

Proof of Concept | SITE — Domain Selection from MAPS for Sierra Leone

SABI Finding (Sierra Leone)	MAPS Domain	Selection Rationale	Interdependency
<ul style="list-style-type: none"> No functional procurement system nationally Consumables sourced ad hoc from international donations Frequent stockouts halt fabrication regardless of infrastructure 	S Supply Chain	Barrier interaction analysis showed supply chain failures reconstitute fabrication constraints even after infrastructure improvements. Cannot address infrastructure or technology without reliable material supply.	<p>These four domains form an interdependent set.</p> <p>Barrier interaction analysis confirmed that addressing any subset without the others reproduces the vicious cycles identified through SABI.</p> <p>Supply chain without infrastructure leaves fabrication constrained; infrastructure without workforce leaves facilities underutilized; workforce without appropriate technology produces clinicians without effective devices to fit.</p> <p><i>SITE formalized in the MIT-MOHS MOU, January 2023–January 2027.</i></p>
<ul style="list-style-type: none"> Mean facility score 10.75/25 — all four facilities severely constrained Equipment functionality mean 1.25/5; fewer than 25% of tools operational Power available ~4-6 hrs/day at NRC; generator use fuel-constrained 	I Infrastructure	Physical facility conditions were the most acute bottleneck on production capacity. Workforce training and technology improvements cannot take effect in non-functional clinical environments.	
<ul style="list-style-type: none"> Gold-standard fabrication (carbon fiber, resin lamination) unavailable Thermoplastic substitution due to equipment failure — premature device breakdown No national prescribing guidelines; donated devices often contextually inappropriate 	T Technology	Device quality failures drove the vicious cycle of abandonment and reduced demand. Restoring appropriate technology is prerequisite to breaking the infrastructure-quality-demand spiral.	
<ul style="list-style-type: none"> 1 Category I clinician nationally; 40-80x below WHO benchmark Caseload exceeded sustainable capacity; quality and follow-up compromised Cross-level cascade: financing gap → workforce gap → access failure 	E Education & Workforce	Workforce deficit was identified as the central cross-level cascade driver. Infrastructure, supply chain, and technology investments are underutilized without sufficient trained clinicians to deploy them.	