Learning Visits that count for NSTIC-SL – A Proposal

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A) Current Standing of Sierra Leone's SGC, NSTIC-SL, Against SGCI Objectives – A Mapping Exercise

The National Science Technology and Innovation Council of Sierra Leone (NSTIC-SL) is still in its early stages of development, with a strong focus on building foundational capacities and establishing effective systems for managing science, technology, and innovation (STI). Below is an assessment of NSTIC-SL's current standing against each of the objectives of the Science Granting Councils Initiative (SGCI), along with examples of four SGCs that NSTIC-SL can learn from.

1. Strengthening the Capacities of SGCs to Manage Research

Current Standing of NSTIC-SL:

- **Early Development:** NSTIC-SL is in the process of establishing its capacity to manage research funding effectively. It is working on setting up systems for grant management, financial oversight, and administrative processes, but these systems are not yet fully developed or operational.
- **Challenges:** Limited experience in managing large-scale research projects, a need for capacity building among staff, and the development of clear, transparent processes for grant allocation and monitoring.

Examples of SGCs to Learn From:

- **South Africa (National Research Foundation - NRF):**
    - **Why:** The NRF is a well-established SGC with advanced systems for managing research funding, including transparent grant application processes, rigorous peer review, and comprehensive financial management. NSTIC-SL can learn from NRF's best practices in setting up efficient research management systems.
- **Uganda (Uganda National Council for Science and Technology - UNCST):**
    - **Why:** UNCST has successfully built capacity in managing research grants, particularly through its Grant Management System (GMS), which Sierra

Leone has already used. NSTIC-SL can deepen its collaboration with UNCST to refine its own grant management processes.

- **Kenya (National Commission for Science, Technology and Innovation - NACOSTI):**
    - **Why:** NACOSTI has strong frameworks for managing research funds, prioritizing research that aligns with national development goals. NSTIC-SL can adopt similar strategies for aligning research funding with Sierra Leone's priorities.
- **Rwanda (Rwanda National Council for Science and Technology - NCST):**
    - **Why:** NCST has built effective research management systems, emphasizing transparency and accountability. NSTIC-SL can learn from NCST's approach to ensuring that research funding is effectively utilized and monitored.
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2. Supporting Research Excellence and Innovation

Current Standing of NSTIC-SL:

- **Developing Infrastructure:** NSTIC-SL is working on fostering research excellence and innovation, but it faces challenges related to limited infrastructure, resources, and technical expertise. Efforts are being made to create environments that support high-quality research and innovation, but more support is needed.
- **Challenges:** Insufficient research infrastructure, limited access to advanced technologies, and a need for more robust support systems for innovation and commercialization.

Examples of SGCs to Learn From:

- **Ghana (Council for Scientific and Industrial Research - CSIR):**
    - **Why:** CSIR has successfully promoted research excellence in agriculture and environmental sciences, aligning research with national needs. NSTIC-SL can learn from CSIR's model of integrating research with national development.

- **Nigeria (Tertiary Education Trust Fund - TETFund):**
    - **Why:** TETFund focuses on promoting research excellence in higher education and has developed systems to support innovation in academia. NSTIC-SL can benefit from TETFund's approach to fostering research that leads to practical applications.
- **Botswana (Botswana Innovation Hub - BIH):**
    - **Why:** BIH emphasizes innovation and entrepreneurship, creating supportive ecosystems for startups. NSTIC-SL can learn from BIH's strategies for fostering innovation and supporting small and medium enterprises (SMEs).
- **South Africa (Technology Innovation Agency - TIA):**
    - **Why:** TIA focuses on promoting technological innovation and supporting the commercialization of research. NSTIC-SL can adopt similar strategies to encourage innovation and support the transition of research into marketable products.
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3. Enhancing Research Collaboration and Partnerships

Current Standing of NSTIC-SL:

- **Building Networks:** NSTIC-SL is in the process of establishing research collaborations both within Sierra Leone and with international partners. However, these networks are still in their infancy, and more effort is needed to build strong, sustainable partnerships.
- **Challenges:** Limited experience in fostering international collaborations, lack of established networks, and the need for stronger engagement with regional and global research communities.

Examples of SGCs to Learn From:

- **Senegal (National Research Fund - FNR):**
    - **Why:** FNR has effectively built regional collaborations, particularly in West Africa, and has secured funding for joint research projects. NSTIC-SL can learn from FNR's approach to building partnerships and securing regional cooperation.

