

Using Sentinel Indicators and Network Analysis to Assess Health Program Sustainability in Nigeria

Speakers: Samson Adebayo, Emmanuel Adegbe, Siân Curtis, Jessica Fehringer, Tory Taylor, Justus Uzim

D4I Webinar Series: Localization

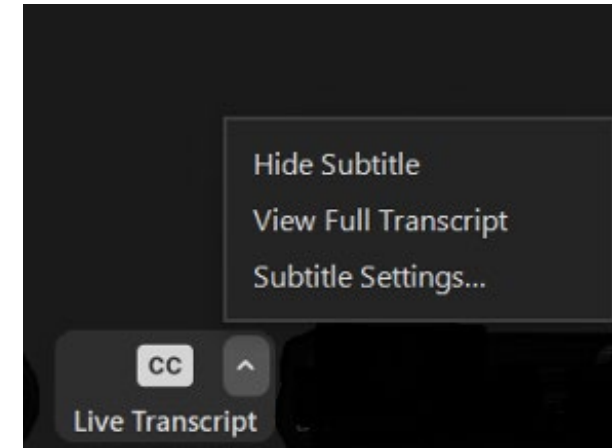
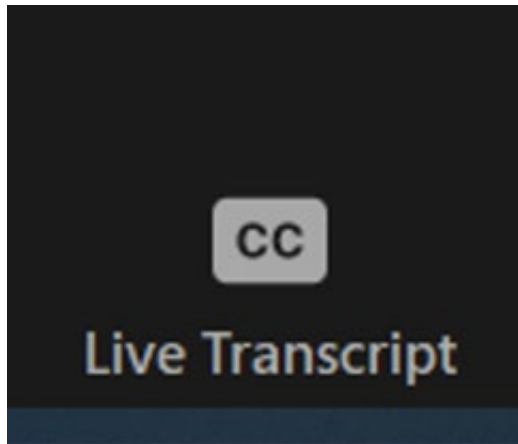
February 28, 2024





Closed Captioning

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Webinar Agenda

Section	Speaker
Welcome	Jessica Fehringer, D4I
Opening Remarks	Justus Uzim, USAID Nigeria
Sustainability Sentinel Indicators in the Nigeria HPN Multi-Activity Evaluation	Siân Curtis, D4I
A Novel Metric for Community Embeddedness using Organizational Network Data	Tory Taylor, D4I
Q&A	Emmanuel Adegbe, D4I; Samson Adebayo, DRMC



D4I's Work



Generate Evidence

Use routine and other existing data and generate new data through rigorous methods tailored to budget, timeline, and context



Integrate Gender

Integrate gender throughout the project to ensure high-quality data for assessment of health and gender outcomes



Strengthen Capacity

Strengthen capacity through fostering collaboration, experimental learning, mentoring, and peer networks tailored to partner's needs



Promote Data Use

Visualize and communicate data in ways that are compelling, user-friendly, and actionable



Ensure Data Quality

Focus on ensuring high-quality data for effective decision making and program outcome improvement



Learn

Encourage collaboration, improved results, and timely progress updates through idea exchange and shared learning





D4I's Localization Webinar Series

Join D4I over the next few months for the **Localization in monitoring, evaluation, research, and learning (MERL)** webinar series on lessons learned from the project.

Topics include:

- Local capacity strengthening
- Using a systems lens
- Engaging with diverse stakeholders
- Implementing other good practices for locally led development



Upcoming webinar in the series:



- Panel: Shifting Power and the Need to Better Understand Locally Led Capacity Strengthening Efforts
March 27, 2024, at 9am EST

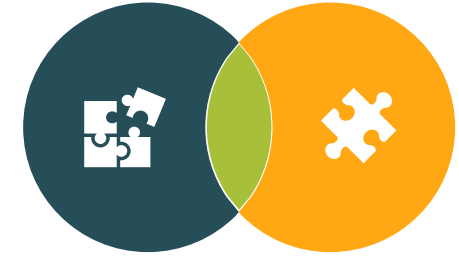
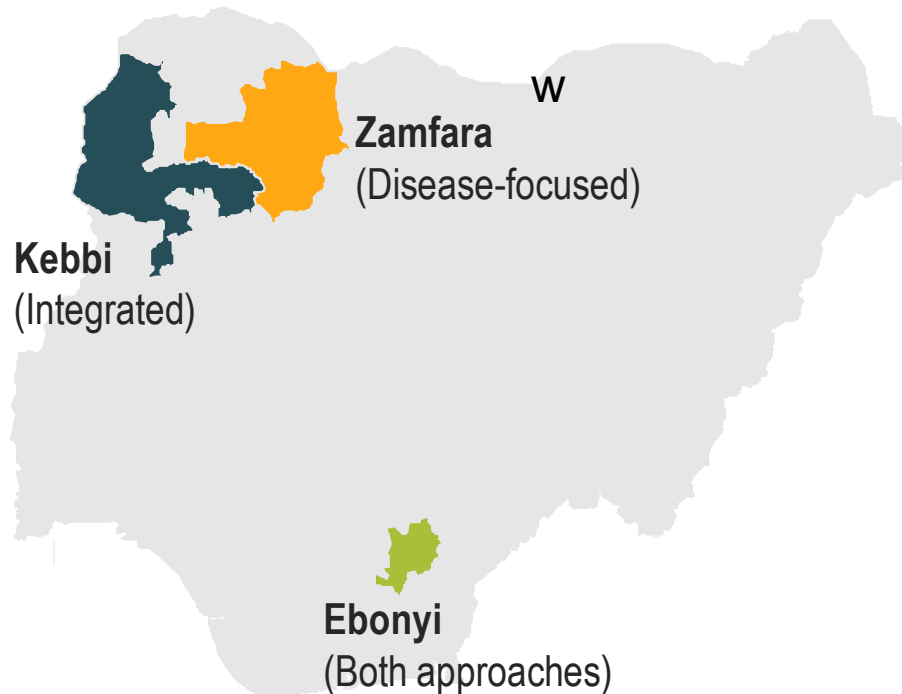


