FEASIBILITY STUDY ON THE VOTER REGISTRATION IN SIERRA LEONE

Overview, Analysis and Recommendations

Feasibility Study on Voter Registration in Sierra Leone:

Overview, Analysis and Recommendations

Lamin C.A. Lighe
Electoral Operation Systems Consultant/Voter Registration
UNDP Sierra Leone
Freetown, Sierra Leone
05 December 2025

Table of Contents

Acknowledgement **1**
Executive Summary **2**
Chapter 1 - INTRODUCTION **3**
1.1 Background and Context 3
1.2 Objectives & Scope of Work 4
1.3 Scope of the Study 4
Chapter 2 - Methodology **5**
2.1 Tools and Techniques 5
2.1.1 Desk Review 5
2.1.2 Stakeholder Engagement 5
2.1.3 Technical Assessment 5
2.1.4 Comparative Analysis and Options Development 6
2.1.5 Analytical Framework 6
Chapter 3 - Situational Analysis **7**
3.1 Historical Voter Registrations System 7
3.2 Use of Census Data for Electoral Purposes 8
3.3 Voter Registration 8
3.4 Voter Registration Data Extraction 8
3.5 Gaps identified during the data extraction: 9
3.6 RECOMMENDATIONS 9
Chapter 4 – Assessment of Existing Voter Registration Hardware & Staff Capacity **10**
4.1 Hardware/ICT Equipment 10
4.2 Staff Capacity 11
Chapter 5 - Challenges, Risks and Mitigation Strategies for Voter Registration **12**
Chapter 6 - Voter Registration Data Extraction Options **13**
6.1 Introduction 13
6.2 Objectives 13
6.3 Data Extraction Options 13
1. Direct API (Application Programming Interface) Integration 13
2. Periodic Data Transfer 14
3. Database (DB) replication / secure vpn + database replication 14
4. Hybrid - Periodic Data Transfer and Field Verification 14

5. Secure Physical Transfer (Offline / Couriered Encrypted Drives 15
6.4 Recommended Extraction Option with Justification 15
Chapter 7 - Voter Registration Roadmap for 2028 Elections **16**
7.1 Phase 1: Strategic Planning and Framework Development (Q4 2025–Q1 2026) 16
7.2 Phase 2: System Design and Procurement (Q2–Q4 2026) 16
7.3 Phase 3: Field Preparation and Capacity Building (Q3 2026 – Q1 2027) 16
7.4 Phase 4: Voter Registration Exercise (Q2 – Q4 2027) 16
7.5 Phase 5: Data Verification, Audit, and Finalization (Q1 2028) 17
7.6 Phase 6: Post-Registration Review and System Maintenance (Q2 2028 – Election Period) 17
7.7 Summary Timeline Table 17
7.8 Concrete Next Steps (first 60-90 days) 17
Chapter 8 - Legal and Regulatory Reforms and Audit Pathways **18**
8.1 Introduction 18
8.2 Proposed Legal and Regulatory Reforms 18
7.3 Auditing of the Register of Voter 21
8.4 Audit Examples from Peer Countries 22
Chapter 10 - Voter Registration Operational Plan **23**
Chapter 11 - Cost Estimates for Recommended Option **24**
B. Total Estimated Cost Range (2026–2028 Implementation Period) 25
C. Cost Phasing by Year 25
D. Cost Efficiency and Sustainability Rationale 25
Chapter 12 - Conclusion **25**
12.1 Current Voter Registration Process, System & Capacity 26
12.2 Key Findings & Gaps 26
12.3 Recommended Option & Justification 26
12.4 Legal, Regulatory & Audit Pathways 26
12.5 Capacity & Infrastructure Upgrades; Operational Planning 26
12.6 Roadmap for 2028 Elections 27
12.7 Budget for Recommended Option 27
12.8 Risks 27
ANNEX A List of Stakeholders Consulted **28**
ANNEX B Voter Operational Plan -2028 Elections ..... Error! Bookmark not defined.

ACRONYMS

APC	All People's Congress
AU	African Union
BCP	Business Continuity Planning
BVR	Biometric Voter Registration
CGEIT	Certified in the Governance of Enterprise IT
CISSP	Certified Information Systems Security Professional
CISM	Certified Information Security Manager
CPC	Cross-Party Committee on Electoral Systems and Management Bodies Review
CSPO	Certified Scrum Product Owner
DR	Disaster Recovery
DRII	Disaster Recovery Institute International
ECOWAS	Economic Community of West African States
ECSL	Electoral Commission for Sierra Leone
ETL	Extract, Transform, Load
GIS	Geographic Information System
ISO	International Organization for Standardization
ITIL	Information Technology Infrastructure Library
MoU	Memorandum of Understanding
NCRA	National Civil Registration Authority
NIN	National Identity Number
NTC	National Tally Centre
PEA	Public Elections Act
PMO	Project Management Office
PRINCE2	Projects in Controlled Environments (Version 2)
PVR	Provisional Voter Register
RMS	Results Management System
SOP	Standard Operating Procedure
TOGAF	The Open Group Architecture Framework
TWG	Technical Working Group
UNDP	United Nations Development Programme
UPS	Uninterruptible Power Supply
UX	User Experience
VVK	Voter Verification Kit

Acknowledgement

I extend my profound appreciation to the United Nations Development Programme (UNDP) Sierra Leone for commissioning this feasibility study on voter registration, which represents a critical step toward strengthening electoral integrity and inclusiveness ahead of the 2028 elections. I also gratefully acknowledge the generous support provided by the European Union (EU), the Governments of Ireland, Iceland, and Canada, and all contributors to the Basket Fund, whose commitment to democratic governance made this study possible.

My sincere thanks go to the leadership of the Electoral Commission for Sierra Leone (ECSL), the Secretariat, and staff for their unwavering support throughout this process—accepting the study, facilitating its implementation, and ensuring institutional ownership. I particularly commend ECSL for organizing external consultations with key stakeholders, including the Office of the Chief Minister, the Government of Sierra Leone, the Director General of the National Civil Registration Authority (NCRA), the Executive Secretary of the Political Parties Registration Commission (PPRC), and representatives of political parties. These engagements enriched the study with diverse perspectives and fostered consensus on the way forward.

This collaborative effort underscores the shared commitment of national institutions and development partners to deliver a credible, transparent, and inclusive voter registration system for Sierra Leone. We look forward to continued partnership in implementing the recommendations of this study and advancing the democratic process.

Executive Summary

The integrity and inclusiveness of voter registration remain central to credible elections and democratic governance in Sierra Leone. The 2023 general elections registered over 3.37 million voters through collaboration between the Electoral Commission for Sierra Leone (ECSL) and the National Civil Registration Authority (NCRA), highlighting potential for integrated systems while exposing operational, legal, and technological gaps ahead of the 2028 electoral cycle.

This feasibility study, part of the UNDP project "Fostering Peaceful, Credible and Inclusive Elections in Sierra Leone 2022-2023," was commissioned by UNDP Sierra Leone to support ECSL evaluate the current voter registration system, its alignment with international electoral standards and the recommendations of the Cross-Party Committee (CPC), electoral observation missions and Independent Management and Functional Review conducted by the Public Sector Reform Unit. Key findings reveal ICT skill shortages, end-of-life infrastructure (e.g., non-functional UPS/solar backups, deteriorated Voter Verification Kits), data mismatches, and legal ambiguities in data-sharing process.

