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Building a Data-Driven Public Sector in Guinea:

A Roadmap for Interoperability and Efficiency

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Executive Summary

Guinea's Simandou 2040 strategic development plan sets the ambitious goal of transforming the country through industrialisation, infrastructure expansion, and economic diversification, with a clear focus on leveraging its vast mineral wealth. At the core of this vision is the development of digital infrastructure, which aims to modernise public administration and enhance transparency.

However, a fragmented data ecosystem compromises the country's ability to realise these ambitions. Critical information on health, education, and infrastructure remains siloed within ministries, collected manually or through incompatible systems, leading to inefficiencies in resource allocation, delayed policy responses, and poor coordination across government.

This fragmented system also undermines progress towards national goals of sustainable development, inclusive growth, and infrastructure delivery, while limiting opportunities for innovation and evidence-based policymaking. The core issue is not a lack of strategy but the failure to implement foundational data systems that are essential for a connected, data-driven government.

Despite strides in digitalisation, Guinea still lacks the necessary digital public infrastructure (DPI) and interoperability frameworks to effectively share and utilise data. Without interoperable systems, ministries cannot collaborate, and the government cannot make informed, evidence-based decisions.

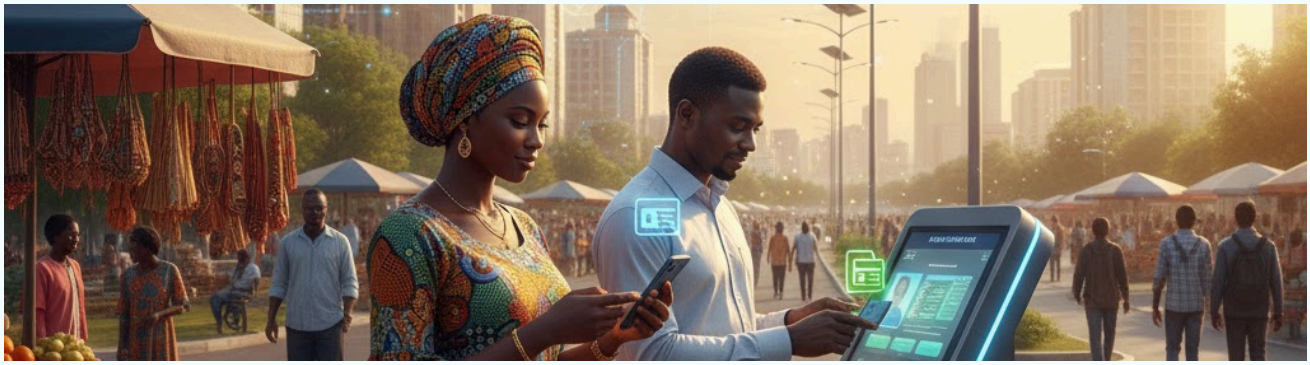
This policy brief proposes a practical roadmap for building an integrated, interoperable data ecosystem that supports transparent, efficient, and citizen-centred governance.

It calls for a shift from isolated digital initiatives to a cohesive, national approach grounded in shared standards, responsible data governance, and institutional collaboration. To overcome resistance and ensure success, the government must build a coalition of champions and demonstrate quick wins in data interoperability.

By prioritising this transformation, Guinea can unlock the full potential of its digital future, revolutionise public service delivery, and pave the way for a truly connected, data-driven state. The time for fragmented digital efforts is over; the era of interoperable, data-powered governance must begin now.

1. Introduction:

The Case for Stronger Data Foundations



Across Africa, countries are investing in DPI, such as national identification systems, digital payment platforms, and e-services, to modernise governance. However, these tools only deliver results when the underlying data is accurate, interoperable, and trusted. Guinea has taken important steps toward digitalisation and growing its digital economy, including:

1

The Koloma National Data Centre, designed to host public sector data securely and enhance digital sovereignty;

2

An Electronic Document Management System for record-keeping and workflow automation

3

A unified government web portal to streamline public access to services;

4

The eTax platform for online tax payment;

5

A single trade window to simplify export and import procedures; and

6

An Integrated Public Services Portal to centralise service delivery.

These efforts demonstrate political will and progress. However, data remains siloed within ministries or stored in paper-based systems. Ministries and agencies often collect information independently using incompatible systems, hindering coordination, policy coherence, and accountability. Guinea's data landscape is characterised by disparate systems developed under donor projects or sectoral mandates. Most public data systems in Guinea are not integrated or interoperable. while some ministries have digital platforms, there is no national registry or inventory of datasets. This leads to duplication, inefficiency, and security vulnerabilities.