Background and Methods



Background

D4I conducted a mixed-methods portfolio evaluation of **four** USAID/Nigeria health, population, and nutrition (HPN) Activities to compare an integrated health programming approach with a disease-focused approach (i.e., malaria).

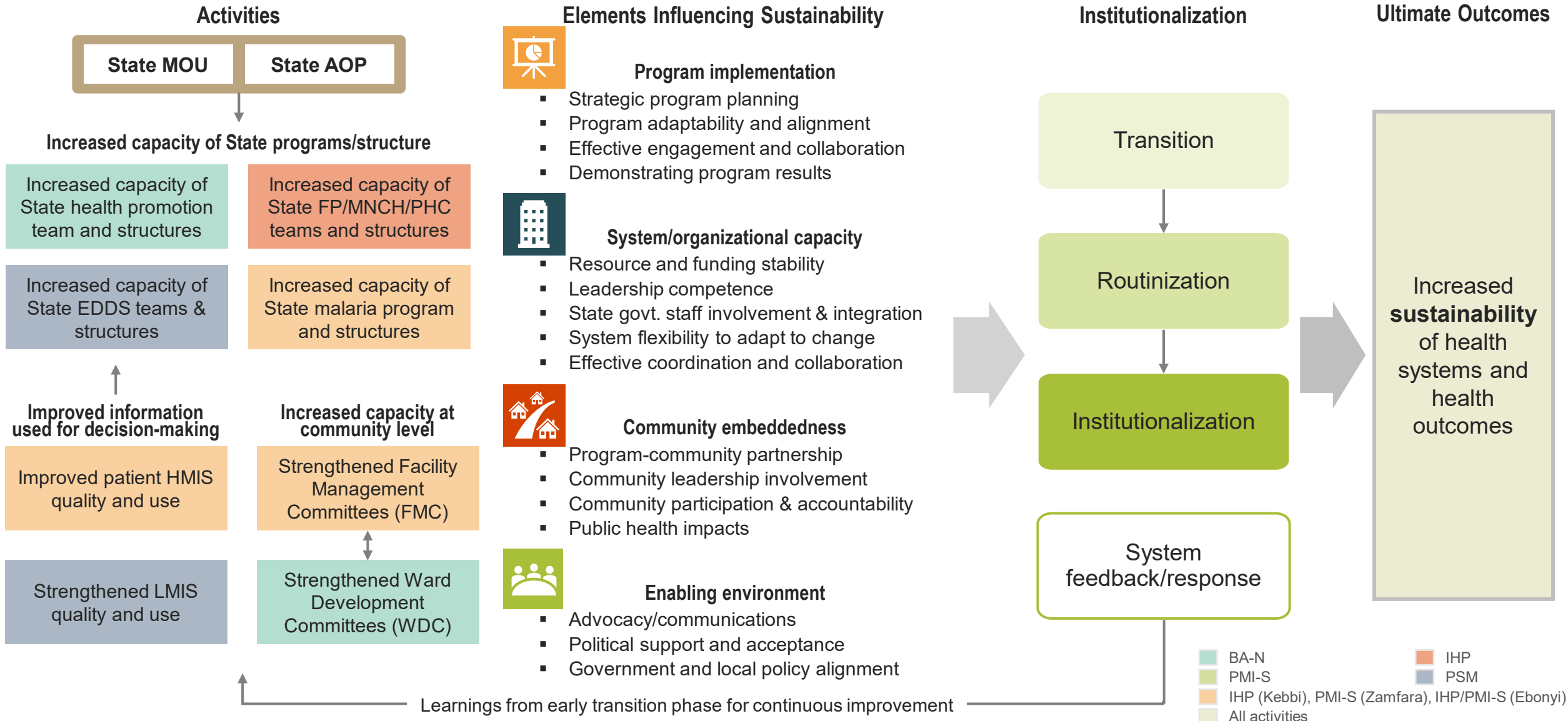


- An **integrated model** implements a coordinated set of RMNCH+N and malaria interventions as well as health system strengthening interventions.
- A **disease-focused model** addresses one health area only and, in this case, the focus is on malaria.
- **Both models** also include demand creation, and commodity procurement and distribution interventions.

Click [here](#) for more information on the evaluation design



Conceptual Framework for Sustainability Assessment





Resource and funding stability (mean scores)

The approaches exist in a supportive state economic climate.