- **Tanzania (Commission for Science and Technology - COSTECH):**
    - **Why:** COSTECH has developed strong partnerships across Africa, particularly in health and agricultural research. NSTIC-SL can benefit from COSTECH's experience in establishing cross-border research collaborations.
- **Mauritius (Mauritius Research Council - MRC):**
    - **Why:** MRC has successfully engaged in international collaborations, particularly in areas like environmental science and technology. NSTIC-SL can adopt MRC's strategies for building international research networks.
- **Ghana (Council for Scientific and Industrial Research - CSIR):**
    - **Why:** CSIR's involvement in regional and international research collaborations can provide valuable lessons for NSTIC-SL on how to build and sustain research partnerships that contribute to national development goals.

4. Improving the Use of Evidence in Policymaking

Current Standing of NSTIC-SL:

- **Evidence-Based Policy Development:** NSTIC-SL is working towards using scientific evidence to inform policy, but this area requires significant strengthening. There is a need for better data collection, analysis, and integration of research findings into policy decisions.
- **Challenges:** Limited capacity for data analysis, insufficient integration of research into policy frameworks, and a lack of established processes for translating research into actionable policy.

Examples of SGCs to Learn From:

- **Ghana (Council for Scientific and Industrial Research - CSIR):**
    - **Why:** CSIR has successfully integrated scientific research into national policy, particularly in agriculture and environmental management. NSTIC-SL can learn from CSIR's methodologies for using evidence to inform policy decisions.

- **Uganda (Uganda National Academy of Sciences - UNAS):**
    - **Why:** UNAS has a strong track record of influencing public policy through evidence-based research, especially in health. NSTIC-SL can benefit from UNAS's strategies for engaging policymakers and translating research into policy recommendations.
- **Kenya (African Academy of Sciences - AAS):**
    - **Why:** AAS has been instrumental in promoting the use of scientific evidence in policymaking across Africa. NSTIC-SL can adopt AAS's methods for ensuring that research findings are effectively used to inform policy at the national level.
- **Rwanda (Rwanda Governance Board - RGB):**
    - **Why:** RGB has effectively used data and research to guide governance and policy decisions in Rwanda. NSTIC-SL can learn from RGB's approach to integrating research into governance frameworks and ensuring that policies are informed by credible data.

Conclusion

Sierra Leone's NSTIC-SL is in the early stages of development, with a strong focus on building the foundational capacities necessary for effective research management, innovation promotion, collaboration, and evidence-based policymaking. By learning from the experiences of SGCs in South Africa, Ghana, Uganda, Kenya, Rwanda, Senegal, Tanzania, Botswana, and Mauritius, NSTIC-SL can develop the systems and strategies needed to fulfill its mandate and contribute meaningfully to Sierra Leone's STI development. Establishing partnerships with these leading SGCs and participating in regional initiatives can provide NSTIC-SL with the support and guidance needed to achieve its objectives.

B) Four SGCs to be visited by NSTIC-SL

Based on the initial experiences and links established by Sierra Leone's National Science Technology and Innovation Council (NSTIC-SL), so far, as well as its current standing against the objectives of the Science Granting Councils Initiative (SGCI), the following four Science Granting Councils (SGCs) are recommended for NSTIC-SL to visit. These SGCs have demonstrated excellence in areas where NSTIC-SL is looking to build capacity and can provide valuable lessons that are directly applicable to Sierra Leone's context.

1. Uganda (Uganda National Council for Science and Technology - UNCST)

Why Uganda?

- **Established Relationship and Familiarity:** NSTIC-SL has already used Uganda's Grant Management System (GMS) for their first call for research proposals. This existing collaboration provides a strong foundation for further learning.
- **Grant Management Expertise:** UNCST has a proven track record in effectively managing research grants, which is critical for NSTIC-SL as it continues to build its capacity in this area. NSTIC-SL can learn how to refine and enhance its grant management processes by deepening its collaboration with UNCST.
- **Sectoral Focus on Agriculture and Health:** Uganda's focus on impactful research in agriculture and health, sectors that are also priorities for Sierra Leone, offers relevant lessons on aligning research with national development goals.

Key Learning Areas:

- Improving grant management systems and processes.
- Aligning research priorities with national development goals.
- Strengthening administrative and financial oversight in research funding.

2. Ghana (Council for Scientific and Industrial Research - CSIR)

Why Ghana?