Key findings highlight:

- **ICT Gaps:** ECSL staff possess mostly basic technical skills, however, advanced competencies in cybersecurity, ICT governance, UX design, and DevOps are absent.
- **ICT Infrastructure:** Core data centre equipment is beyond end-of-life; power backup systems are non-functional; over 1,700 Voter Verification Kits (VVKs) remain in poor storage conditions reducing the prospect of using it for the next electoral cycle.
- **Operational Weaknesses:** Delayed operational planning, inadequate public communication, and persistent data mismatch undermine efficiency and trust to the voter registration process.
- **Legal and Governance Issues:** Ambiguities in data-sharing frameworks.

The study recommends a **hybrid voter registration model** combining mandatory **periodic encrypted data transfer from NCRA** with **joint field verification**, supported by robust ETL tools, disaster recovery systems, and transparent publication timelines. It further proposes:

- **Legal and Regulatory Reforms:** Integration of National Identity Numbers (NIN), permanent voter verification platforms, and mandatory external audits of the voter register.
- **Capacity Building:** A structured certification roadmap for ECSL ICT staff and peer learning exchanges with regional electoral bodies.
- **Infrastructure Upgrades:** Immediate procurement of servers, storage, and network equipment; restoration of UPS and solar systems; and repurposing VVKs for continuous voter verification.
- **Multi-Year Operational Planning:** Covering the entire electoral cycle to enable phased budgeting, early procurement, and risk mitigation.

The estimated cost for implementing these reforms over 2026–2028 is **USD 10.6 million**, phased across strategic planning, system design, field preparation, registration, verification, and audit.

Successful execution will promote ECSL's leading role in strengthening electoral integrity, ensuring a secure, transparent, and inclusive voter registration system for the 2028 elections and beyond.

Chapter 1 - INTRODUCTION

The integrity and inclusiveness of voter registration are foundational pillars of credible elections and democratic governance. In Sierra Leone, the 2023 Presidential, Parliamentary, and Local Council elections marked a significant milestone, with over 3.37 million voters registered through a collaborative effort between the National Civil Registration Authority (NCRA) and the Electoral Commission for Sierra Leone (ECSL). This partnership demonstrated the potential for integrated civil and voter registration systems to enhance electoral transparency and public trust.

In the post-election period, the Cross-Party Committee on Electoral Systems and Management Bodies Review (CPC), established following the Agreement for National Unity, put forward 80 recommendations aimed at strengthening electoral legislation and operational systems. Among these, voter registration reform was identified as a critical priority. The UNDP Elections Project, in collaboration with development partners, has supported the implementation of these recommendations through technical assistance to the Tripartite Steering Committee Secretariat and key electoral stakeholders.

This report presents the findings of a feasibility study conducted to assess the current voter registration system in Sierra Leone. It evaluates the processes administered by ECSL, the civil registration functions managed by NCRA, and incorporates insights from CPC recommendations, election observation missions (both domestic and international), and the Independent Management and Functional Review of ECSL. The study also considers the political, legal, institutional, financial, and technological factors influencing voter registration performance.

The primary objective of this feasibility study is to assess the readiness, challenges, and opportunities for enhancing voter registration in the run up to the 2028 elections. It proposes strategic options for aligning civil and voter registration systems, improving operational efficiency, and ensuring the sustainability of continuous voter registration in preparation for future electoral cycles, including the 2028 elections

1.1 Background and Context

Sierra Leone's 2023 Presidential, Parliamentary, and Local Council elections were conducted amidst a complex political landscape, culminating in the registration of over 3.37 million voters. This achievement was made possible through a collaborative framework between the ECSL and the NCRA**,** leveraging the civil registry to support the voter registration process. While this approach marked a significant step toward integrated identity management, it also revealed critical operational, legal, and technological challenges that require strategic attention.

Following the elections, disputes over the results led to a high-level mediation effort by the Economic Community of West African States (ECOWAS), the African Union (AU), and the Commonwealth Secretariat, resulting in the Agreement for National Unity between the Government of Sierra Leone and the opposition All People's Congress (APC). A key outcome of this agreement was the establishment of the Cross-Party Committee on Electoral Systems and Management Bodies Review (CPC), tasked with examining the conduct of the 2023 and previous elections and recommending reforms to strengthen the electoral process.

The CPC's final report outlined 80 recommendations, many of which focused on improving the integrity, transparency, and sustainability of the voter registration system. In response, the Government of Sierra Leone formed the Tripartite Steering Committee and its Secretariat, under the Office of the Chief Minister, to oversee the implementation of these reforms. The UNDP Elections

Project, in partnership with development partners, has provided technical and advisory support to this process, including assistance to ECSL in addressing operational and technological gaps in voter registration and results management.

1.2 Objectives & Scope of Work

The primary objective of this feasibility study is to assess the current voter registration system in Sierra Leone administered by the ECSL and explore viable options for its enhancement in line with international standards and the recommendations of the Cross-Party Committee (CPC). The study aims to support the development of a robust, inclusive, and sustainable voter registration framework that strengthens electoral integrity and public trust ahead of future elections, particularly the 2028 electoral cycle.

Specific Objectives

- To evaluate the existing voter registration processes administered by ECSL.
- To assess the potential for extracting and utilizing data from the NCRA for voter registration purposes.
- To identify and analyse operational, legal, institutional, financial, and technological factors affecting the performance of the voter registration system.
- To propose various voter registration methodologies that support continuous and inclusive registration.
- To develop a roadmap for aligning voter registration data with the civil registry, including regulatory policies and capacity-building strategies for ECSL staff.
- To support ECSL in designing operational and procurement plans, including budget estimates for voter registration activities leading up to the 2028 elections.
- To recommend peer learning opportunities for ECSL technical staff to observe best practices in similar jurisdictions.

1.3 Scope of the Study

This feasibility study covers:

- A comprehensive review of the voter registration system in Sierra Leone, including its legal and institutional frameworks.
- An assessment of the civil registration system managed by NCRA and its interoperability with ECSL systems.
- Consultations with key stakeholders such as ECSL (including district offices), NCRA, political parties, civil society organizations, and development partners.
- Consideration of findings from the election observation missions and the Independent Management and Functional Review of ECSL.
- Analysis of ICT infrastructure, data management practices, and operational readiness for future voter registration exercises.

Chapter 2 - Methodology

The consultancy adopted a mixed-method approach integrating desk research, targeted stakeholder consultations, technical assessments, and comparative analysis. This approach ensured a comprehensive understanding of the context and facilitated evidence-based recommendations aligned with the study objectives.

2.1 Tools and Techniques

The feasibility study utilized a structured mix of qualitative, analytical, and consultative tools designed to balance strategic insight, operational feasibility, and institutional ownership. Each tool contributed uniquely to the robustness and credibility of the assessment.

2.1.1 Desk Review

A thorough desk review was conducted to establish a baseline and inform subsequent analysis. Key documents reviewed included:

- The Constitution of Sierra Leone (1992)
- Public Elections Act (2022)
- NCRA Act (2016)
- CPC and Independent Management and Functional Review Recommendations
- ECSL Strategic Plan (2020–2024) and Operational Procedures for 2023 Elections
- International and Domestic Election Observation Mission recommendations (EU, Carter Center, Commonwealth, ECOWAS, NEW)

2.1.2 Stakeholder Engagement

Targeted stakeholder consultations were conducted with key actors, including the leadership of UNDP, ECSL, PPRC and NCRA, the Chief Minister, development partners, and political parties, ECSL Secretariat and the APC Chief Negotiator (See Annex A for the detailed list of stakeholders engaged). Additionally, a Technical Working Group (TWG) was established comprising ECSL's key operational and legal departments and UNDP consultants. The TWG provided strategic and technical guidance, ensuring coordination and collaboration across ECSL departments and external stakeholders.