Zamfara and Kebbi score highest

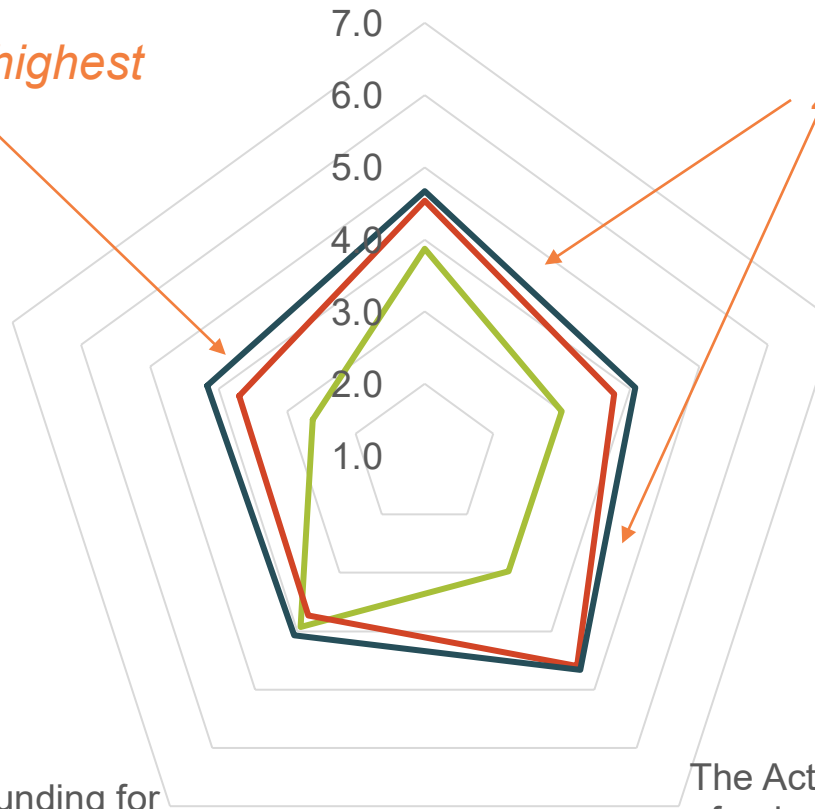
The state government has adequate staff and resources (e.g., time, space, funding) to implement the approaches.

Zamfara and Kebbi score highest

The state government implements policies to help ensure sustained funding.

There is sustained funding for the approaches

The Activity's approaches are funded through a variety of sources.

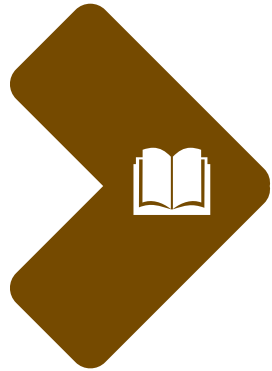


- Ebonyi
- Kebbi
- Zamfara



Selection Process for Proposed Sentinel Indicators

Sustainability measurement literature



IPs' input on potential objective sustainability indicators

Ebonyi and Kebbi MOU dashboards

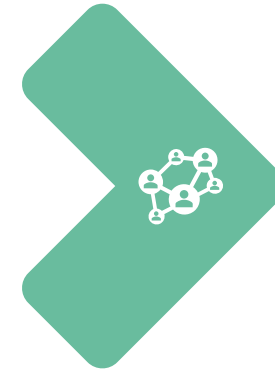


IP's monitoring, evaluation and learning plans

PEPFAR's Nigeria Sustainability Index and Dashboard



Results of D4I 2022 sustainability assessment and organizational network analysis (ONA)



“The capacity to maintain program services at a level that will provide ongoing prevention and treatment for a health problem after termination of major financial, managerial and technical assistance from an external donor.”



Sentinel Indicator Domains



Commitment/engagement

Strategic health program
planning

Health financing



Capacity

Governance and leadership

Human resources for health

Community participation and
accountability

Access to essential drugs,
diagnostics and supplies (EDDS)



Selection Criteria for Sentinel Indicators



Indicators are feasible to populate with available resources (existing data)



Data are available for all three case study states (in theory)



Indicators are relevant for comparing integrated and disease-focused programming



Manageable number of indicators representing multiple domains of commitment/engagement and capacity






Status of Sentinel Indicators

Click [here](#) for more information on the sentinel indicators in the Nigeria HPN evaluation



Strategic Health Program Planning Indicators

A finalized primary healthcare (PHC) Annual Operational Plan (AOP) exists

State	2020	2021	2022
 Ebonyi Harmonized AOP includes malaria and PHC AOP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 Kebbi PHC AOP is integrated into LGA AOP; and Malaria AOP is integrated into harmonized AOP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 Zamfara Includes separate malaria and PHC AOP	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