- **Regional Proximity and Similar Challenges:** As a neighboring West African country, Ghana shares many of the same socio-economic challenges as Sierra Leone. CSIR's successful integration of research into national policy, particularly in agriculture and environmental management, makes it an ideal model for NSTIC-SL.
- **Research Management and Policy Integration:** CSIR has effectively managed research funding and ensured that research outcomes are integrated into national development policies. NSTIC-SL can benefit from learning how CSIR has aligned its research agenda with national priorities.
- **Regional Collaboration:** Ghana has been successful in fostering regional collaborations, which is a critical area for NSTIC-SL to develop as it seeks to strengthen its own networks.

Key Learning Areas:

- Integrating research into national policies and development goals.
- Developing effective research management systems.
- Building and sustaining regional research collaborations.

3. Botswana (Botswana Innovation Hub - BIH)

Why Botswana?

- **Focus on Innovation and Entrepreneurship:** Botswana's Innovation Hub (BIH) has successfully promoted innovation through public-private partnerships and support for startups. This focus aligns well with NSTIC-SL's goal of fostering a vibrant innovation ecosystem in Sierra Leone.
- **Practical, Scalable Approaches:** Botswana's experience in creating an enabling environment for SMEs and startups is directly applicable to Sierra Leone's context, where similar approaches can drive economic growth through STI.
- **Regional Experience:** Botswana's involvement in regional initiatives and its success in fostering innovation and entrepreneurship can provide NSTIC-SL with practical strategies for building its own innovation ecosystem.

Key Learning Areas:

- Fostering innovation and entrepreneurship through public-private partnerships.
- Creating an enabling environment for startups and SMEs.
- Developing innovation hubs and supporting commercialization of research.

4. Kenya (National Commission for Science, Technology and Innovation - NACOSTI)

Why Kenya?

- **Effective Research Funding and Innovation Promotion:** NACOSTI's success in managing research funds and promoting innovation, especially in agriculture, health, and ICT, provides valuable lessons for NSTIC-SL as it seeks to strengthen its research management capabilities.
- **Public-Private Partnerships (PPPs):** Kenya's experience in engaging the private sector in STI initiatives could help Sierra Leone develop similar partnerships to boost innovation and commercialization.
- **Regional and International Collaborations:** Kenya's active role in regional collaborations can provide NSTIC-SL with strategies for building stronger research networks across Africa.

Key Learning Areas:

- Managing research funding and aligning it with national priorities.
- Developing public-private partnerships to support STI initiatives.
- Building and sustaining regional and international research collaborations.

Conclusion:

A learning visit to Uganda, Ghana, Botswana, and Kenya offers NSTIC-SL the most relevant and practical insights into strengthening its capacities across key areas. Uganda provides expertise in grant management with an existing relationship that can be deepened. Ghana offers lessons in integrating research with national policies and fostering regional collaborations. Botswana's focus on innovation and entrepreneurship through public-private partnerships is directly applicable to Sierra Leone's context. Kenya's experience in research funding, innovation promotion, and public-private partnerships will provide NSTIC-SL with the tools needed to advance its STI agenda effectively. Together, these four countries provide a comprehensive learning opportunity that addresses the immediate and long-term needs of NSTIC-SL.

C) Proforma to be used during the Learning Visits

In order to ensure that each visit is productive through the realization of the assigned key learning points, especially as these are aligned with NSTIC-SL's goals, a proforma/checklist or framework to be utilized during the learning visits to each of the four recommended countries (Uganda, Ghana, Botswana, and Kenya), is proposed below,

1. Uganda (Uganda National Council for Science and Technology - UNCST)

Focus: i) Grant Management, ii) Sectoral Focus on Agriculture and Health, iii) Gender Equality and Women's Empowerment (GEWE)

Area of Focus	Questions/Checklist Items	Observations/Notes
Grant Management Systems	- How is the Grant Management System (GMS) structured and operated?	
	- What are the key components of the GMS that ensure transparency and accountability?	
	- How are proposals evaluated and selected for funding?	
	- What challenges have been encountered in managing grants, and how have they been addressed?	

Area of Focus	Questions/Checklist Items	Observations/Notes
Capacity Building	- What training programs are available for staff involved in grant management?	
	- How is capacity building integrated into the daily operations of UNCST?	
Sectoral Focus: Agriculture and Health	- How does UNCST prioritize research in agriculture and health?	
	- What are the successful projects in these sectors, and what impact have they had?	
	- How does UNCST ensure that research outcomes are translated into policy and practice?	
Gender Equality and Women's Empowerment (GEWE)	- How does UNCST incorporate GEWE into its research funding and management practices?	
	- Are there specific programs or initiatives aimed at increasing the participation of women in STI?	
	- What impact have these GEWE-focused programs had on research and innovation outcomes?	