As a result, policy decisions rely on incomplete information, undermining Guinea's capacity to deliver on national goals under Vision 2040[1]. The case studies below on managing child vaccination and health personnel data buttress this point

Table 1: Case studies 1 and 2

Case study 1: Vaccination and school enrollment data disconnect.	**Case study 2: Health personnel data management issues:**
Child vaccination data managed by the Expanded Program on Immunisation (EPI) and school enrolment data managed by the Ministry of Primary and Secondary Education (MEPUA) are not linked, as they use different identifiers without common fields, hindering the identification of unvaccinated children at school entry and causing redundant data collection and delayed vaccination statistics.	The Ministry of Labour and Public Service and the Ministry of Health maintain separate databases for public servants and health staff, respectively, leading to unsynchronised assignments, discrepancies in staff presence records, and difficulties in workforce planning and auditing.

Source: Author's elaboration

[1]. Simandou2040 : Découvrez le programme ambitieux de développement de la Guinée - Simandou - 2040 Simandou 2040 Projet Simandou 2040 Simand

"Vision 2040 for Emerging Guinea" recognises digital transformation as a key driver of efficiency and transparency. Yet, this vision cannot be fully realised without clear standards, data-sharing protocols, and an institutional home for data governance.

2. Why Interoperability Matters

Modern governance depends not just on collecting data but on making it work across institutions. Data interoperability allows different systems to "speak the same language" through common standards, interfaces, and governance frameworks. It is the foundation of effective DPI, enabling seamless coordination between ministries, private firms, and citizens.

Globally, countries such as Estonia (through X-Road), India (through the Data Empowerment and Protection Architecture), and Kenya (through Huduma Namba) demonstrate how interoperable data ecosystems can reduce costs, speed up service delivery and enhance trust. Guinea can draw from these models to design systems suited to its institutional and resource realities.

Within Africa, the African Union's Data Policy Framework (2022) and Digital Transformation Strategy (2020–2030) call for harmonised standards and cross-border data flows to support regional integration. Guinea's alignment with these frameworks will strengthen its digital economy and competitiveness within ECOWAS and beyond.

3. Problem Analysis: The Cost of Data Fragmentation

Guinea's public sector faces a structural data fragmentation issue that affects governance efficiency, service delivery, and fiscal management . ***Key dimensions include:***

3.1. Inefficient Public Spending and Weak Accountability,

Budgeting and resource allocation are hampered by outdated or incomplete data. Ministries often make funding decisions without reliable evidence of local needs. For instance, discrepancies between population data and school enrolment records lead to overfunding in some regions and underfunding in others. A 2023 audit by UNICEF found that Guinea's Country Office spent over $34 million on cash transfers and supplies between January 2021 and October 2022, but lacked robust systems to manage associated risks, underscoring how fragmented data environments can compromise fiscal oversight and resource targeting[2].

The absence of centralised and interoperable systems makes it difficult to track public spending or assess policy results. Within Guinea's public finance system, there is an absence of an integrated platform among three key platforms: SIGPIP (investment planning), PLEB (budget preparation), and Expenditure Chain (budget execution). The absence of automated data flows leads to manual data handling, resulting in inefficiencies, data errors, recurring delays, information loss, reduced transparency and accountability, and erosion of citizen trust.

The key issues here stem from system fragmentation, as SIGPIP, PLEB, and Expenditure Chains operate independently, necessitating manual data export and import, which leads to time-consuming and error-prone processes. The manual workflows involved in data transfer, verification, transformation, and import are labour-intensive and prone to errors, duplications, and inconsistencies. These inefficiencies result in operational delays, with budget development often postponed by 2–3 months, affecting national planning and incurring significant opportunity costs and the risk of misaligned funding.

Furthermore, high error rates, compliance challenges, audit costs, and missed opportunities arise from inefficient data handling and limited automation, placing additional strain on the organisation. Staff experience high stress due to repetitive tasks, frequent coordination meetings, and complex file versioning, contributing to demotivation and potential turnover. Technological limitations, such as reliance on fragile Excel scripts, non-scalable systems, and redundant file storage, further hinder growth and operational efficiency.

These systemic weaknesses have far-reaching consequences for efficiency, transparency, and financial oversight. Weak data governance across ministries causes audit reports to take years to finalise. . The 2021 World Bank Public Financial Management

[2]. Guinea CO - Final audit report 4 May 2023

Report found that fragmented accounting systems and manual data collection slow oversight and increase opportunities for fund misappropriation. Similarly, a 2022 World Bank review noted that project expenditure reports in Guinea were often inconsistent and difficult to verify, further undermining public trust.[3]

The absence of a centralised data portal hampers citizens' ability to access information on government spending or track service delivery outcomes, reducing public oversight and accountability. A 2023 Afrobarometer survey revealed that only 20% of Guineans trust government institutions' transparency regarding resource use, citing limited access to reliable, centralised information as a key factor[4].