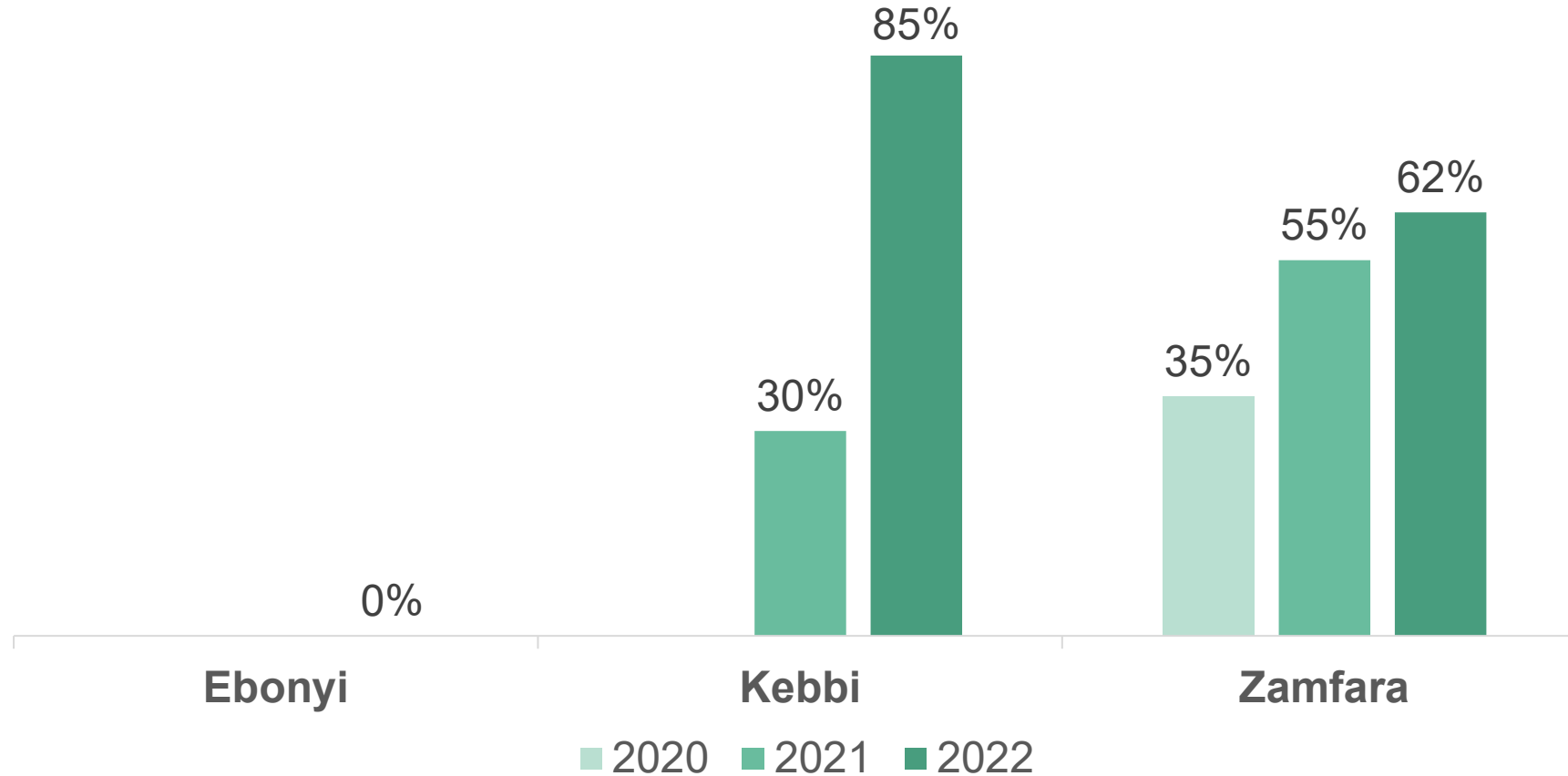
Reported to exist

Have in hand



Health Financing Indicators

Percentage of PHC allocated funding released as a proportion of the amount budgeted for PHC at the state level



Sources:

Ebonyi: www.ebonyistate.gov.ng

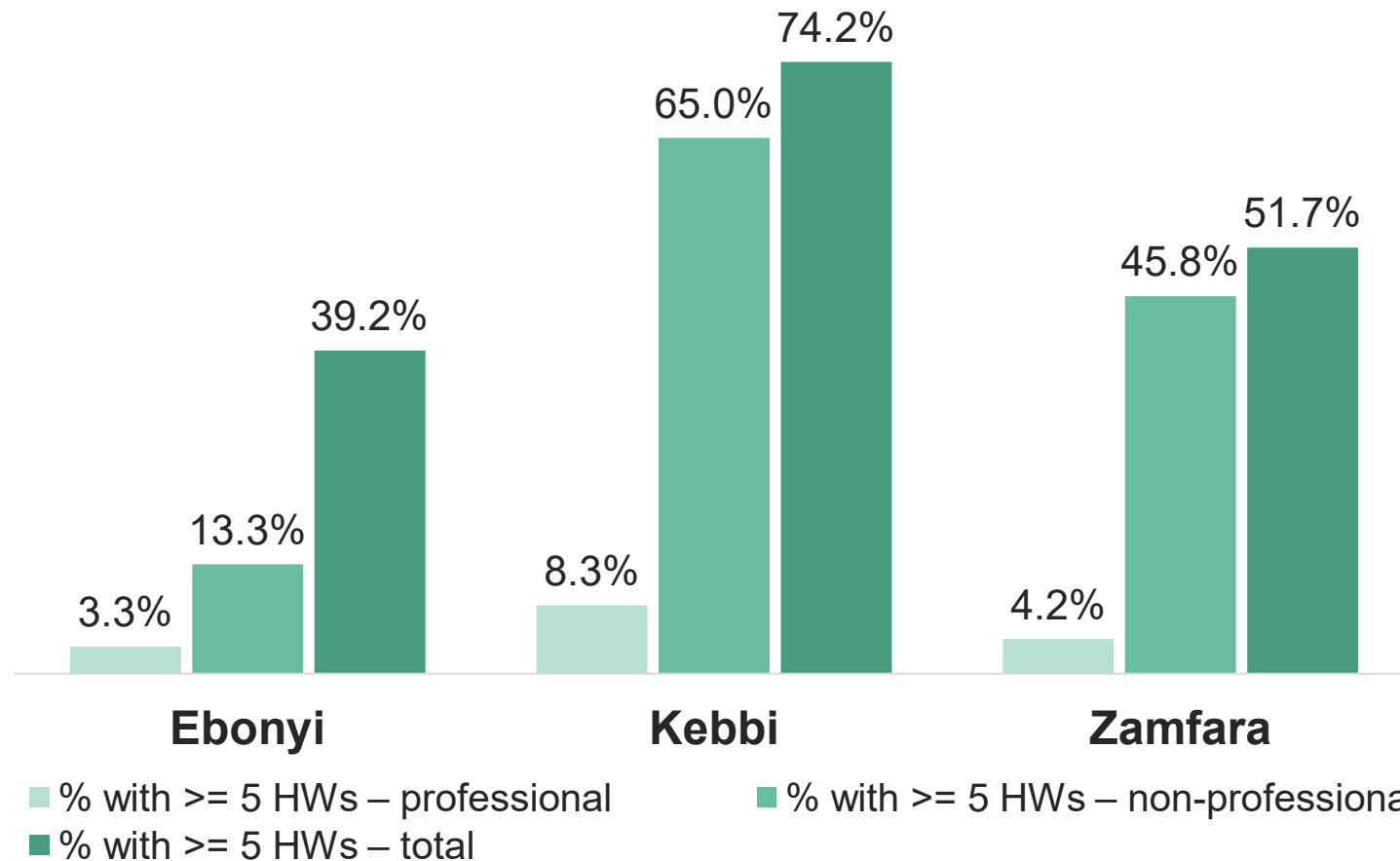
Kebbi: www.kebbistate.gov.ng

Zamfara: PMI-S



Human Resources for Health Indicators

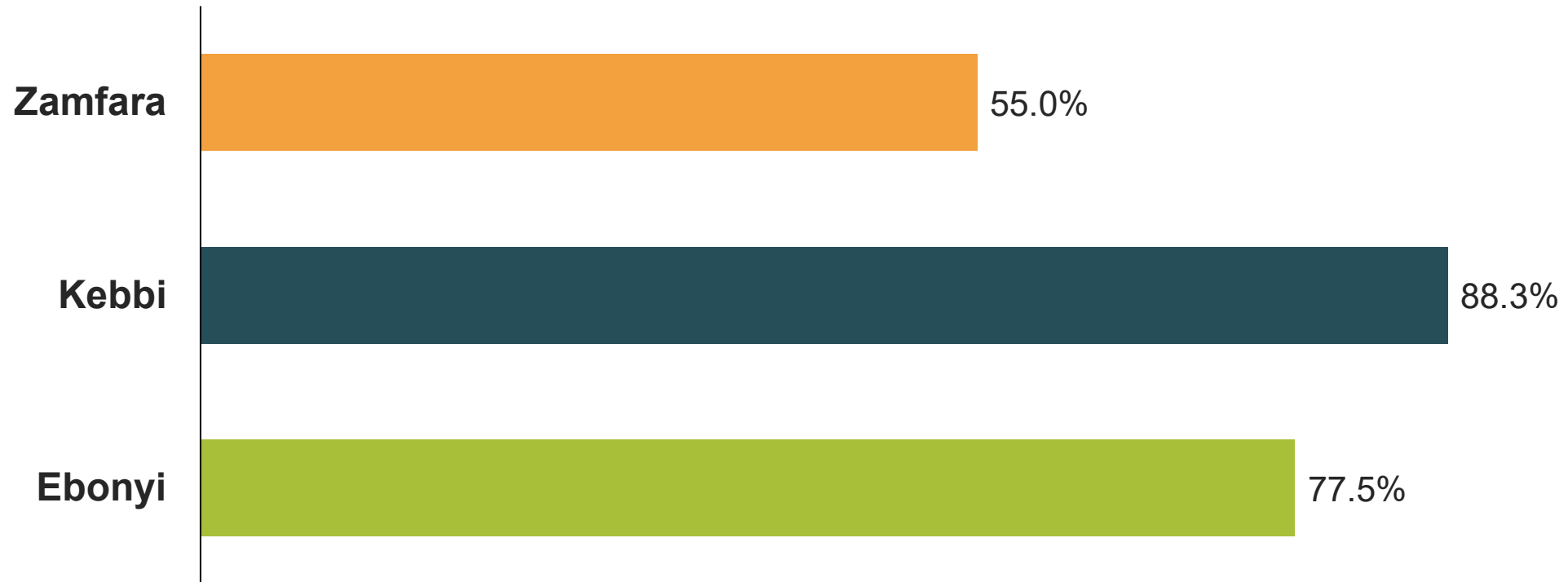
Percentage of PHCs that have at least five healthcare workers (HWs) (assigned and employed) per Basic Health Care Provision Fund requirement levels, 2021