2.1.3 Technical Assessment

An evaluation of ECSL's voter registration infrastructure, systems, processes, and equipment was undertaken using semi-structured interviews, a technology assessment checklist, and focus group discussions. The assessment focused on functionality, efficiency, compliance, and readiness. Physical inspections were conducted at ECSL Headquarters and Wellington (datacenter location), as well as selected regional and district offices. However, access to the primary and backup servers and the voter verification kit (VVK) was not possible due to expired licenses and software upgrades respectively, limiting the ability to fully evaluate compliance against established standards and best practices.[1]

[1] However, this did not affect the outcome of this assessment

2.1.4 Comparative Analysis and Options Development

A comparative analysis was performed on practices in South Africa, Rwanda, and Ghana, focusing on coordination between electoral commissions and civil registry authorities in voter registration and data development. The analysis examined:

- Data extraction processes
- Benefits and challenges
- Mechanisms for updating voter information

Benefits of Comparative Analysis:

- Learn from proven practices and set realistic performance benchmarks
- Identify gaps and opportunities for improvement
- Inform evidence-based policy design and foster continuous learning

The findings supported the development of options for sustainable voter registration, a roadmap for data alignment and informed decisions regarding the design of a capacity-building strategy for ECSL staff.

2.1.5 Analytical Framework

The analytical framework guiding this feasibility study is anchored on five core principles: CPC recommendations alignment, sustainability, inclusivity, technological feasibility, and legal compatibility. These principles ensured that all recommendations and options developed were contextually relevant, operationally viable, and strategically aligned with national priorities.

Chapter 3 - Situational Analysis

Sierra Leone's voter registration processes have evolved significantly over the past two decades. From ECSL's exclusive role in the preparation of the register of voters to a collaborative framework with NCRA, leveraging the civil registry to support the voter registration process, has marked a significant achievement toward integrated identity management. It also revealed critical operational, legal, and technological challenges that require immediate strategic attention.

3.1 Historical Voter Registrations System

Prior to the 2018 elections, the ECSL conducted periodic voter registration exercises. In 2007, the National Electoral Commission (NEC) conducted voter registration using the Optical Mark Recognition (OMR) system, a blend of manual paper-based and technology. With OMR, registration staff fill in specialized printed forms with voter's information, which are then scanned and read by specialized hardware and software that convert these marks into computer-readable data. Voters were issued cold-laminate paper voter ID cards at the time of registration. The verified data was compiled into the voter register. In preparations for the 2012 elections, NEC introduced Biometric Voter Registration (BVR) Systems. The systems enabled a more reliable and updated register of voters compared to the previous OMR System used in 2007. The BVR captured unique biometric data, including thumbprints and facial images, which allowed the NEC to create a cleaner register of voters and eliminate duplicate registrations effectively. This process resulted in issuance of voter ID cards, improving accuracy and integrity of the voter register.

For the 2018 and 2023 elections, ECSL obtained and integrated data from NCRA through a collaborative voter registration update process. The NCRA was established by the Government of Sierra Leone through the National Civil Registration Act enacted on 30th June 2016. The establishment followed a UNDP scoping mission in 2012 which revealed the need to replace the existing fragmented and uncoordinated civil registration systems with a consolidated national system. The NCRA was established to create an integrated, reliable civil registration and ID management system aimed at improving public administration, social development, national security, and democratic processes in Sierra Leone.

Historical Voter Registrations System in Sierra Leone

System & Year	Technology Used	Key Features	Challenges	Lessons Learned
OMR – 2007	Optical Mark Recognition (Paper-based forms scanned)	Cost-effective; relied on manual data capture through scanned forms	Prone to interpretation errors; lacked duplicate detection; data integrity issues	Need for robust data validation and duplicate detection mechanisms
BVR – 2012	Biometric Voter Registration (Face Technology)	Fingerprint and photo capture; enhanced uniqueness and fraud prevention	Equipment failures; inadequate training; logistical delays; persistent data quality issues	Importance of technical capacity building and system interoperability

ECSL–NCRA Collaboration – 2018	BVR with Smartmatic technology	Joint ECSL-NCRA registration; updated civil registry; de-duplication process	Data integrity and system interoperability challenges remained	Need for integrated systems and clear data governance protocols
ECSL–NCRA Collaboration – 2023	Integrated Civil Registry & Electoral Roll systems	Promoted sustainability; reduced duplication; aimed for data synchronization	Gaps in data alignment; limited system compatibility; operational effectiveness not fully achieved	Continuous improvement in data integration and stakeholder coordination

3.2 Use of Census Data for Electoral Purposes

Lastly, the 2021 Population and Housing Mid- Term Census data plays a critical role in electoral boundary delimitation**,** influencing constituency sizes and representation. However, discrepancies between census figures and voter registration data have raised public trust concerns, underscoring the need for transparent processes and credible data reconciliation mechanisms. The demographic and combined data from the 2015 and 2021 censuses were used by the Electoral Commission to define seat allocations for the 2023 parliamentary and local council elections. These issues, though beyond the control of ECSL, undermined public trust in the census exercises. It is highly notable that CPC Recommendation 38 seeks to address issues surrounding the use of census data for electoral purposes. The quality and credibility of the 2026 census data will be crucial for restoring public confidence and ensuring transparent and credible boundaries delimitation leading into the 2028 elections.

3.3 Voter Registration

Legal mandate: Section 33 of the Constitution of Sierra Leone, 1991, Public Elections Act, 2022, NCRA Act (2016), Section 25(b) of NCRA Act
Primary source: The permanent civil register maintained by NCRA is the main population data source for multiple public functions, including elections.
Historical practice: ECSL extracted data from NCRA in 2017 for the 2018 elections and again in 2022 for the 2023 elections.
Pre-registration process: ECSL extracts eligible voters' dataset from NCRA civil registration database before field voter registration updates.
Governance: Process is guided by revised **MoU (July 13, 2020) between ECSL and NCRA**.
Field verification: ECSL uses extracted dataset on **Voter Verification Kits (VVK)** for verification and confirmation.

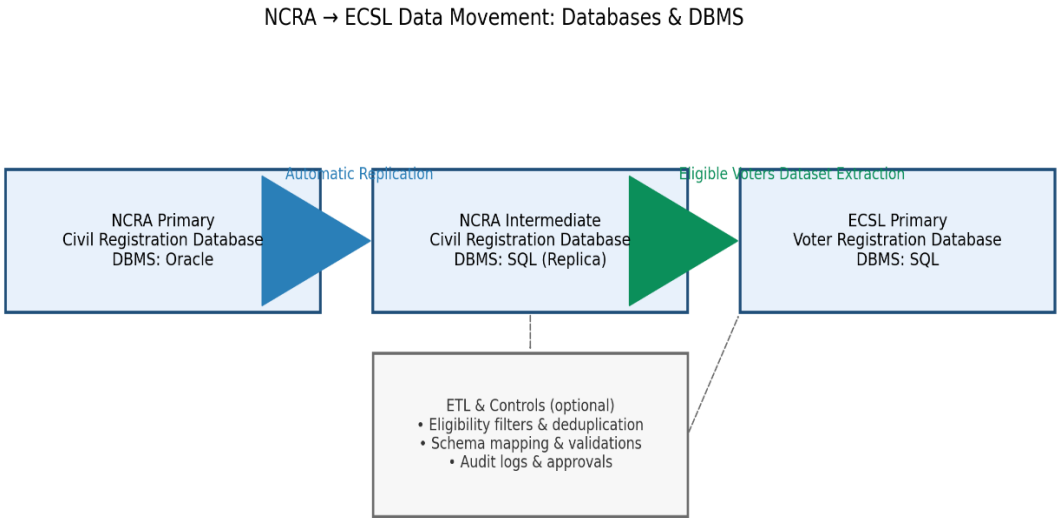
Two-step registration update:

- **Verification** of biometric data for voters already enrolled in the civil register.
- **Biometric capture** for voters not yet registered by NCRA

Data consolidation: ECSL removes duplicates and publishes **Provisional Voters Register (PVR)** for public verification and objections.