3.2. Delayed Policy Response

When data on health, agriculture, or infrastructure is unavailable or outdated, the government's ability to respond to emergencies such as epidemics, floods, or market shocks, is severely constrained. This challenge is illustrated by recent crises where limited data delayed national responses, ***including:***

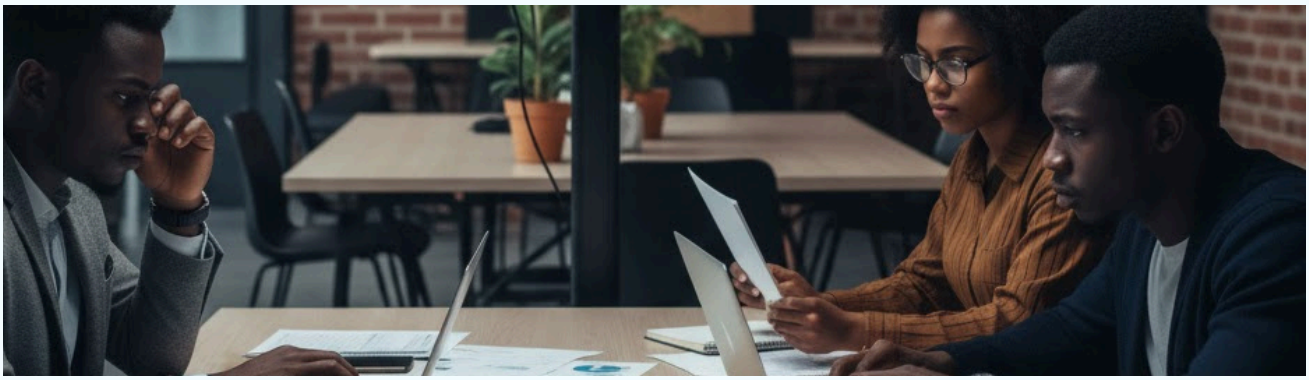
Table 2: Case Studies 3, 4, and 5

Case 3: Epidemic Response: Ebola, Measles, and COVID-19	**Case 4: Flood Response: June, July and August 2025 Floods across the country**	**Case 5: Agricultural Market Shocks: Food Security and Fertilizer Crisis**
Guinea's health system has faced repeated outbreaks, including Ebola (2014–2016, 2021), Measles, Lassa Fever, and COVID-19. A 2023 study in BMJ Global Health found that while Guinea improved its outbreak responses over time, advanced learning and data integration remained limited. The lack of interoperable disease surveillance systems and real-time data sharing across districts delayed early detection and response coordination[5].	Heavy rains in July and August 2025 caused severe flooding across 13 of 38 prefectures. An estimated 5,000 persons were displaced, with disrupted access to clean water, healthcare, and shelter. However, delays in needs assessments and response logistics were attributed to the absence of up-to-date infrastructure and population data, which hindered rapid deployment of aid[6].	Agricultural data systems in Guinea suffer from poor quality, outdated standards, and delayed reporting. These gaps limit the government's ability to target fertiliser subsidies and food aid effectively, especially in rural areas facing acute food insecurity[7].

Source: Author's elaboration

[3]. World Bank, Guinea Public Expenditure Review," Investing in Human Capital to Protect the Future", 2021
[4]. Afrobarometer, "Across Africa, public trust in key institutions and leaders is weakening", Dispatch No. 891, October 2024
[5] How has Guinea learnt from the response to outbreaks? A learning health system analysis
[6] Guinea-Flash-Update-Floods-25-August-2025.pdf.pdf
[7] Food security and agricultural data in Guinea | Global Partnership for Sustainable Development Data

3.3. Lost Opportunities for Innovation



Private sector innovators, researchers, and civil society lack access to quality and reliable open government data that could be used to develop solutions in agriculture, transport, or health. Weak data-sharing frameworks thus stifle digital innovation, reduce collaboration, and generate significant economic and institutional costs including wasted resources, missed opportunities, and declining public trust

Also, fragmented data infrastructure, characterised by disparate health, education, and social protection databases, significantly impedes comprehensive multi-sector policy evaluation. The 2022 UNICEF assessment of Guinea's data systems specifically identified these incompatible platforms as the primary barrier to robustly evaluating integrated development initiatives, subsequently diminishing accountability for cross-sectoral outcomes[8]

For example, the government and city transport authorities have important information about bus routes, schedules, stops, and registered commercial vehicles, but this data is not shared publicly in an easy-to-use digital format. Because of this, local tech startups cannot create helpful public transit apps, and companies that handle deliveries or rides cannot plan the fastest or most efficient routes. This lack of open data leads to higher business costs, wasted time for people, and missed chances to build a modern digital logistics sector. As a result, Guinea's ability to innovate and improve its transportation system is held back.