Governance and Leadership Indicators

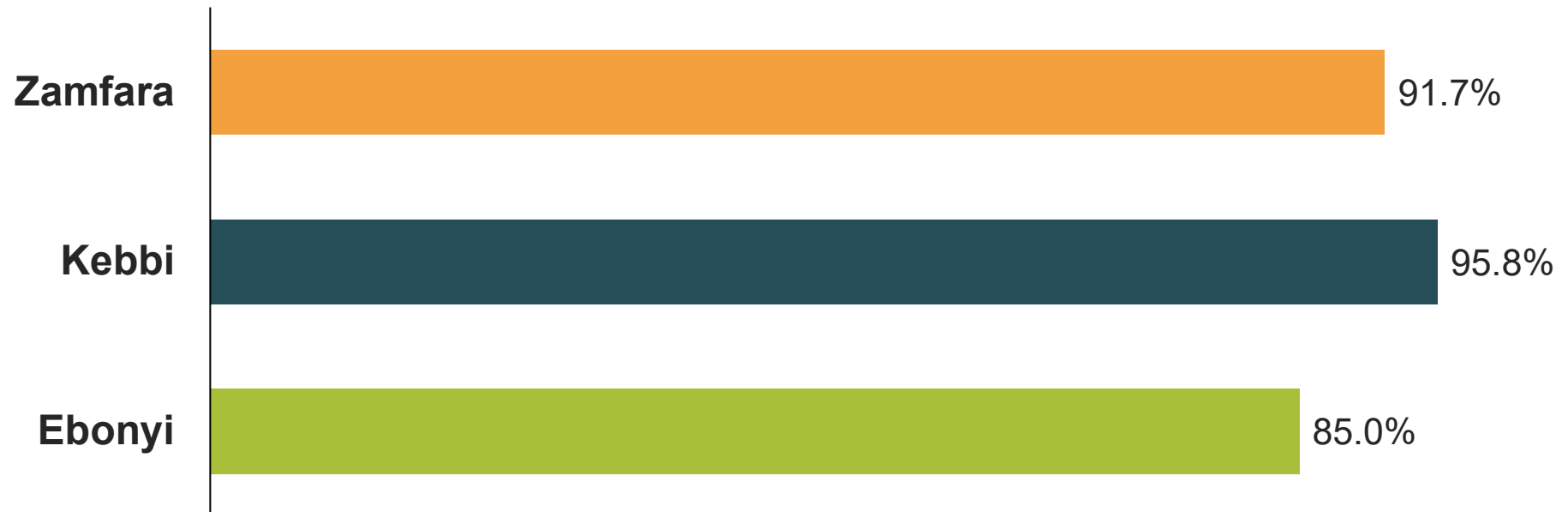
Percentage of PHCs that offer FP, ANC, intermittent preventative treatment of malaria in pregnancy (IPTp), tetanus toxoid (TT) immunization, and case management for simple, uncomplicated malaria, 2021





Community Participation and Accountability Indicators

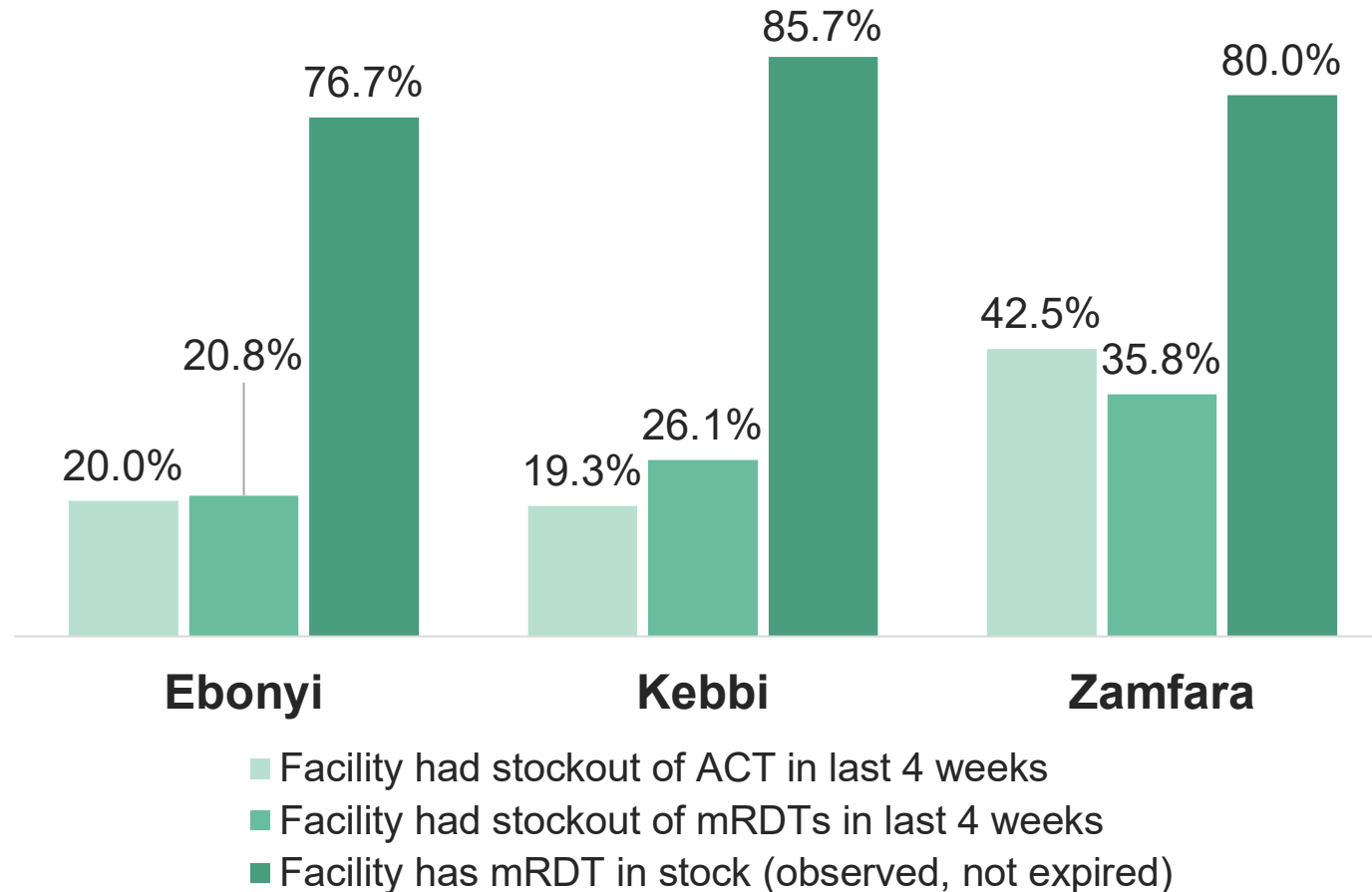
Percentage of PHCs that reported having a routine system for eliciting community input into facility management decisions, 2021