2. Ghana (Council for Scientific and Industrial Research - CSIR)

Focus: i) Integrating Research into National Policy,
ii) Regional Collaboration,
iii) Energy

Area of Focus	Questions/Checklist Items	Observations/Notes
Research Management Systems	- How does CSIR manage its research funding and align it with national priorities?	
	- What processes are in place to ensure research quality and relevance?	
Policy Integration	- How are research outcomes integrated into national development policies?	
	- Can you provide examples of successful research-to-policy translations?	
	- What role does CSIR play in advising the government on STI policy?	
Regional Collaboration	- How does CSIR engage with regional partners and networks?	
	- What are the key benefits and challenges of regional collaboration?	
	- How are research outcomes shared and leveraged across the region?	

Area of Focus	Questions/Checklist Items	Observations/Notes
Energy	- What are the key areas of research and innovation in energy that CSIR focuses on?	
	- How does CSIR contribute to Ghana's energy policies, particularly in renewable energy and energy efficiency?	
	- What partnerships exist between CSIR and energy sector stakeholders (e.g., government, private sector, NGOs)?	

3. Botswana (Botswana Innovation Hub - BIH)

Focus: i) Innovation and Entrepreneurship, ii) Public-Private Partnerships, iii) New and Emerging Technologies

Area of Focus	Questions/Checklist Items	Observations/Notes
Innovation Ecosystem	- How does BIH support innovation and entrepreneurship?	
	- What are the key components of the innovation ecosystem (e.g., incubators, accelerators, mentorship programs)?	
Public-Private Partnerships (PPPs)	- How are PPPs structured and managed at BIH?	
	- What incentives are provided to the private sector to invest in innovation?	
	- Can you provide examples of successful PPPs that have led to commercialization of research?	
Support for Startups and SMEs	- What specific programs or initiatives are in place to support startups and SMEs?	
	- How are these programs funded and sustained?	
	- What are the key challenges faced by startups and how does BIH address them?	

Area of Focus	Questions/Checklist Items	Observations/Notes
New and Emerging Technologies	- What are the key new and emerging technologies that BIH focuses on?	
	- How does BIH foster the development and commercialization of these technologies?	
	- Are there specific partnerships or initiatives aimed at promoting emerging technologies (e.g., AI, biotech, nanotech)?	

4. Kenya (National Commission for Science, Technology and Innovation - NACOSTI)

Focus: i) Research Funding and Innovation Promotion,
ii) Public-Private Partnerships,
iii) Gender Equality and Women's Empowerment (GEWE),
iv) New and Emerging Technologies

Area of Focus	Questions/Checklist Items	Observations/Notes
Research Funding Management	- How does NACOSTI manage research funding to ensure alignment with national priorities?	
	- What processes are in place to evaluate and monitor funded projects?	
	- How does NACOSTI handle the challenges of funding allocation and accountability?	
Innovation Promotion	- What strategies does NACOSTI use to promote innovation, particularly in agriculture, health, and ICT?	
	- Can you provide examples of successful innovations that have been scaled and commercialized?	

Area of Focus	Questions/Checklist Items	Observations/Notes
Public-Private Partnerships (PPPs)	- How does NACOSTI engage the private sector in STI initiatives?	
	- What are the most successful PPPs that have emerged from NACOSTI's programs?	
	- What challenges are faced in establishing and maintaining PPPs, and how are they overcome?	
Gender Equality and Women's Empowerment (GEWE)	- How does NACOSTI integrate GEWE principles into its STI programs and initiatives?	
	- What are the specific strategies used to promote women's participation in research and innovation?	
	- What impact have GEWE-focused initiatives had on the outcomes of STI projects in Kenya?	
New and Emerging Technologies	- What new and emerging technologies does NACOSTI prioritize?	
	- How does NACOSTI support the development and adoption of these technologies across different sectors?	
	- What partnerships exist to advance research and commercialization of emerging technologies (e.g., AI, biotech, renewable energy)?	

Conclusion:

These checklists provide a comprehensive framework for NSTIC-SL representatives to ensure that their learning visit covers all critical areas relevant to strengthening Sierra Leone's STI ecosystem. By focusing on grant management, policy integration, innovation promotion, public-private partnerships, energy, new and emerging technologies, and GEWE, the NSTIC-SL team can gather valuable insights and actionable strategies from Uganda, Ghana, Botswana, and Kenya.