Similarly, critical agricultural data on soil quality, rainfall patterns, water levels, and the spread of agricultural pests is collected by government agencies but remains locked away and inaccessible. Without open access to this information, local tech innovators cannot develop digital tools to help farmers make smarter planting and harvesting decisions, and financial service providers cannot offer custom insurance or credit products that protect farmers against climate risks. As a result, farmers stay vulnerable to unpredictable weather, agricultural

[8] Unicef Guinea, Annual Report 2022

productivity stays low, and the country misses out on modernising its agricultural sector, one of its most important engines for economic growth and diversification.

Guinea's limited access to open data is a significant barrier to innovation and development, as highlighted by its low scores in the Open Data Inventory (ODIN) 2020 – ranking 118th out of 187 countries with an overall score of 43/100, and just 35/100 for openness. Critical sectors such as health outcomes, education facilities, and agriculture and land use each score poorly, indicating substantial gaps in publicly available datasets. This lack of accessible, machine-readable information prevents startups, researchers, and civic tech groups from creating solutions that address local challenges, further hindering economic diversification and resilience in the face of climate and market uncertainties[9].

4. Key Findings: Root Causes of Weak Data Systems

The review identifies five interrelated causes behind Guinea's fragmented data environment:

Absence of Common Data Standards

Ministries and agencies collect and store data in different formats, using incompatible software. This prevents integration and makes aggregation nearly impossible. ***Examples include:***

Table 3: Case studies 6, 7, and 8

Case 6	Case 7	Case 8
The Ministry of Education in Guinea gathers school enrollment and teacher information either by hand or through regional Excel-based tools, while the Ministry of Health relies on DHIS2, a digital platform backed by international partners, to monitor health indicators. However, these two systems operate in isolation, lacking interoperabilty due to the of	The Energy Ministry stores progress reports as scanned, non-searchable PDFs; the Planning Ministry uses unstructured Excel spreadsheets with inconsistent column headers for financial data; and the Environmental Agency records compliance information in a proprietary GIS system. These inconsistencies make it nearly impossible for researchers or auditors to	Guinea's Single Trade Window (GUCEG) streamlines customs and port activities, but the Ministry of Finance manages separate systems for tax and revenue collection, like eTax. Since these platforms were built independently through different donor initiatives and do not follow standardised data exchange protocols, this

[9] Unicef Guinea, Annual Report 2022

shared metadata, application programming interface (API) integration, or a national data dictionary. This siloed approach prevents effective cross-sector analysis, such as understanding how school health initiatives or nutrition programmes influence educational outcomes	aggregate and analyse project data efficiently, often requiring extensive manual data transcription and cleaning. Consequently, there is no unified, accessible record of project performance, costs, and compliance, which hinders external oversight and allows inefficiencies like cost overruns to remain hidden.	this results in duplicated business registration records and delays when reconciling trade and tax data

Source: Author's elaboration

The recommended solution is the adoption and strict enforcement of data standards, ensuring all systems use common identifiers, consistent terminology, and open, accessible file formats.

Limited Interoperability Infrastructure

While digital connectivity has improved, rural internet coverage remains weak, impacting public institutions in such regions. In these areas, real-time data exchange is impossible, forcing agencies to rely on paper-based processes that create data loss. Also, the absence of a secure, central data exchange platform and limited investment in cloud infrastructure or government data centres and API-based systems limit real-time data sharing between institutions.

A clear example of how limited interoperability infrastructure affects Guinea can be seen in the journey of health data from a rural area, such as Kankan, to the Ministry of Health in Conakry.

In remote villages, community health workers record patient visits, symptoms, and vaccinations on paper because unreliable electricity and weak mobile networks prevent real-time digital reporting. At the end of each month, these records are either physically delivered or manually transcribed into simple spreadsheets at the district health office, leading to significant delays and opportunities for data loss. In urgent cases, such as suspected outbreaks, reports still depend on occasional mobile phone calls or are delayed until the next scheduled collection, meaning the Ministry of Health often receives outdated information.As a result, authorities cannot respond quickly to health

emergencies or deploy targeted vaccination campaigns, underscoring how both connectivity gaps in rural areas and the lack of digital data exchange systems hinder timely and effective decision-making.