3.4 Voter Registration Data Extraction

ECSL's voter registration system uses biometric voter registration (BVR) data integrated with the NCRA database to verify identity and eligibility combine with decentralized, ward-level registration centres supported by ICT infrastructure designed to uphold accuracy, transparency, and accessibility in line with national election laws and standards.



3.5 Gaps identified during the data extraction:

- **ECSL & NCRA MoU**
  - Limited defined roles for a Joint Technical Steering Committee
  - Lack of dispute resolution mechanism for data discrepancies
  - No provision for publicity & confidentiality

- **Data Extraction & Field VR Update**
  - Application/system failures during data extraction from NCRA civil database
  - Power failure during data extraction process
  - Dual registration requirements caused confusion.
  - Technical failures in biometric equipment in the field.
  - Persistent issues with data mismatches and limited transparency
  - Missing/inadequate photos for identification.
  - Delayed planning and implementation
  - Limited legal clarity on data sharing.
  - Inadequate public communication.

3.6 RECOMMENDATIONS

- **ECSL and NCRA MoU**
  - Define clear roles and responsibilities for a Joint Technical Steering Committee to ensure effective governance.
  - Implement a multi-level governance structure for better coordination and oversight
  - Add provisions for confidentiality and publicity to safeguard sensitive information and manage public communication.

- **Data Extraction & Field VR Update**
    - Procure a bespoke ETL (Extract, Transform, and Load) application designed to extract structured data from NCRA primary relational database, apply necessary transformations, and load it into ECSL database to support downstream analytics and operational processes
    - Install uninterruptible power supply (UPS) and backup generators for critical servers during extraction
    - ECSL should capture high quality photo of registrants during verification/ update and use instead of photo from NCRA to address missing photos, poor quality photo and photos taken when registrant was below the age of eligibility to vote
    - Publish public FAQs on registration to clarify processes
    - Train technicians for on-site troubleshooting and maintain vendor support SLAs

Chapter 4 – Assessment of Existing Voter Registration Hardware & Staff Capacity

4.1 Hardware/ICT Equipment

ECSL Headquarters

The integrity of Sierra Leone's voter registration process is closely tied to the reliability of ECSL's ICT infrastructure. The current assessment shows that core data centre components are at or beyond end-of-life, including Dell R730 servers (support ended 2024) and PowerVault storage arrays (support ended 2023). Network equipment such as Cisco Catalyst 3850 switches will lose support by late 2026, while wireless controllers (Cisco 2500 WLC) are already unsupported. Compounding these risks, critical power systems, UPS and solar backup are non-functional, exposing voter registration operations to outages and data loss.

RECOMMENDATIONS

Immediate action is required to mitigate these vulnerabilities. ECSL should prioritize procurement and deployment of next-generation servers (Dell R750xs/R760), modern SAN/NAS storage, and Catalyst 9300/9200 switches, alongside migration to Catalyst 9800 wireless controllers and ISR 1100 routers. Restoring UPS capacity and repairing solar systems are essential for power resilience.

Field Equipment

ECSL procured 2,000 high end laptops (2 terabyte hard drive), along with a scanner, solar generators and solar panels as supporting accessories for the 2022 voter registration/update field exercise. These laptops later became known as Voter Verification Kits (VVK) when the update application/software was installed on them. The study was informed that following the field exercise, approximately 1,700 or more laptops were retrieved and stored at ECSL's central warehouse in Wellington along with accessories. While there have been attempts in the past to conduct an inventory to determine the operational status of this equipment, every time it is done, more equipment is found damaged primarily due to current conditions under which the equipment is being stored.

RECOMMENDATIONS

Immediate steps are critical to prevent further deterioration and restore operational readiness. Actions include conducting a full inventory, testing and securing storage inspection, and initiate urgent repairs.

- Conduct comprehensive inventory and tag all laptops and accessories with unique IDs.
- Relocate equipment to a climate-controlled, secure facility with dust-proof racks
- Perform preventive maintenance: clean devices, recharge batteries, and test solar kits.
- Identify repairable laptops and engage certified technicians for urgent fixes.

Long-term measures will ensure sustainability, readiness for future voter registration, and optimal use of resources. These actions include lifecycle management and repurposing these resources within the ECSL and other government entities.

4.2 Staff Capacity

A resilient voter registration system requires not only robust technology but also skilled personnel capable of managing complex ICT environments. Current assessments reveal that ECSL's ICT capacity is heavily constrained, with most staff operating at a basic level in programming, database management, disaster recovery, and reporting tools. Advanced expertise in critical areas such as cybersecurity, ICT governance, UX design, and DevOps is virtually absent, creating systemic vulnerabilities. These gaps threaten the ability to implement secure, transparent, and scalable voter registration solutions that comply with the Public Elections Act and international best practices. Addressing this challenge demands a structured capacity-building program, targeted certifications, and peer learning initiatives to ensure ECSL can deliver a modern, resilient, and trusted electoral process.

RECOMMENDATIONS

To address the critical ICT capacity gaps within ECSL, immediate and sustained interventions are required. First, launch a structured capacity-building program that prioritizes governance, cybersecurity, and disaster recovery skills through internationally recognized certifications such as TOGAF, ITIL, ISO 27001, and CISSP. Parallel to this, establish peer exchange programs with the Electoral Commissions of Liberia, Ghana, Nigeria and Kenya to offer practical learning opportunities. These exchanges can expose ECSL staff to proven practices in biometric voter verification, adjudication processes, and progressive publication of voter data—critical for transparency and credibility

Chapter 5 - Challenges, Risks and Mitigation Strategies for Voter Registration

Challenges	Key Issues	Risks	Mitigation Strategies
Political	Trust deficit, partisan pressure, reform tensions	Contested legitimacy of voter register; elevated dispute rates and petitions; political interference delaying decisions or skewing resource allocation.	• Transparent publication of processes and data • Independent observer access • Conflict-sensitive communication & mediation mechanisms
Legal	Mandate overlap, fake IDs, short registration windows	Litigation and injunctions halting processes; identity fraud inflating/contaminating the register.	• Clarify mandates via updated MoU and legal instruments • Implement fraud detection and legal compliance checks
Financial	High costs, funding gaps, procurement challenges	Interrupted operations (kit shortages, fuel/UPS constraints); non-compliance for procurement breaches	• Secure early funding commitments and contingency reserves • Enforce transparent procurement processes • Regular financial audits and donor reporting • Prioritize critical activities in phased budgeting
Institutional	Role confusion, weak fraud control, low staff capacity	Operational bottlenecks and duplication; inconsistent SOPs leading to uneven application of rules;	• Define roles and responsibilities clearly • Develop and enforce SOPs • Deploy monitoring and evaluation teams for compliance
Technical	Database integration issues, equipment failures, power shortages	Data loss/corruption during transfers; extended downtime and missed milestones; inaccurate biometric matches; lower verification throughput; incomplete records (e.g., photos, biometrics) undermining identification.	• Implement robust backup and recovery systems • Maintain spare biometric kits and UPS backups • Conduct pre-deployment testing and real-time monitoring • Train technicians for rapid troubleshooting

Chapter 6 - Voter Registration Data Extraction Options

6.1 Introduction

The ECSL is constitutionally mandated to maintain an accurate register of voters. The NCRA is also mandated by law as the central authority for civil registration and identity management in Sierra Leone, supporting national development and public administration including population data for eligible voters. Since the coming in effect of the NCRA Act in 2016, ECSL and NCRA have embarked upon a collaborative framework leading to the development of the register of voters for the 2018 and 2023 elections. The voter registration exercise involved two distinct processes:

I. Extraction of population data from NCRA database to ECSL voter registration database
II. Field Update where ECSL verify and obtain confirmation of voters while NCRA registers voters not included in the NCRA civil register.