Access to Essential Drugs, Diagnostics, and Supplies Indicators

Percentage of facilities with malaria rapid diagnostic tests (mRDTs) with stockout of mRDTs and Artemisinin-based combination treatment (ACT) in the last 4 weeks, 2021

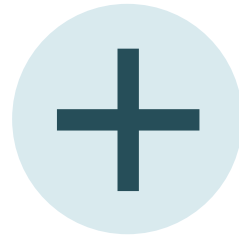




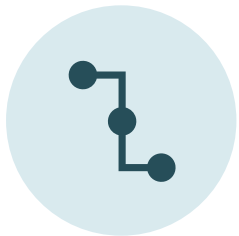
What did we learn overall?



Consistent differences in sentinel indicator values were not apparent based on the program approach, but Kebbi (integrated) did best overall.



Contextual factors like political economy, state priorities, and other programming are likely influential.



We saw more variability between states and domains in the sentinel indicators than in the self-reported Likert scale values in the 2022 assessment



Sustainability monitoring should continue to use complexity-aware methods like sentinel indicators.

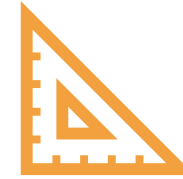


How did we **define** and **measure** community embeddedness?



The framework largely defined community embeddedness in terms of engagement:

- Partnerships between the program and community
- Involvement of community leaders and local champions
- Community participation, accountability and ownership



We initially chose sentinel indicators that use facility assessment and routine data:

- Percent of program-assisted wards with functional Ward Development Committees
- Percent of primary health centers with systems for community input into facility management decisions

Why use the network data too?



“Development is capacity. Capacity is local. Local is place-based and **relational**.”¹

“...[measuring dimensions of **system strength**] is essential... to ensure [interventions] are advancing sustainability.”²

“...sustaining any development outcome depends on the contributions of multiple and **interconnected actors**.”³

“...[our work] must be grounded in an analysis of the local system, the actors in [it], and their existing **relationships**.”³

“[sustainability] requires strengthening system performance by...deepening **interrelationships** among local actors.”⁴

“Network analysis may be an appropriate measurement approach when...goals center on building **relationships**...”⁵

¹. [‘Shift Power’ to Local Actors? A Collective Action Approach Lets Stakeholders...Lead | USAID Learning Lab](#)

². [Local Systems: A Framework for Supporting Sustained Development \(usaid.gov\)](#)

³. [Local Capacity Strengthening Policy \(usaid.gov\)](#)

⁴. [Localization at USAID: The Vision and Approach \(usaid.gov\)](#)

⁵. [CBLD-9 Measurement Guide \(usaid.gov\)](#)



Which network measures did we consider?



Betweenness centrality of
community organizations



Percentage of
organizations that are
community organizations



Reciprocity in
relationships involving
community organizations



Strength of relationships
with community
organizations



Connectivity between
community and
government organizations



Extent to which
community organizations
are distributed vs. siloed

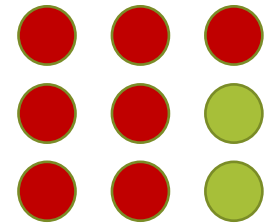
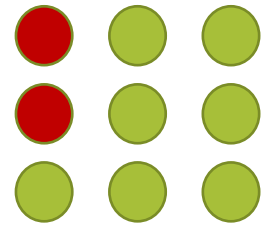



Comparing Two Potential Approaches

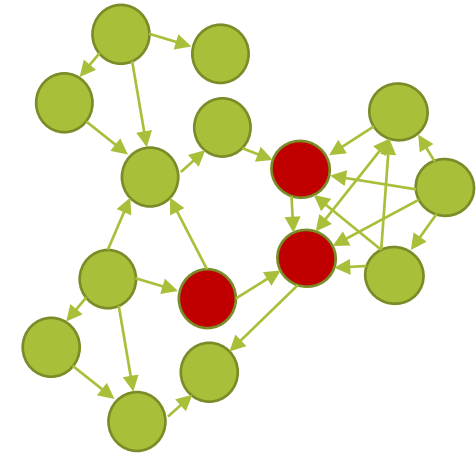
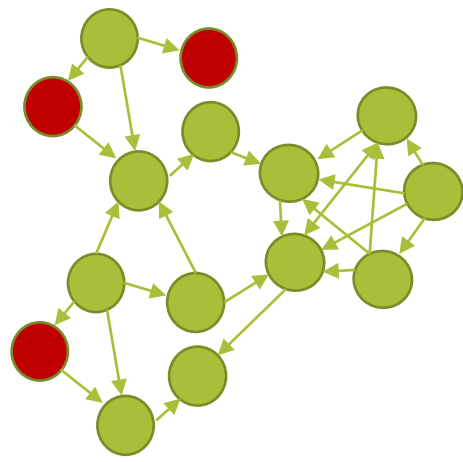
Low **community** embeddedness