After health data makes its way to Conakry, a major obstacle persists: government agencies struggle to share this information efficiently due to the absence of a secure, centralised API-based platform. Even with reliable internet in the capital, the Ministry of Health's database and the National Statistical Office's systems cannot communicate directly. Instead, IT staff must manually export aggregated data such as patient records from the Ministry of Health and send it to the National Statistical Office by email, typically as a large Excel file. This cumbersome, manual process is error-prone, slow, and not standardised, often resulting in outdated or incomplete data being passed along. As a result, critical agencies like the Ministry of Finance and Planning receive health statistics that are no longer current, impairing their ability to create timely budgets and allocate resources effectively. This situation highlights how the lack of digital interoperability at the national level further delays data-driven decision-making and planning, compounding the issues that begin with rural data collection challenges.

As of early 2024, only 33.9% of Guinea's population had internet access, with over 60% living in rural areas.

Mobile broadband is more common than fixed-line services, but rural regions still suffer from weak connectivity, high data costs, and low digital literacy. *(Guinea | Digital Watch Observatory).* This significantly limits the ability of local health centres, schools, and municipal offices to participate in national digital platforms, forcing them to rely on manual reporting and paper-based records.

Despite advances such as the implementation of platforms like eTax, the Single Trade Window (GUCEG), and the Koloma National Data Centre, Guinea still lacks a secure, unified system for exchanging data across government ministries and agencies. These digital platforms function in isolation, typically developed through separate donor initiatives without shared APIs or interoperability standards, which effectively prevents seamless cross-sector data sharing and integration.

Guinea faces significant challenges due to its limited cloud infrastructure and lack of a comprehensive national cloud strategy. Without scalable government cloud services, most ministries are forced to store data locally or rely on disparate third-party solutions, none of which adhere to a unified API framework for secure, real-time data exchange. This fragmented approach means that critical information systems, such as health data managed through DHIS2, remain isolated and cannot be integrated with education or social

protection platforms, ultimately hindering the delivery of coordinated services and preventing meaningful cross-sector analysis. The absence of standardised, interoperable digital solutions further exacerbates these issues, leaving agencies unable to efficiently share or leverage data for improved governance and public service outcomes.

Weak Institutional Coordination

There is generally a lack of a central authority responsible for enforcing data-sharing standards and coordinating digital policies across sectors, resulting in fragmentation. This highlights Guinea's urgent need for stronger institutional coordination.

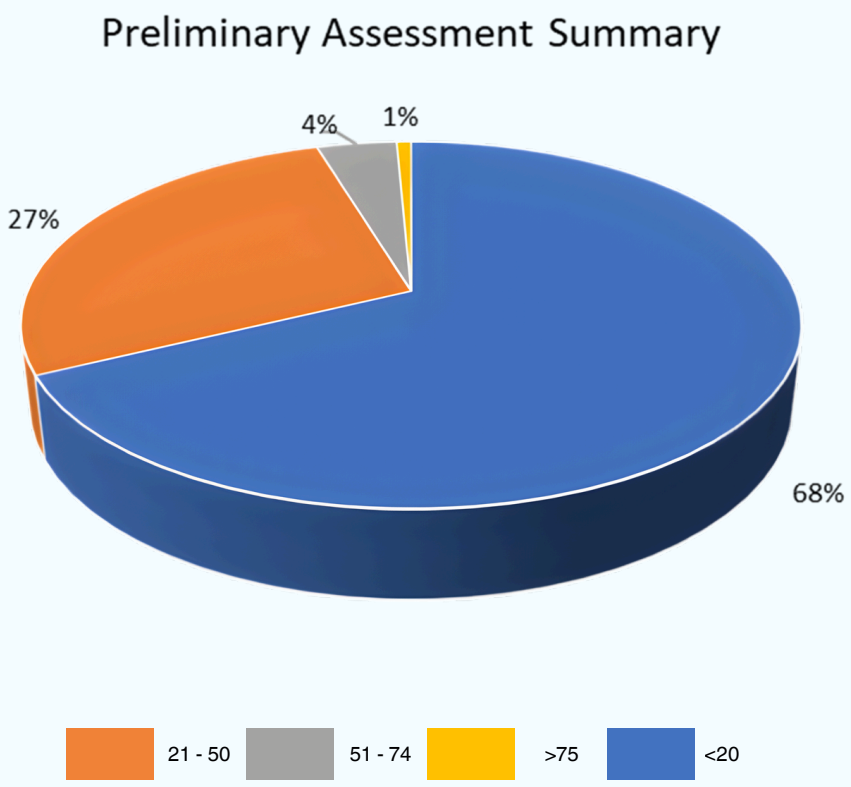
The National Institute of Statistics (INS) releases macroeconomic and demographic data using its own reporting formats and survey schedules, while individual sectoral ministries, such as those of Agriculture and Energy, manage separate, project-based databases that vary in structure, measurement units, and update frequency. Because of the lack of a centralised data inventory or a standardised approach to data management, the INS is unable to effectively aggregate or verify these disparate sectoral datasets for use in national planning or Sustainable Development Goal (SDG) reporting, which further underscores the need for harmonised data standards across government entities