6.2 Objectives

The objectives of the proposed data extraction options for the 2028 elections are as follows:

- To identify viable data extraction options from NCRA that can be used by ECSL to build and update the voter registry.
- To evaluate the advantages and risks associated with each data extraction method, including technical, legal, operational, and sustainability considerations.
- To recommend the most suitable and cost-effective extraction method for the 2028 elections, ensuring alignment with legal mandates, institutional capacity, and international best practices in electoral data management.

6.3 Data Extraction Options

1. Direct API (Application Programming Interface) Integration

Description: ECSL connects to NCRA's database via secure APIs to access real-time data of citizens aged 18 and above.
Advantages:
- Real-time access to updated records.
- Accurate, enables incremental changes.
- Simple automation.
Disadvantages/Risks:
- Requires consistent connectivity and reliable uptime.
- Needs API governance and robust cybersecurity infrastructure.
- High initial setup cost.
Sustainability: High (if NCRA commits to maintain API).
Cost-effectiveness: Moderate (initial high setup cost; low marginal cost afterwards).
IT skills required (ECSL): Medium — API design, secure auth, integration, basic devops.
Infrastructure: Stable internet, public-IP or cloud reachable endpoints, web/application servers, TLS certs, logging.

2. Periodic Data Transfer

Description: NCRA provides encrypted datasets to ECSL HQ at scheduled intervals.
Advantages:
- Simple to implement.
- Familiar to ECSL teams.
- Tolerant of intermittent connectivity
- Lower technical & operational complexity.
- Allows offline processing.

Disadvantages/Risks:
- Data not real-time and may be outdated between transfers.
- Larger transfers may require bandwidth.
- Requires manual validation and cleanup.
- Potential delays in receiving data.

Sustainability: High (operationally simple).
Cost-effectiveness: High (lower cost setup & complexity than APIs).
IT skills required: Low–Medium — basic ETL, scripting, database import, encryption key handling.
Infrastructure: Reliable but not continuous internet (transfers can be scheduled overnight at ECSL HQ); ECSL server to receive and process files; secure storage and security.

3. Database (DB) replication / secure vpn + database replication

Description: Logical replication (e.g., PostgreSQL streaming or secure DB replication) over site-to-site VPN so ECSL maintains a live read-replication of ECSL eligible-voter tables.
Advantages:
- Near real-time data access
- Powerful for analytics.

Disadvantages/Risks:
- High operations burden.
- Fragile with poor internet.
- Higher security risk surface

Sustainability: Medium (requires careful operations & coordination).
Cost-effectiveness: Moderate–Low (higher setup & ongoing maintenance).
IT skills required: High — DB admin, VPN, monitoring, replication conflict handling.
Infrastructure: Stable low-latency connectivity, dedicated network links, robust servers

4. Hybrid - Periodic Data Transfer and Field Verification

Description: NCRA provides encrypted datasets to ECSL Data centre at scheduled intervals, this includes a joint field exercise by ECSL & NCRA.
Advantages:
- Simple to implement.
- Familiar to ECSL teams.
- Tolerant of intermittent connectivity
- Lower technical & operational complexity.
- Allows offline processing.
- Ensures accuracy in underserved areas.
- Builds public trust.
- Identifies gaps in NCRA coverage.

Disadvantages/Risks:
- Resource-intensive.
- Time-consuming.
- Data not real-time and may be outdated between transfers.
- Larger transfers may require higher bandwidth.
- Requires manual validation and cleanup.
- Potential delays in receiving data

5. Secure Physical Transfer (Offline / Couriered Encrypted Drives

Description: Export encrypted data to physically transported drives (AES-encrypted), hand-carried or couriered under chain-of-custody.
Advantages:
- Works where networks fail
- Low technical barrier
Disadvantages/Risks:
- Slow, logistical risk
- Potential for physical loss/theft if not managed.

Sustainability: Low–Medium (logistics heavy).
Cost-effectiveness: Low for frequent updates; acceptable for occasional bulk syncs.
IT skills required: Low (basic encryption tools, SOPs).
Infrastructure: Local PCs and external hard drives, secure storage at endpoints, SOPs for chain of custody.

6.4 Recommended Extraction Option with Justification

Based on consultation with ECSL, its legal mandates, CPC recommendations, institutional capacity, sustainability and best practice, the recommended option is a hybrid approach combining Periodic Data Transfer and Field Verification (Option 4 above), similar approach used by ECSL for 2018 & 2023 general elections. This method balances technical feasibility with data accuracy and allows ECSL to validate NCRA data before compiling the voter registry as well as online portal in addition to exhibition of provisional voter register to allow voters to verify their inclusion and update of some personal details. It also addresses concerns raised in the Cross-Party Committee Review regarding data certification and institutional coordination.

1. **Periodic encrypted bulk export** (quarterly, yearly) from NCRA → secure SFTP over VPN → ECSL staging → ETL/reconciliation. (Low complexity, resilient to limited connectivity, low skill barrier).
2. **Joint Field Verification**
   i) Update of Voter Register by ECSL: Persons whose details are in the NCRA database (Verification → Confirmation → Printing of Voter ID Card→ Placement on Provisional Voter Register)
   ii) New Registration by NCRA: Persons whose details are not in the civil registration database, NCRA will enrol new applicants after the field verification exercise. Consequently, ECSL records new applicant NIN and personal details in the updated voter register.

3. **Data Consolidation, De-duplication, Provisional & Final Voter Register**
   i) NCRA - Consolidation of data from field with central database, De-duplication and Export of new applicants' dataset to ECSL

ii) ECSL - Consolidation of verified datasets + new applicants' dataset from NCRA → De-duplication & cleanup → Publishing Provisional Voter Register for public scrutiny, confirmation/correction/inclusion/objection. ECSL to publish **Final Voter Register**

Chapter 7 - Voter Registration Roadmap for 2028 Elections

7.1 Phase 1: Strategic Planning and Framework Development (Q4 2025–Q1 2026)

Objective: Establish foundational structures, policies, and partnerships to guide the voter registration process and to gain public trust.

Key Activities:

- Conduct stakeholder consultations (political parties, civil society, NCRA, security agencies).
- Review and update the legal and policy framework for voter registration.
- Inform the public and stakeholders on voter registration update model to be used for 2028 elections. Adopt detail operation plan, timelines, budget, procurement and resource mobilization strategy for the agreed Hybrid system model implementation.
- Define coordination mechanisms with NCRA for data extraction and integration.
- Conduct IT infrastructure and capacity assessment.
- Launch public communication on the voter registration roadmap.

7.2 Phase 2: System Design and Procurement (Q2–Q4 2026)

Objective: Develop or procure the technological and operational systems needed for registration.

Key Activities:

- Define system specifications and integration protocols with NCRA.
- Procure hardware, software, and data management systems (servers, backup solutions).
- Establish data protection and cybersecurity measures.
- Recruit and train technical teams (database administrators, IT support staff).
- Pilot integration of eligible voter data extraction from NCRA.
- Develop operational manuals, SOPs and guidelines.

7.3 Phase 3: Field Preparation and Capacity Building (Q3 2026 – Q1 2027)

Objective: Prepare human resources, logistics, and infrastructure for field operations.

