



Network access and performance in underserved areas

June 2026

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Executive Summary: Coverage vs. Connection

Real-World Access: Moving Beyond the Coverage Map

The Core Problem: Traditional coverage maps often suggest a network is fully available, yet real-world signal conditions expose massive hidden performance gaps.

The Study Framework: This nationwide evaluation tracked 3,113 geographic zones between June 2025 and May 2026 to categorize communities into **Good Signal Zones** and **Underserved Zones** based on actual hardware reception.

The Big Takeaway: Nearly **41.1% of monitored areas** qualify as underserved, showing a severe baseline drop in internet responsiveness and data transfer speeds.

Strength vs. Quality: Coverage Gaps vs. Network Congestion

Understanding the Metrics: The study uses two distinct data lenses to diagnose network issues:



Signal Strength (RSRP): Measures the physical power of the cell signal reaching your phone. Low levels mean you are too far from a tower.



Signal Quality (RSRQ): Measures the signal purity against background noise and network traffic jam levels.

The Diagnosis: Physical coverage gaps (low strength) are a massive nationwide challenge. Conversely, congestion (low quality) is highly localized to specific urban hot zones.

We classified every area into two groups for comparison:



Good Signal Zones: Areas with strong, clear connections ($\text{RSRP} \geq -100 \text{ dBm}$ and $\text{RSRQ} \geq -15 \text{ dB}$).



Underserved Zones: Areas with weak or noisy signals ($\text{RSRP} < -100 \text{ dBm}$ or $\text{RSRQ} < -15 \text{ dB}$).

Underlying Issue Type	Share of National Grid (%)	Primary Driver for Regulators
Weak Physical Signal Strength	40.90%	Widespread baseline tower shortages in rural corridors.
Degraded Signal Traffic Quality	1.90%	Localized cell overloading in dense urban spaces.

The Functional Performance Penalty

What the Data Shows: When a community falls into an underserved signal zone, the technical penalty translates directly into severe functional limitations for daily applications.

The Real-World Test: Standard web pages take longer to display, mobile app store downloads stall, and remote video streams frequently buffer.

The Hidden Power Strain: Devices forced to operate in weak signal areas must automatically crank up internal transmission power, causing rapid battery drain and processor overheating.



Mapping the Gaps: Priority Infrastructure Corridors

What the Data Shows: Network deficiencies are heavily clustered into predictable geographical patterns across the country.

The Structural Divide:

 Northern Rural Corridors: A severe, continuous structural coverage gap stretches from Sokoto through the Borno corridor.

 Southern Logistics & Delta Segments: Notable signal gaps persist across the Niger Delta and within peripheral sectors around Kwara and Oyo.

 Urban Congestion Rings: Quality constraints are tightly bound to high-density suburbs surrounding Lagos and Ibadan.

Target Geographic Corridor	Primary Signal Profile	Dominant Root Cause	Recommended Technical Fix
Sokoto through Borno Corridor	Low Strength (RSRP)	Widespread Tower Deficit	Deploy targeted rural macro towers.
Lagos and Ibadan Suburbs	Low Quality (RSRQ)	Localized Overloading	Apply sector splitting & traffic balancing.
Niger Delta Infrastructure Ring	Low Strength (RSRP)	Geographic Isolation	Expand regional transmission backhaul paths.

Action Roadmap for Balanced Access

Evidence-Based Networks: Target Outcomes for Consumers

 **Population-Weighted Expansion:** Prioritizing new tower construction based on long-term regional population density and commercial sustainability rather than geographic area alone.

 **Urban Traffic Refarming:** Directing immediate capacity enhancements (spectrum optimization and carrier aggregation) to the 59 congested urban-adjacent zones.

 **Signal-Driven Regulation:** Transitioning from aggregate national throughput trackers to signal power benchmarks to accurately isolate coverage gaps from traffic load.

 **Sustainable Connectivity:** Eliminating the weak signal loop to automatically reduce consumer smartphone power usage and hardware wear

Thank You