Low Data Literacy and Limited Human Capacity

Many ministries lack trained data analysts or data management officers. Data management is often viewed as a bureaucratic task rather than a strategic function for decision-making. This limits the ability of institutions to turn information into actionable insights.
A preliminary Assessment report of the National Agency for State Digitalisation, 2024 was conducted by the International Certification of Digital Literacy (ICDL) with the support of the National Agency for State Digitalisation, involving 835 participants.

The assessment was carried out from November 22 to 24, 2022, with participating staff from various ministries and government agencies. The ICDL Compass assessment focused on six office productivity suites, emphasising digital skills and cybersecurity knowledge. The summary report shows the following:

Figure 1. Preliminary Assessment Summary



Source: Author's elaboration using data fromICDL & National Agency for State Digitalisation (2024)

Only 5% of participants achieved a score equal to or higher than 51 out of 100, indicating an extremely low level of digital proficiency among respondents.

Weak Legal and Governance Frameworks

Guinea has yet to adopt a comprehensive data-sharing and open data law. This creates uncertainty over data ownership, security, and privacy, discouraging both sharing and innovation.

Guinea's Law No. L/2016/037/AN on cybersecurity and personal data protection establishes fundamental definitions and principles for the processing of personal and sensitive data, with a primary focus on safeguarding individual privacy and regulating cybercrime.

Despite these provisions, the law does not provide a comprehensive national framework for data sharing or open data access, leaving significant gaps in interoperability and the public reuse of government data. As a result, while personal data protection is addressed, the absence of clear legislation governing open data and data sharing continues to impede collaboration, innovation, and the development of digital solutions across sectors in Guinea.

5. Implications: A Nation Held Back

If left unaddressed, these weaknesses will continue to undermine Guinea's digital transformation and its broader development vision. The implications are threefold:

Institutional: Government agencies will remain unable to coordinate effectively, perpetuating duplication and inefficiency

Economic innovation: Incomplete data leads to misinformed investments, resource waste, and slower economic growth. Entrepreneurs' lack of access to open datasets also limits their capacity to build cost-effective and innovative solutions.

Social: Citizens will continue to face inequitable service delivery and reduced trust in government institutions.

6. Recommendations and Implementation Roadmap: Building Guinea's Data Foundations

The following 6 mandates and accompanying roadmap aim to transition Guinea's data governance from fragmented, paper-based processes to an efficient, digital, and trusted ecosystem. They address both institutional/legal and technical/capacity challenges, ensuring that data becomes a strategic national asset

Technical & Capacity Mandates (Addressing Interoperability & Literacy)

Table 4: Technical and Capacity Mandates

Key Action	Tangible Mandate	Lead Actor/ Institution	
1. Mandate Common Data Standards	Task the National Institute of Statistics (INS) to create and enforce a National Data Standards Catalogue (including common identifiers, coding, and API protocols) for the three priority sectors: Health, Education, and Public Finance by the end of 2026. The Education Ministry's digital school registry pilot can serve as an early proof of concept for mandatory data standards. See Appendix 1.	INS, MPTEN, Ministry of Pre-University Education and Literacy	Ensures consistency, compatibility, and reliability of government data, enabling interoperability and more accurate insights to guide decision-making.