Key Activities:

- Train registration staff and field coordinators at national and county levels.
- Strengthen and resource district offices to adequately support field voter registration.
- Conduct nationwide voter education on registration processes and eligibility.
- Finalize logistics and transport arrangements (vehicles, connectivity, power backup).
- Test registration and data transmission systems.
- Implement public awareness campaigns on voter registration schedule, registration locations and procedures.

7.4 Phase 4: Voter Registration Exercise (Q2 – Q4 2027)

Objective: Conduct a nationwide voter registration exercise and ensure data accuracy.

Key Activities:

- Conduct voter registration across all districts in phases.
- Monitor and provide technical support during registration.

- Ensure inclusion of marginalized groups (women, youth, PWDs).
- Conduct quality assurance checks and resolve data inconsistencies.
- Facilitate continuous registration for new eligible voters or updates.

7.5 Phase 5: Data Verification, Audit, and Finalization (Q1 2028)

Objective: Ensure data integrity and produce a credible final voter roll.

Key Activities:

- Conduct biometric or data verification and deduplication.
- Audit and clean the voter register in collaboration with independent audit firm and observers.
- Display provisional voter list for public verification and objections.
- Address complaints and corrections.
- Publish and certify the final voter register for the 2028 elections.

7.6 Phase 6: Post-Registration Review and System Maintenance (Q2 2028 – Election Period)

Objective: Maintain system readiness and support election operations.
Key Activities:

- Conduct final updates (transfers, replacements, deceased removals)
- Secure voter registration data and backup systems.
- Provide voter roll to political parties and electoral observers.
- Conduct post-registration evaluation and lessons-learned review**.**

7.7 Summary Timeline Table

Phase	Key Focus	Duration	Lead Entity
I. Strategic Planning	Legal, policy, and coordination setup	2025/26	ECSL / NCRA / Partners
II. System Design & Procurement	Technology and tools	2026	ECSL ICT, Data Management & Procurement
III. Field Preparation	Training and logistics	2026–2027	ECSL Operations, Training, Logistics & NCRA
IV. Registration Exercise	Voter registration rollout	2027	ECSL & NCRA
V. Verification & Audit	Data cleaning and validation	2028	ECSL / Audit Committee
VI. Maintenance	Final updates and evaluation	2028	ECSL

7.8 Concrete Next Steps (first 60-90 days)

1. Review/Upgrade **technical MoU** between ECSL & NCRA describing formats, frequency, security, etc.
2. Pilot a **scheduled encrypted bulk export** and ECSL import into a staging DB (one month pilot).
3. Deliver training for ECSL ETL/DB staff (2–4 people).
4. Assess results & iterate toward daily differences + add API capabilities where stable.

Chapter 8 - Legal and Regulatory Reforms and Audit Pathways

8.1 Introduction

This chapter outlines a strategic roadmap for strengthening Sierra Leone's voter registration system through legal and regulatory reforms supported by robust audit mechanisms. It also addresses persistent challenges such as technical failures, data inconsistencies, and limited transparency in deduplication.

Key proposals include:

- Establishing permanent voter verification platforms.
- Integrating National Identity Numbers (NIN) into the voter register.
- Enforcing transparent deduplication and publication timelines.
- Conducting independent audits to ensure accuracy, integrity, and compliance with international standards.

Case studies from Liberia (2017, 2023) and Ghana (2020) demonstrate that external audits and public verification processes significantly enhance trust, reduce duplication, and improve electoral credibility. Implementing similar best practices will position ECSL as a leader in electoral integrity, fostering confidence among voters, political parties, and development partners.

8.2 Proposed Legal and Regulatory Reforms

Establishing a Permanent Voter Verification Mechanism (Website, Mobile App, SMS - CPC Recommendation No. 12)

ECSL to establish through regulation a permanent mechanism for voters to check their registration and place of voting, possibly via a search engine on the website as well as a mobile app and SMS text messaging.

Benefits

- Voters can easily verify their registration status and polling location via mobile phones, apps, or online platforms, reducing reliance on physical visits to registration centers.
- Enables early detection and correction of registration errors, minimizing disenfranchisement
- Real-time access to voter data builds public trust in the electoral process.
- Reduces administrative burden and costs associated with manual verification and inquiries.
- Supports voters with disabilities and those in remote areas by offering multiple access channels to the voter data before reporting to registration centres.

Challenges

- Limited internet access and smartphone penetration in rural areas may exclude some voters.
- Risks of cyberattacks or unauthorized access to voter information.
- ECSL must maintain robust IT infrastructure and provide ongoing support.
- Initial setup and maintenance costs for digital platforms and SMS services may be high.

Regulations for Adoption and Publication of Electoral Operational Plans and Timelines (CPC Recommendation No.8)

ECSL to adopt regulations specifying the format of electoral operational plans, including timelines for their adoption and publication in relation to any given electoral event (voter registration or election). Publication dates for electoral operational plans to be included in the electoral cycle calendar.

Benefits

- Clear timelines allow stakeholders (political parties, civil society, voters) to prepare adequately for electoral events.
- ECSL can be held to published standards, improving institutional credibility.
- Standardized formats for operational plans enhance internal coordination and external communication.
- Aligns Sierra Leone's electoral management with global norms.

Challenges

- ECSL must build internal expertise to develop and implement detailed operational plans.
- Ensuring consensus among political parties and civil society on the format and timing of plans can be difficult.
- Fixed timelines may reduce ECSL's ability to adapt to unforeseen challenges (e.g., natural disasters, political unrest).

ECSL undertakes the following Voter Registration Process under Current Legal Provisions (CPC Recommendation 14)

1. Electoral Commission to receive a voting age population database from NCRA for the purpose of updating a voter register.
2. Electoral Commission to conduct a national voter registration fieldwork exercise following receipt of the data from NCRA. This will also allow voters to verify their names on the provisional list of voters.
3. Electoral Commission to conduct a deduplication process in Sierra Leone in a transparent manner following their field work process.

ECSL undertook the above voter registration processes during the preparation for the 2018 and 2023 general elections. Concerns around transparency of the deduplication process is addressed under Section 5.3 in this paper as well as further efforts directed towards accurate extraction of data from NCRA and efficient field verification exercise by ECSL.

Integration of National Identity Number (NIN - CPC Recommendation 54)

Amend Section 13 of the PEA to authorize the use of NIN for voter registration and identification. This will streamline verification and reduce duplication. It is also highly recommended that the Government should consider further subsidising the acquisition of national ID cards, thereby reducing resources required by ECSL for voter identification.

Benefits

- Streamlines voter identification and reduces duplication.
- Enhances data integrity by linking voter records to verified national identity.
- Facilitates interoperability between ECSL and NCRA systems.
- Fosters the enrolment of citizens of Sierra Leone in the civil registry for the purpose of participation in the electoral process.

- Reduces resources required for ECSL voter identification purposes.

Risks if Not Implemented:

- Continued duplication and inconsistencies in voter data.
- Complexity of voter registration operation and finalization of the voter data.
- Increased cost and complexity of separate registration systems and identification cards.
- Reduced public trust in the credibility of the voter register.

Publication Timelines (CPC Recommendation 55)

Amend PEA Section 15(2) to require ECSL to publish registration centre locations at least two months before the start of voter registration. This enhances transparency and operational preparedness of ECSL.

Benefits:

- Improves transparency and public confidence.
- Allows voters and stakeholders to prepare adequately.
- Reduces logistical confusion and last-minute complaints.

Risks if Not Implemented:

- Voter disenfranchisement due to lack of awareness.
- Increased suspicion and political tension around registration logistics.
- Operational inefficiencies and poor turnout.

Deduplication Transparency (CPC Recommendation 56)

Introduce legal provisions requiring ECSL to formally notify stakeholders before deduplication. Allow party agents to observe the process to build trust.

