governance, investment screening, public disclosure, and legislative oversight into one operating picture — before, not after, the revenue scale exceeds what existing institutions were designed to handle.

Failure Mode	Illustrative Mechanism
Forecast lag	Revenue-forecasting capacity calibrated to a pre-boom economy, unable to track actual production growth in real time.
Disclosure lag	Legislative transparency requirements exist, but institutional capacity to publish and contextualize the data lags behind the law's intent.
Concentration	Fiscal-governance expertise concentrated in a small number of officials or a single institution, with limited redundancy.
Reserve-rule drift	Withdrawal or savings rules exist on paper but are not consistently applied across changes in government or fiscal pressure.
Screening gap	Investment and partner-screening capacity has not scaled to match the number and complexity of resource-sector transactions.
Distributional opacity	Aggregate revenue figures are published, but sub-national or sectoral distribution data lags, fueling public distrust.

SECTION 02

Revenue-to-Institution Architecture

The HRS Revenue-to-Institution Framework treats fiscal-institution building as a pipeline with five linked stages, each of which must scale at the pace of the underlying revenue growth rather than at the pace of ordinary institutional development.

Stage	Function	Guyana Illustration
1. Forecast	Track production and price data against fiscal planning assumptions in near-real time.	Average daily production rose from approximately 616,000 barrels per day in 2024 to approximately 902,000 barrels per day in the first half of 2026 as new FPSO capacity came online. ^[1]
2. Capture	Route royalties and profit-oil revenue into a defined, auditable fiscal account.	Revenue flows into the Natural Resource Fund via defined royalty and profit-oil streams. ^[2]
3. Reserve	Apply a transparent, rules-based savings and withdrawal framework.	The Natural Resource Fund Act 2021 strengthened the 2019 framework by establishing clearer statutory withdrawal ceilings and independent board oversight. ^{[2][4]}
4. Screen	Apply consistent, nationality-neutral review to resource-sector investment and ownership transactions.	A multinational offshore consortium with mixed-nationality ownership requires standing regulatory screening capacity. ^[5]
5. Disclose	Publish revenue, reserve-fund and distributional data on a predictable public schedule.	Guyana's Ministry of Finance submits quarterly notifications of petroleum revenue receipts to Parliament. ^[6]

TECHNICAL NOTE

Each stage in the pipeline is only as resilient as its slowest-scaling link; a state with an excellent reserve-fund law but immature forecasting capacity will still make fiscal decisions based on stale assumptions.

SECTION 03

Risk Segmentation and Pace Classification

Not every fiscal-institution gap carries the same urgency. A pace-classification approach prioritizes institution-building investment by the rate at which the underlying revenue is growing, not only by the current absolute size of that revenue.

Pace Category	Revenue Growth Characteristic	Institutional Priority
Rapid-scale	Production more than doubling within a five-year window, as demonstrated by Guyana's production expansion during the 2022–2024 period ^[1]	Accelerated forecasting and reserve-fund capacity building, ahead of ordinary institutional timelines
Steady-scale	Gradual, multi-decade production growth within an established extractive sector	Incremental institutional strengthening aligned with conventional development planning
Transition-scale	A maturing sector shifting from direct extraction toward downstream processing or value capture	Institutional focus shifts toward domestic-value-capture and diversification policy

A rapid-scale classification does not imply institutional failure; it implies that ordinary institutional development timelines, calibrated to steady-scale assumptions, will leave a state's fiscal governance structurally behind its own revenue base for a sustained period unless addressed deliberately.

SECTION 04

Sovereign Wealth and Reserve-Fund Design

Guyana’s Natural Resource Fund, established by the Natural Resource Fund Act 2019 and substantially strengthened by the Natural Resource Fund Act 2021, illustrates both the value and the limits of reserve-fund legislation. The 2021 revision moved fund oversight from the finance minister alone to an independent board, set clearer statutory withdrawal ceilings for budgetary transfers, and assigned operational management to the central bank; the IMF’s 2022 Article IV review credited the revised Act with more prudent management of oil revenue.^{[2][4]} The withdrawal schedule was itself subsequently amended by the Fiscal Enactments (Amendment) Act 2024, which came into force on 6 February 2024; the 2021 framework is discussed here as an institutional-design milestone — independent governance, rules-based ceilings — rather than as the current withdrawal formula.^[3] By 2026, Guyana had withdrawn approximately US\$5 billion from the Fund since first drawing on it in 2022. In 2022, oil revenue contributed roughly 14% of the national budget, according to OiINOW.^[2]

Design Element	Function	Technical Consideration
Independent governance board	Separates fund oversight from any single minister or official	Reduces concentration risk identified in Section 01
Rules-based withdrawal ceiling	Scales permissible spending with revenue growth rather than a fixed cap	Must be paired with disciplined application across political cycles
Offshore custodial account	Holds reserves outside the domestic financial system	Reduces exposure to domestic currency and liquidity risk
Investment mandate	Governs whether reserves are held as cash or invested for return	A fund without an active investment mandate forgoes return but simplifies risk management during early-stage accumulation

SECTION 05

Investment Screening and Partner Diversification

Resource-boom states frequently attract multinational investment with mixed-nationality ownership structures inside the same project. Guyana's offshore Stabroek Block consortium — ExxonMobil, Chevron, and China's state-owned CNOOC — illustrates this directly: American and Chinese commercial interests hold stakes in the same venture, a structure distinct from cases where competing powers vie for exclusive control of a single asset.^[5] The technical task for fiscal and regulatory institutions is not to resolve which investor is preferable, but to build consistent, nationality-neutral screening capacity proportional to the transaction volume and complexity the resource sector generates.