Key Action	Tangible Mandate	Lead Actor/ Institution	
2. Operationalise the Koloma National Data Centre as Guinea's DPI Hub	Officially designate the newly inaugurated Tier III National Data Centre as the Secure Government Data Exchange Hub. All inter-ministerial data sharing must transition from email/manual files to API-based services hosted through this central, secure infrastructure.	MPTEN, Ministry of Finance (for funding and security)	Establishes a shared infrastructure for efficient and secure information exchange.
3. Build Data Literacy and Stewardship Culture	Formally integrate certified Data Literacy and Data Security modules into the civil service promotion requirements, leveraging the existing e-Learning platform to train 100% of all data managers and analysts within one year.	Ministry of Labor and Public Service, MPTEN	Ensures a data-literate public workforce and a sustainable data culture

Source: Author's elaboration

Institutional & Legal Mandates (Addressing Accountability &Trust)

Action	Mandate	Lead Actor/Institution	Expected Outcome
4. Establish a National Data Sharing and Interoperability Framework + Open Data Policies	• Develop a comprehensive framework defining principles, responsibilities, and standards for data sharing and exchange. • Draft and enact a National Data Sharing and Open Data Law mandating proactive publication of high-value, non-personal government data in machine-readable formats (e.g., procurement contracts, budget execution, public works status).	MPTEN, National Agency for State Digitalisation	Establishes a unified vision and institutional anchor for data-sharing across government. Also provides legal certainty, enhances citizen trust, and facilitates responsible innovation.
5. Operationalise Data Governance Authority	Inaugurate and staff the National Commission for the Protection of Personal Data (CNIL), as required by Law L/2016/037/AN, and empower it as the central body for cross-sectoral data sharing enforcement and compliance.	Ministry of Justice, MPTEN	Greater enforcement and oversight.

Source: Author's elaboration

6. Ratify International Standards	● Finalise the ratification and national implementation of the African Union's Malabo Convention on Cybersecurity and Personal Data Protection to provide a robust framework for data sovereignty and cross-border digital trade.	MPTEN, Ministry of Foreign Affairs, Parliament	Alignment with best practices.

Source: Author's elaboration

Implementation Roadmap

To guide sequencing and prioritisation, the table below outlines immediate, medium-term, and long-term actions for implementing Guinea's Data Backbone.

Table 6: implementation Roadmap

Time Horizon	Mandate
Immediate (0–12 months)	• Establish the National Data Governance Council. • Finalise and operationalise the Koloma National Data Centre. • Initiate a data standardisation pilot in 2–3 ministries (e.g., Health, Finance, and Education).
Medium-Term (1–3 years)	• Roll out the interoperability platform nationwide. • Launch data capacity-building and fellowship programmes. • Enact data governance and open data legislation.
Long-Term (3–5 years)	• Institutionalise data-sharing practices across ministries. • Expand the national open data portal. • Foster cross-border data collaboration within ECOWAS.

Source: Author's elaboration

These actionable mandates, alongside the implementation roadmap, will ensure that Guinea's data governance becomes more transparent, efficient, and conducive to sustainable development.

Practical Pilot Example: Digital Civil Registration System (DCRS)[10]

One of the most significant ongoing initiatives in Guinea is the comprehensive modernisation of the national civil registry, a process that fundamentally depends on cross-sectoral data sharing. Spearheaded by the Ministry of Territorial Administration, with crucial support from Enabel (the Belgian Development Agency) and the European Union, this pilot project is focused on digitising and harmonising records of births, marriages, and deaths throughout the country. Serving as a practical demonstration, this pilot provides valuable proof of concept for broader interoperability initiatives, illustrating how data sharing at the municipal level can be expanded to the national scale to advance Guinea's digital transformation objectives.

Table 6: Practical Pilot Example of the Digital Civil Registration System (DCRS)

Component	Details of the Initiative	Data Sharing & Interoperability Gain
Digital Civil Registration System (DCRS) Pilot	Guinea launched the pilot phase of its Digital Civil Registration System (DCRS) in October 2022 across ten pilot municipalities (including some in Conakry and Kindia), with support from the EU and Enabel.	This DCRS is the single most critical source of authoritative identity data in the country.
Specific Data Flow	The DCRS' goal is to digitise existing paper records (birth, marriage, death) and create a system for automatic notification of future births via a mobile application used by health centres.	This integration establishes a mandatory data link between the Ministry of Health (birth data) and the Ministry of Territorial Administration (civil registry). This data flow must use a standard API, making it the ideal proof of concept for the new Koloma Data Centre as the central hub.
Interoperability Mandate	The immediate goal is to require the DCRS to use the National Identity Number (NIN) as the mandatory core identifier. This connects the foundational citizen data to all other government systems.	Once centralised and accessible via API, the DCRS data can be used by the Education Ministry (to verify student ages) and the Ministry of Finance (to clean up the payroll by verifying the existence of public employees). This directly addresses both the Absence of Common Data Standards and Weak Accountability challenges.