Benefits:

- Builds trust among political parties and civil society.
- Ensures accountability in voter data management.
- Reduces risk of arbitrary or biased data removal.

Risks if Not Implemented:

- Allegations of manipulation or bias in voter register.
- Legal challenges and disputes over voter eligibility.
- Erosion of stakeholder confidence in ECSL processes

Final Register Distribution and Display (CPC Recommendation 57)

Amend PEA Section 37 to mandate ECSL to provide copies of the final register of voters at each ECSL District Office for public viewing at least 3 months before polling day and ensure distribution to political parties in electronic format three months prior to the polls. The CPC recommends publication of final register of voters 6 months before elections. This recommendation seems quite ambiguous and recipe for different interpretations and confusion. Technically, this would pose serious operational and financial challenges to the ECSL to “publish” the register of voters at a location. Hence, the modification to achieve the intended outcome.

Benefits if Implemented:

- Enables voters to identify their location on the register of voters prior to arrival at the polling centre.
- Enhances preparedness of political parties and observers.
- Promotes transparency and electoral integrity.

Risks if Not Implemented:

- Voters may be unaware of their registration status and place of voting.
- Increased number of voters queuing at the wrong polling station on polling day.
- Potential disenfranchisement and post-election disputes.

External Audit Requirements (CPC Recommendation 58)

Amend the Public Elections Act to require the ECSL to commission an independent and impartial organisation to conduct an external audit of the provisional voters' register to assess the accuracy and completeness of the register nine months before a general election. The audit report should be publicly released to ensure credibility.

Benefits:

- Independent validation of voter register accuracy.
- Identifies and corrects systemic issues before elections.
- Strengthens credibility of the electoral process.

Risks if Not Implemented:

- Persistent doubts about the accuracy of the voter register.
- Reduced confidence among political parties, development partners and observers.
- Missed opportunity to improve future registration exercises.

7.3 Auditing of the Register of Voter

A voter register audit is a systematic review of the voter registration database to ensure its **accuracy, integrity, and compliance** with electoral laws and standards. It typically involves:

- Verifying that only eligible voters are enrolled.
- Identifying and removing duplicates, deceased individuals, or ineligible entries.
- Ensuring proper voter transfers and updates.
- Assessing the processes used to create and maintain the register.

Audits can be **routine**, **forensic**, or **citizen-led**, and may occur **before**, **during**, or **after** an election cycle.

Advantages of Auditing a Voter Register

- Ensures that elections are based on a clean and accurate voter roll, reducing fraud and manipulation.
- Transparency in the audit process can increase voter and contestants' confidence in the electoral system.
- Audits can uncover flaws in registration processes, such as unauthorized transfers or technical errors.
- Helps electoral commissions meet legal obligations and international standards.

- Promotes better data management and integration with civil registries or biometric systems.

Disadvantages of Auditing a Voter Register

- Audits require skilled personnel, application/system and time, which may strain electoral budgets.
- If not independently conducted, audits may be used to suppress voter participation or target specific groups.
- There is no universally accepted methodology for voter register audits stipulated in the legislation or regulatory policies, leading to inconsistent practices.

8.4 Audit Examples from Peer Countries

Liberia (2016 and 2023):

Methodology Used

- **People-to-List and List-to-People Approach**:
  - **2017**: Manual and electronic verification through lists and databases.
  - **2023**: Enhanced use of digital systems, cross-referencing multiple databases, biometric verification, and voter ID checks.
- **Data Comparison & Reconciliation**: Comparing voter roll data with other government records, such as electoral rolls, national ID databases, and biometric data.
- **Sampling & Field Verification**: Random sampling of voters for in-person verification, especially to identify duplicates or deceased voters.
- **Technology Tools**:
  - Database management systems.
  - Biometric identification systems.
  - Data analysis and matching software.
  - Blockchain or encrypted databases for secure data handling (more prominent in 2023).

Responsible Parties / Entities

- **Election Commissions of Liberia/ UNDP support project**
  - 2017: National Electoral Commission or equivalent.
  - 2023: Expanded role with technological partners and data security agencies.
- **Government Data and Identity Agencies**
  - Provided biometric and identity data.
- **IT and Data Analytics Vendors**
  - Developed and maintained voter management systems.
- **Auditing Teams and Independent Observers**
  - Conducted field and data verification activities.

Key Findings

- **2017 Audit**:
  - Identification of duplicate entries and deceased voters.
  - Inaccuracies in voter data across regions.
  - Instances of voter registration gaps.
- **2023 Audit**:
  - Significant reduction in duplicates and inactive voters through biometric verification.
  - Improved data accuracy and real-time updating.
  - Detection of potential voter impersonation issues in some regions.
  - Enhanced transparency and public trust owing to technology integration.

Challenges

- **Data Integrity and Privacy**:
  - Ensuring voter data confidentiality and security.
- **Technical Limitations**:
  - Incomplete or outdated databases.
  - Connectivity and infrastructure issues in remote areas.
- **Logistical Issues**:
  - Reaching remote zones.
  - Training personnel effectively.
- **Legal and Ethical Concerns**:
  - Data sharing among agencies.
  - Ensuring compliance with privacy law

Ghana (2020)

Methodology

- Biometric registration system
- Biometric verification devices (BVDs)
- Exhibition of provisional register for public verification.

Responsible Entities

- Electoral Commission (EC)
- Coalition of Domestic Election Observers (CODEO) & Political parties

Key Findings

- Exhibition exercise enabled corrections and verification
- Increased transparency
- Identified missing names and biometric mismatches.

Challenges

- Low public participation,
- BVD malfunctions
- COVID-19 protocol compliance issues
- political tensions over data integrity.

Chapter 10 - Voter Registration Operational Plan

The study found evidence of operational planning by ECSL over the past electoral cycles. Operational plans were developed based on activities rather than developed for the entire electoral cycle incorporating all electoral events leading to elections in one document. However, ECSL did not enforce the culture of mainstreaming activities operational plans across the Commission as well as adopting a robust M&E plan on the implementation of the operational plan. A robust M&E mechanism across the ECSL provides a structured way to track progress against planned activities, timelines, and budgets.

It is highly recommended that ECSL adopt the multi-year operational planning approach, covering all electoral activities within an electoral cycle. Some benefits of the multi-year operational planning approach include:

- Provides a clear roadmap for all phases, such as registration, boundary delimitation, voter education, polling, and post-election activities.
- Reduces last-minute decisions and crisis management.
- Enables phased budgeting and early procurement, minimizing funding gaps and cost overruns.
- Facilitates donor engagement and long-term financing commitments.
- Allows time for staff training, technology upgrades, and process improvements.
- Builds in contingency planning for technical, financial, and political risks.

Detailed Operational Plan for Update of Voter Registration 2027 is attached.

Chapter 11 - Cost Estimates for Recommended Option

This version assumes cost categories typical for large-scale election preparation in a developing context — focusing on sustainability, cost-effectiveness, and Sierra Leone's existing institutional and IT capacity. Indicative cost estimates are only for ECSL and does not include NCRA costs.