Screening Function	Technical Requirement
Ownership-transparency verification	Beneficial-ownership data current and cross-referenced across all consortium participants.
Transaction-volume scaling	Screening-staff capacity sized to the actual rate of new licensing rounds and transactions, not a static baseline.
Nationality-neutral criteria	Published, consistent review standards applied identically regardless of investor origin.
Cross-agency coordination	Energy-sector regulators, financial-intelligence units and customs authorities share screening data.

SECTION 06

Institutional Continuity Across Leadership Transitions

Fiscal institutions built around a specific official's expertise, rather than standing institutional capacity, are vulnerable to loss when that individual's tenure ends. A similar continuity risk recurs across institutional settings in the Western Hemisphere: prosecutorial and regulatory capacity built against a specific challenge can be lost within months of a change in leadership if it has not been deliberately institutionalized.^[7] For fiscal institutions specifically, the equivalent risk is reserve-fund and disclosure expertise concentrated in a small number of individuals inside a finance ministry or central bank, without succession planning or documented standard operating procedure.

Continuity Risk	Mitigation
Single-official dependency	Document fiscal-governance procedures independent of any one individual's institutional memory.
Election-cycle disruption	Statutory, rules-based reserve-fund governance that survives changes of government by design, not informal practice.
Board or ministerial turnover	Staggered board terms and documented handover procedures for independent fund-oversight bodies.
Technical-capacity attrition	Sustained investment in domestic fiscal-analysis training, reducing dependence on any single cohort of officials.

SECTION 07

Revenue Transparency and Public Disclosure Systems

Guyana’s Natural Resource Fund Act requires notification of petroleum-revenue receipts to Parliament within three months of receipt; in practice, the Finance Ministry has maintained a recurring quarterly notification series, and receipts are published on the central bank’s website on a recurring basis.^{[6][2]} This is a technically sound disclosure architecture; its effectiveness depends on whether publication is predictable and sustained across political cycles, and whether the data published allows citizens and oversight institutions to independently verify, not merely receive, the reported figures.

Disclosure Element	Technical Standard
Publication cadence	Fixed, predictable schedule (e.g., quarterly) maintained regardless of political circumstances.
Legislative notification	Formal submission to the national legislature, not only public website publication.
Disaggregation	Revenue broken out by royalty, profit-oil and other streams, not only as an aggregate figure.
Independent verifiability	Published data sufficient for external auditors or civil-society analysts to reconcile against production and price data.

Technical caveat: Publication frequency and format are necessary but not sufficient; disclosure systems should be evaluated against whether affected communities and oversight institutions can meaningfully act on the published information, not only whether the information is technically available.

SECTION 08

Governance and Decision Rights

Clear decision rights — who may authorize a reserve-fund withdrawal, who may approve a new investment-screening exception, who is accountable when forecast and actual revenue diverge — should be defined before a fiscal crisis or a rapid revenue increase forces an ad hoc decision under pressure. Guyana's 2021 reform, which moved fund oversight from the finance minister alone to an independent board, is itself an example of decision rights being clarified in response to an earlier, less-defined structure.^[4]

Decision Domain	Illustrative Authority Structure
Reserve-fund withdrawal	Independent board approval against statutory ceilings, reviewed by the legislature.
Investment-screening exceptions	Defined inter-agency review process, not single-official discretion.
Revenue-forecast revision	Technical fiscal-analysis unit with documented methodology, insulated from political pressure to overstate or understate projections.
Emergency fiscal measures	Pre-defined triggers and legislative notification requirements, avoiding improvised crisis-era rule changes.

SECTION 09

Performance Measurement

Resource-boom fiscal institutions should be measured using pace-based indicators — how quickly forecasting, screening and disclosure capacity scale relative to revenue growth — not only stock-based indicators such as total reserve-fund balance.

Indicator	What It Measures
Forecast-to-actual variance	How closely fiscal planning assumptions track realized production and revenue.
Disclosure-cadence adherence	Whether publication schedules are maintained consistently, including through political transitions.
Screening-capacity ratio	Investment-screening staff and systems capacity relative to transaction volume.
Reserve-rule adherence	Consistency of actual withdrawals against statutory ceilings over time.
Institutional-continuity score	Share of fiscal-governance procedures documented independently of any single official's tenure.

