

“No, I Can’t Be a Security Personnel on Your Phone”: Security and Privacy Threats From Sharing Infrastructure in Rural Ghana

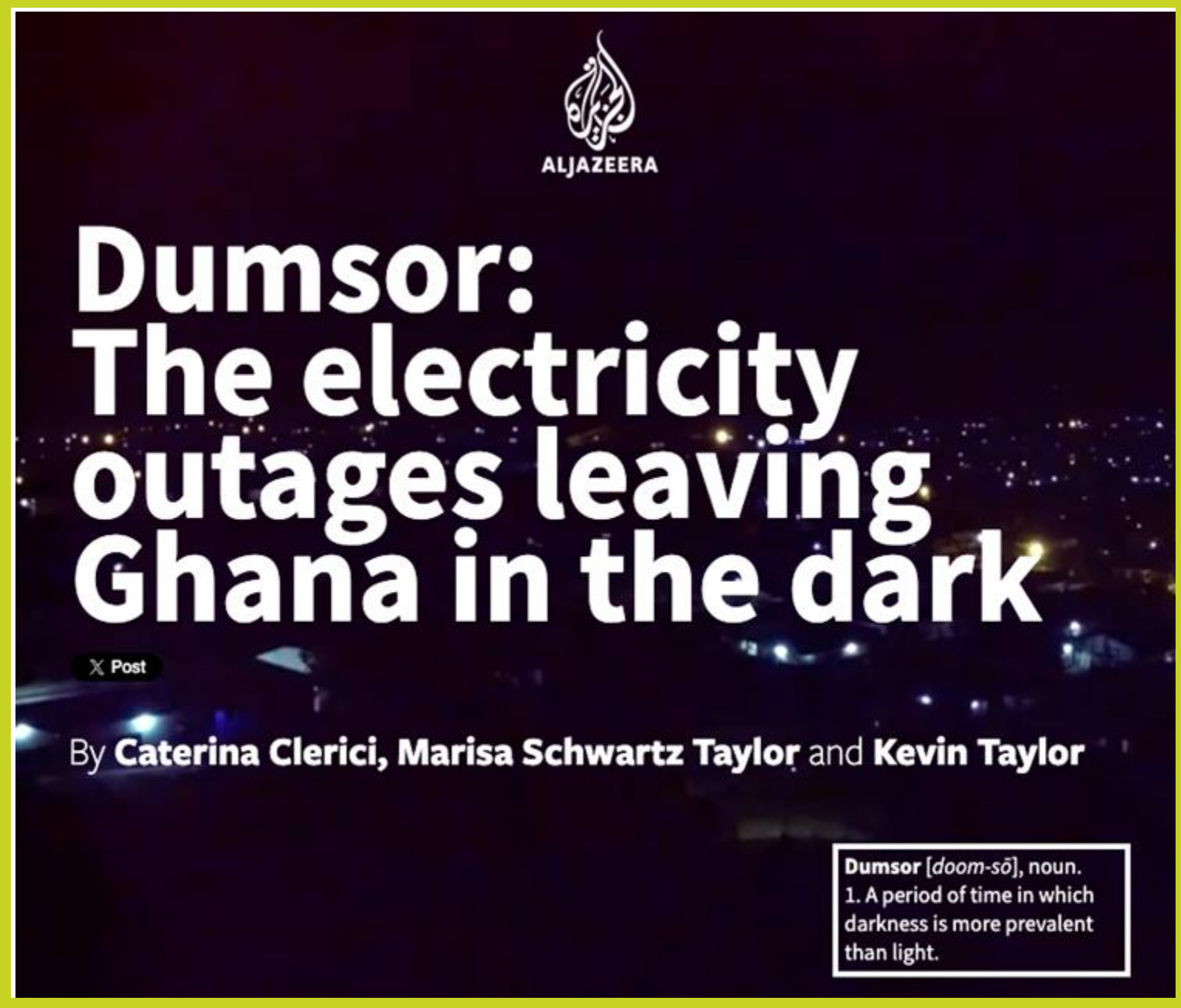
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Study Background and Motivation

- Rural communities in Ghana have limited access to electricity and mobile network coverage.
- These communities device workarounds to access electricity and network which introduce S&P risks.

Research Questions

- RQ1:** How do participants in rural Ghana access mobile networks and charge their mobile devices?
- RQ2:** What S&P challenges do they face, and what concerns do they have when adopting?
- RQ3:** What protective behaviours do they adopt to address these challenges and concerns, if any?