A. Cost Components and Estimates

Cost Category	Description	Estimated Cost (USD)	Notes / Assumptions
1. System Integration & ICT Infrastructure	Development of secure API interface between NCRA & ECSL systems; server upgrades, database licensing, cybersecurity setup, backup configuration.	**$2,000,000**	Based on integration and ICT infrastructure costs from similar projects (e.g., Ghana)
2. Software Customization & Data Management Tools	Customization of voter management software, data cleaning, de-duplication, and reporting modules.	**$800,000**	Includes ICT consultant support and software licensing.
3. Equipment Procurement and printing	Computers, tablets, backup drives, routers, and generators/solar panels for ECSL HQ and District offices, printing	**$1,500,000**	Phased procurement over 2026–2027.
4. Capacity Building & Training	Training ECSL IT staff, field registration officers, and data clerks on system operation, maintenance, and data security. Procurement of voter registration training kits.	**$700,000**	Includes training kits/stationeries, training of trainers (TOT) course and district workshops
5. Field Verification Exercise	Voter verification, corrections, inclusion of unregistered eligible voters, ID cards printing and Exhibition.	**$4,000,000**	Includes transport, allowances, logistics, and materials.
6. Public Awareness & Communication	Voter education on registration updates and ECSL-NCRA data linkage.	**$400,000**	Includes radio, TV, social media, and community outreach.

7. Data Audit, Verification & Quality Assurance	Independent audit of voter data integrity, duplicates removal, and validation.	**$200,000**	External audit and local observer participation.
8. Contingency & Maintenance Fund	5% reserve for unforeseen technical or logistical costs.	**$500,000**	To cover inflation and system updates before 2028 elections.

B. Total Estimated Cost Range (2026–2028 Implementation Period)

≈ USD 10.6 million

C. Cost Phasing by Year

Year	Major Activities	Estimated Annual Cost (USD)
2025	Legal/policy review, stakeholder consultations, planning, and design	**$0.8 million**
2026	System development, integration, procurement, and pilot	**$3.0 million**
2027	Capacity building, logistics, and field preparation	**$2.5 million**
2027/28	Verification exercise, data cleaning, exhibition, audit, and public awareness	**$3.5 million**
2029	Final updates, system maintenance, and post-election review	**$1.0 million**

D. Cost Efficiency and Sustainability Rationale

- **Leverages existing NCRA infrastructure**, reducing the cost of a full-scale biometric registration.
- **Enhances sustainability** through joint ECSL-NCRA maintenance and data sharing agreements.
- **Builds in local capacity**, minimizing long-term reliance on foreign contractors.
- **Phased budgeting** allows resource mobilization from government and development partners.
- **Reduced per-voter cost** compared to standalone biometric registration

Chapter 12 - Conclusion

The integrity of Sierra Leone's electoral process hinges on a credible, inclusive, and technologically resilient voter registration system. The current framework, anchored on collaboration between the ECSL and the NCRA, has demonstrated potential but remains constrained by operational, legal, and infrastructural gaps that must be addressed ahead of the 2028 elections.

12.1 Current Voter Registration Process, System & Capacity

ECSL presently relies on periodic extraction of eligible voter data from NCRA's civil registry, followed by field verification using Voter Verification Kits (VVKs). While this hybrid approach reduces duplication and leverages national identity systems, it faces challenges including outdated ICT infrastructure, non-functional power backups, and limited technical capacity within ECSL. Staff competencies in cybersecurity, ICT governance, and disaster recovery are minimal, creating systemic vulnerabilities.

12.2 Key Findings & Gaps

- **ICT & Infrastructure:** Core servers and storage are beyond end-of-life; UPS and solar systems are non-functional; over 1,700 VVKs are deteriorating in poor storage conditions.
- **Operational Weaknesses:** Delayed planning, inadequate public communication, and persistent data mismatches undermine efficiency.
- **Legal Ambiguities:** Lack of clarity in data-sharing protocols and deduplication transparency.
- **Capacity Deficits:** ECSL lacks advanced ICT skills, limiting ability to manage secure and scalable systems.

12.3 Recommended Option & Justification

The study recommends **a hybrid model combining periodic encrypted data transfers from NCRA with joint field verification**. This approach balances technical feasibility, cost-effectiveness, and public trust. It allows ECSL to validate NCRA data, incorporate new registrants, and maintain transparency through provisional and final voter register exhibitions. Compared to real-time API integration or full offline transfers, this option is operationally simpler, resilient to connectivity challenges, and aligned with ECSL's current capacity.

12.4 Legal, Regulatory & Audit Pathways

Reforms should include:

- Integration of **National Identity Numbers (NIN)** into the voter registration process.
- Establishment of **permanent voter verification platforms** (web, SMS, mobile app).
- Mandatory **external audits** of the provisional register nine months before elections.
- Publication of operational plans and registration center lists well in advance. These measures will enhance transparency, reduce duplication, and build stakeholder confidence.

12.5 Capacity & Infrastructure Upgrades; Operational Planning

Immediate priorities:

- Procure a bespoke **ETL (Extract, Transform, and Load) application** designed to extract structured data from NCRA primary relational database, apply necessary transformations, and load it into ECSL database to support downstream analytics and operational processes.
- Replace end-of-life servers and storage; restore UPS and solar backups.
- Repair and repurpose VVKs; secure climate-controlled storage.
- Launch structured ICT capacity-building programs (ISO 27001, ITIL, CISSP certifications) and peer exchanges with regional electoral bodies.
- Adopt a **multi-year operational planning approach** covering the entire electoral cycle, supported by a robust Monitoring & Evaluation (M&E) mechanism to track progress, budgets, and risks.

12.6 Roadmap for 2028 Elections

- **2025–2026:** Strategic planning, legal reforms, system design, and procurement.
- **2026–2027:** Capacity building, logistics, and field preparation.
- **2027:** Nationwide voter registration and verification.
- **2028:** Data audit, finalization, and system maintenance. This phased approach ensures readiness, transparency, and cost efficiency.

12.7 Budget for Recommended Option

The estimated cost for 2025–2029 implementation is **USD 10.6 million**, phased across system integration, equipment procurement, capacity building, field verification, public awareness, and audits. This leverages existing NCRA infrastructure, reducing per-voter costs compared to standalone biometric registration.

12.8 Risks

- **Political:** Trust deficits and partisan tensions may delay reforms.
- **Technical:** Equipment failures and power outages could disrupt operations.
- **Financial:** Funding gaps and procurement delays risk implementation timelines. Mitigation strategies include early resource mobilization, transparent procurement, robust backup systems, and conflict-sensitive communication.

In summary, the proposed hybrid model, supported by legal reforms, infrastructure upgrades, and a multi-year operational plan, offers a sustainable pathway to deliver a credible voter register for the 2028 elections. Successful implementation will require strong institutional coordination, timely financing, and unwavering commitment to transparency and accountability.

ANNEX A List of Stakeholders Consulted

No.	Name	Designation
1	George Baratashvilli	UNDP CTA
2	Mr. Edmond S Alpha	Acting Chief Electoral Commissioner & Chairman, ECSL
3	Mr. Kelvin Petrini	UNDP Deputy Resident Representative
4	Dr. David Moinina Sengeh	Chief Minister, Government of Sierra Leone
5	Ms. Seraphine Wakana	UN Resident Coordinator, Sierra Leone
6	Mohamed Mubashir Massaquoi	Director General, NCRA
7	Mr. William A. Davies	Executive Secretary, ECSL
8	Mr. Olu A. Davies	Executive Secretary, PPRC
9	Dr. Kelfala Marah	Chief Negotiator, APC

Group Meetings-

- ECSL Commissioners, Senior Management & Directors – Inception Meeting
- Technical Working Group on VR & RMS – Weekly Meeting
- NCRA Director General, Senior Management & technical Staff
- PPRC Registrar, Senior Management & Political Parties Representative
- ECSL Departmental Meetings with: Information Technology, Data Management & Voters Roll, Training & Procedures, Legal Affairs, Operations
- APC Chief Negotiator & Technical Team

Field Visits

- Wellington Data Center
- Nothern Regional Office
- Makeni District Office
- Kabala District Office
- Southern Regional Office
- Bo District Office
- Mattru-Jong District Office