SECTION 10

Implementation Framework

The five-stage Revenue-to-Institution Framework translates into a practical sequence applicable to any rapid-scale resource-boom state, not only the Guyana case examined here.

Phase	Primary Activity	Expected Output
1. Baseline	Map current forecasting, reserve-fund, screening and disclosure capacity against the pace of revenue growth.	Institutional-pace baseline.
2. Legislate	Establish or strengthen statutory reserve-fund and disclosure requirements with independent oversight.	Rules-based fiscal-governance architecture.
3. Staff	Scale fiscal-analysis and investment-screening staff capacity to transaction and revenue volume.	Reduced concentration and continuity risk.
4. Disclose	Establish predictable, disaggregated public-reporting cadence with legislative notification.	Verifiable public revenue record.
5. Institutionalize	Document procedures and succession planning independent of any single official or administration.	Continuity across political and leadership cycles.

SECTION 11

Technical Design Checklist

Element	Design Question
Reserve-fund statute	Does the fund have an independent governance board separate from any single ministry?
Withdrawal rule	Are ceilings rules-based and tied to defined fiscal need, rather than discretionary?
Custodial arrangement	Are reserves held in a transparent, auditable account structure?
Forecasting capacity	Is fiscal planning updated against actual production data on a defined cadence?
Screening capacity	Does investment-screening staffing scale with transaction volume, not a static baseline?
Disclosure cadence	Is revenue data published and submitted to the legislature on a fixed, predictable schedule?
Continuity documentation	Are fiscal-governance procedures documented independently of any one official's institutional memory?

SECTION 12

Conclusion

Guyana's experience — offshore production rising from zero to approximately 903,000 barrels per day within seven years, managed through a Natural Resource Fund that was itself substantially redesigned only two years after its initial creation — demonstrates both the real risk and the real achievability of fiscal institutions keeping pace with rapid resource-revenue growth.^{[1][2][4]} The technical lesson is not specific to oil, or to Guyana. Any Western Hemisphere state experiencing comparably rapid resource-revenue growth, whether in hydrocarbons or critical minerals, faces the same underlying design question: whether reserve-fund governance, investment screening, and public disclosure are built to scale at the pace of the revenue itself, or whether institutional design is imported only after the revenue has already arrived.

The HRS Revenue-to-Institution Framework developed in this paper — forecast, capture, reserve, screen, disclose — offers a structured starting point for states, international partners, and technical-assistance providers evaluating fiscal-institution readiness in rapid-scale resource environments.

CLOSING TECHNICAL NOTE

A reserve-fund law, however well drafted, is a necessary but insufficient condition for fiscal readiness; the determining factor is whether the forecasting, screening, staffing and disclosure capacity around that law scales at the same pace as the resource revenue it is designed to govern.

SELECTED REFERENCES

Selected References

- [1] Ministry of Finance, Guyana. 2023 Budget Presentation (Finance Minister Dr. Ashni Singh reporting full-year 2022 average production of approximately 297,000 barrels per day); Mid-Year Report 2026 (average crude production of approximately 902,000 barrels per day in the first half of 2026); Department of Public Information, Guyana, government-reported production of approximately 903,000 barrels per day in April 2026. 2022–2026.
- [2] OilNOW. A crash course on Guyana's oil fund (Natural Resource Fund Act 2019 and 2021; approximately US\$5 billion withdrawn to date; Federal Reserve Bank of New York custodial account; 14% of 2022 budget from oil revenue). 2026.
- [3] Parliament of Guyana. Fiscal Enactments (Amendment) Act 2024, Act No. 2 of 2024 (amending, among other statutes, the Natural Resource Fund Act 2021's withdrawal provisions). Enacted 6 February 2024.
- [4] International Monetary Fund. 2022 Article IV Consultation — Guyana (assessment of the Natural Resource Fund Act 2021 amendments and withdrawal restraint). 2022.
- [5] HRS Resilience Foundation. Country Readiness Assessment 12 — Guyana: Institutional Readiness, Offshore Oil Security and Territorial Sovereignty (Stabroek Block consortium ownership: ExxonMobil 45%, Chevron 30%, CNOOC 25%). September 2026.
- [6] Ministry of Finance, Guyana. Notification to Parliament of Petroleum Revenues Paid into the Natural Resource Fund (recurring quarterly notification series, pursuant to Section 33(2) of the NRF Act 2021).
- [7] HRS Resilience Foundation. Policy Brief 03 — Operationalizing the Security Pillar of the Shield of the Americas: Lessons from Ecuador, Chile and Panama (institutional-continuity risk pattern applied to prosecutorial and regulatory capacity). September 2026.
- [8] HRS Resilience Foundation. Strategic Report 02 — Resilient Infrastructure Investment in the Western Hemisphere. 2026.

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André Vieira, MD

FOUNDER & CHAIRMAN, HRS RESILIENCE FOUNDATION

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