A media report from Al Jazeera highlighting the electricity challenges in Ghana

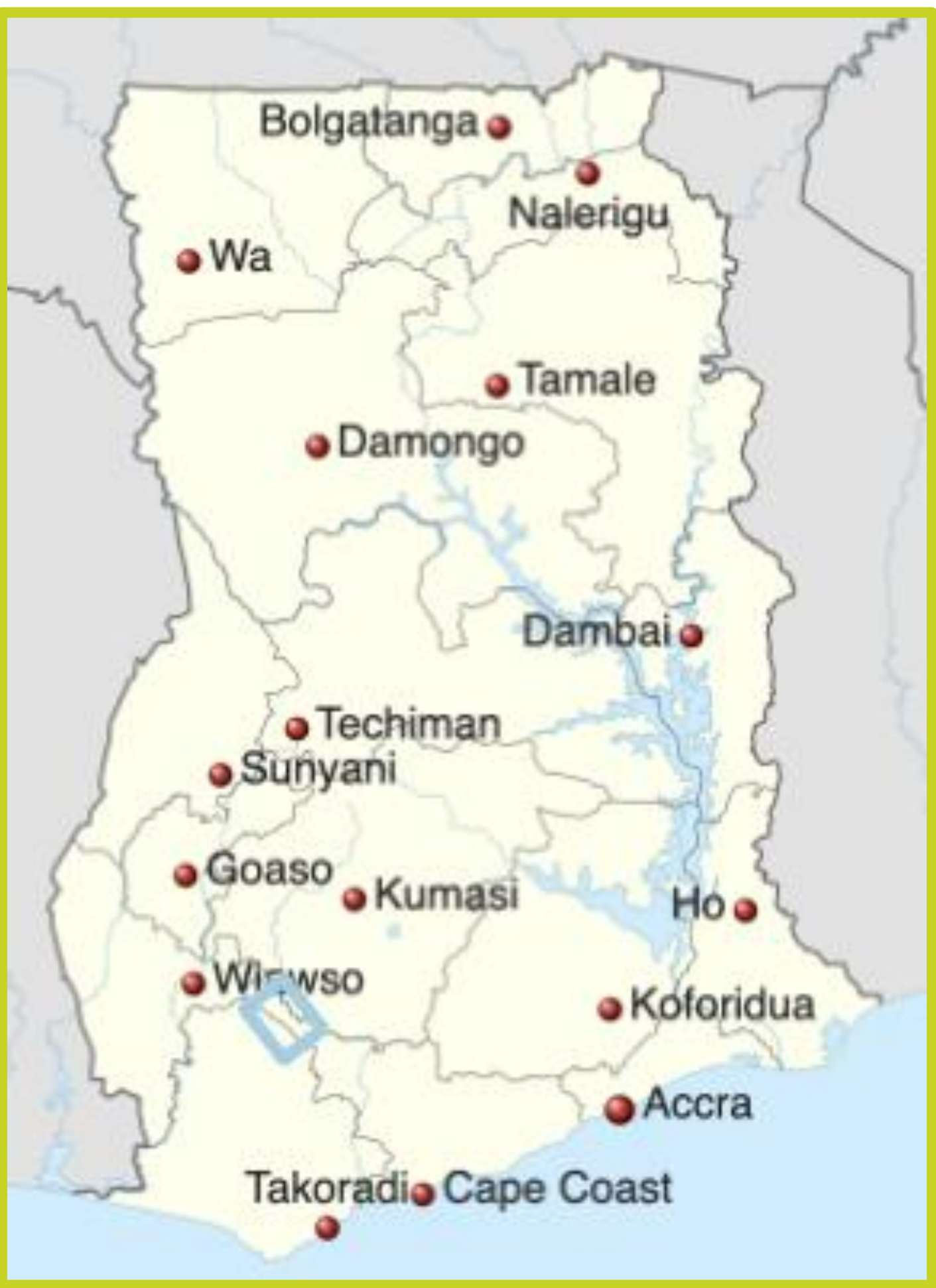


A media report from Citinews Ghana highlighting mobile network challenges in rural Ghana

Region Studied



A map of Africa highlighting Ghana



Region that we studied

Methodology



Communities
(N=5)

Semi-structured field interviews in rural communities in Ghana with electricity and mobile network challenges.



Participants
(N=41)

We recruited 31 client and 10 provider participants from the study communities.



Analysis

Translated, transcribed, analyzed transcripts via thematic analysis.

Our qualitative study approach

Results

Electricity Access



Clients

- Reliance on charging shops and friends.
- Prolonged device retention by providers.

Challenges and Concerns

- Device insecurity e.g., unauthorized access.
- Misplacement or loss of devices.

Protective Practices

- Clients:** Use power banks and screen locks, removal of SIM cards during charging.
- Providers:** Avoid collection from intermediaries, using paper to tag devices.

Network Access



Clients

- Share “network access zones”, e.g., school compounds, nearby farms.

Challenges and Concerns

- Eavesdropping and shoulder surfing.
- Physical insecurity e.g., threats of gunshots from the farm owners.

Protective Practices

- Pre-recording conversations.
- Alternating multiple languages.
- Using network zones when less crowded.

Implications



- Need for low-cost charging management protocols.
- More privacy research focusing on feature phones.
- Rural infrastructure acceleration beyond educational interventions.



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