Source: Author's elaboration

In 2022 alone, 44,493 new vital events were registered on time, and 66,562[10] certificates were issued through court procedures. The pilot demonstrated how interoperable systems and shared standards can improve service delivery and legal identity coverage.

[10] The modernisation of Guinea's civil registry inspired by Belgium's experience : Initiative sur le droit à la nationalité en Afrique

By successfully piloting the technical interface between the Health Sector (data capture) and the Civil Registry (data storage) via the new digital infrastructure, Guinea demonstrates that it can move from isolated digital projects to a unified, interoperable digital public infrastructure.

7. Implementation Considerations: Building political will and overcoming resistance

Technical reform alone will not guarantee success. Effective implementation will require political leadership, institutional commitment, and sustained investment.

Identify Reform Champions: Empower digital transformation advocates within key ministries and the Presidency. Experience from countries such as Benin and Rwanda shows that high-level leadership is critical to driving successful digital reforms. Clarify mandates and strengthen coordination between.

Communicate the Vision: Frame data interoperability as a governance reform, not a technical IT project.

Pilot and Scale: Test reforms in selected sectors before national rollout to demonstrate early success and build political momentum.

Leverage Civil Society and Media: Use advocacy and storytelling to highlight success stories and citizen benefits

Strengthen Financial Commitment to DPI Investment: Mobilise funding through a dedicated Digital Public Infrastructure Fund under the Ministry of Finance.

Engage Donors and Partners: Work with the World Bank, African Development Bank (AfDB), and UNDP to align funding with national priorities.

8. Conclusion

Guinea's path to digital transformation depends on a simple yet powerful shift from fragmented, isolated systems to a connected, data-driven public sector. By investing in interoperability, building human capacity, and adopting clear governance frameworks, Guinea can unlock efficiency, trust, and innovation across government.

This transformation is both urgent and achievable. It calls for a new form of state leadership, one that treats data not as a by-product of administration but as a strategic national asset. Government institutions' ability to share, protect, and make use of reliable data will directly determine the quality of public services, the transparency of public finance, and the credibility of national planning.

The implementation of the proposed integrated data sharing platform, centred on the Koloma National Data Centre, standardised data formats, and open data policies, offers a practical path to connect these isolated initiatives into a single, coherent digital ecosystem.

This reform agenda goes beyond technology. It is about rethinking the role of government in the digital age, making information flow securely, decisions faster, and services more equitable. It is also about empowering people: public servants who understand data's value, citizens who trust digital platforms, and entrepreneurs who can innovate with access to reliable open data.

Strengthening Guinea's data ecosystem is therefore a nation-building project. It will support the institutional foundations of the state, promote evidence-based

policymaking, and restore citizens' confidence in public action. With consistent leadership and support from partners such as the World Bank, AfDB, the European Union, and UNDP, Guinea can achieve what countries like Benin, Rwanda, and Ghana have demonstrated: that digital transformation, when driven by strong governance and local ownership, becomes a catalyst for inclusive growth and accountability.

Appendix 1: Key Data Standards for the Digital School Registry Pilot

Standard Component	Specific Actions in the Pilot	Benefit & Interoperability Gain
1. Unique Identifiers (IDs)	Mandate the use of two standard, universally linkable IDs for every entry: a Standardised School Code (assigned by the INS) and the student's National Identity Number (NIN) or a Provisional ID.	Solves the Absenteeism/Ghost Worker Problem (Weak Accountability) by allowing registry data to be automatically linked to the Ministry of Finance Payroll System (via the NIN of the teacher) and the Ministry of Health (via the student's ID for vaccination tracking).
2. Metadata and Terminology	Require standardised terminology for all fields, such as defining "attendance status" using only three agreed-upon codes (Present, Excused Absent, and Unexcused Absent) and standardising the definition of a "classroom" across all reports.	Solves the Poor Data Quality problem. Ensures that when data is aggregated at the national level, policymakers are comparing apples to apples, making the reports reliable for policy (e.g., assessing true attendance rates).
3. Data Format and Protocol	Mandate that data collected via the mobile/tablet app must be submitted in a standard, open, machine-readable format (e.g., JSON or CSV) using a secure API connection to the central server.	Solves the Limited Interoperability Infrastructure problem. Replaces manual, paper-based processes and ensures the Education Ministry's data can be immediately consumed and analysed by the INS or other planning agencies.

Source: Author's construction

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Disclaimer*: The views expressed here are the author's own and do not necessarily reflect the positions of CSEA, the Fellowship, or the Hewlett Foundation. This work contributes to policy dialogue on data governance and ethical digital transformation in Africa.*