High **community** embeddedness


Percentage of organizations that are community organizations
(population-focused)




Betweenness centrality of community organizations
(structure-focused)

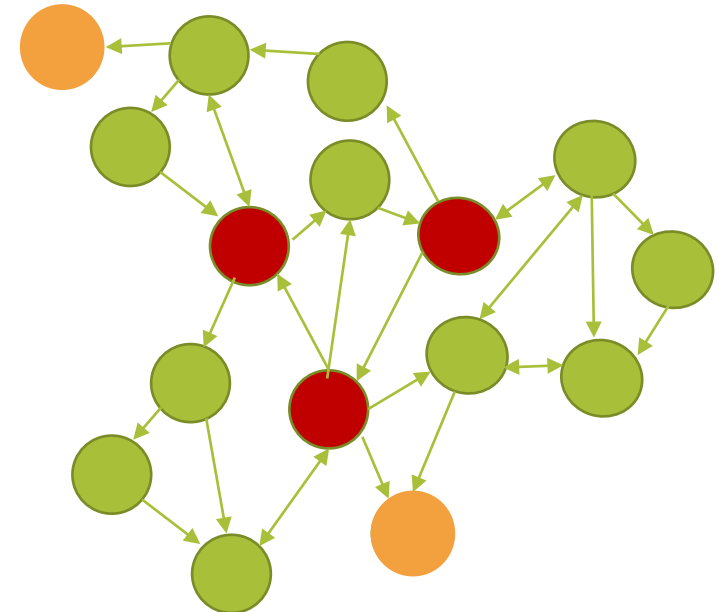




We decided to focus on **betweenness centrality**.

- Betweenness Centrality, or BC, measures an organization's **importance as a broker** (of resources, information, etc.) in a network.
- We generated a measure called relative BC (RBC): community organizations' mean BC is higher than the BCs of this percentage of non-community organizations.
- A network where community organizations are more highly central (RBC is higher) may be more sustainable.
- We used a definition of "community" that includes sub-national government organizations, adapted from USAID's definition of "local actor" and aligned with the Roadmap* for Localizing the SDGs.

The red organizations have high BC.
Can you guess which organizations have the lowest BC (0)?

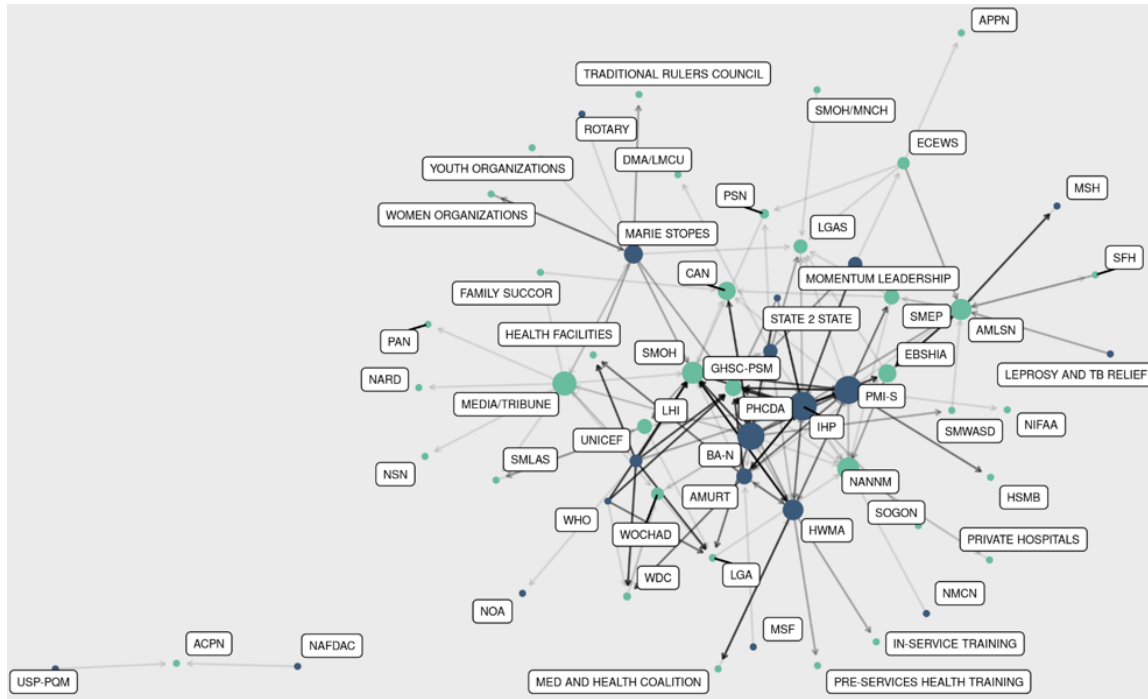


*See sustainabledevelopment.un.org for more info.

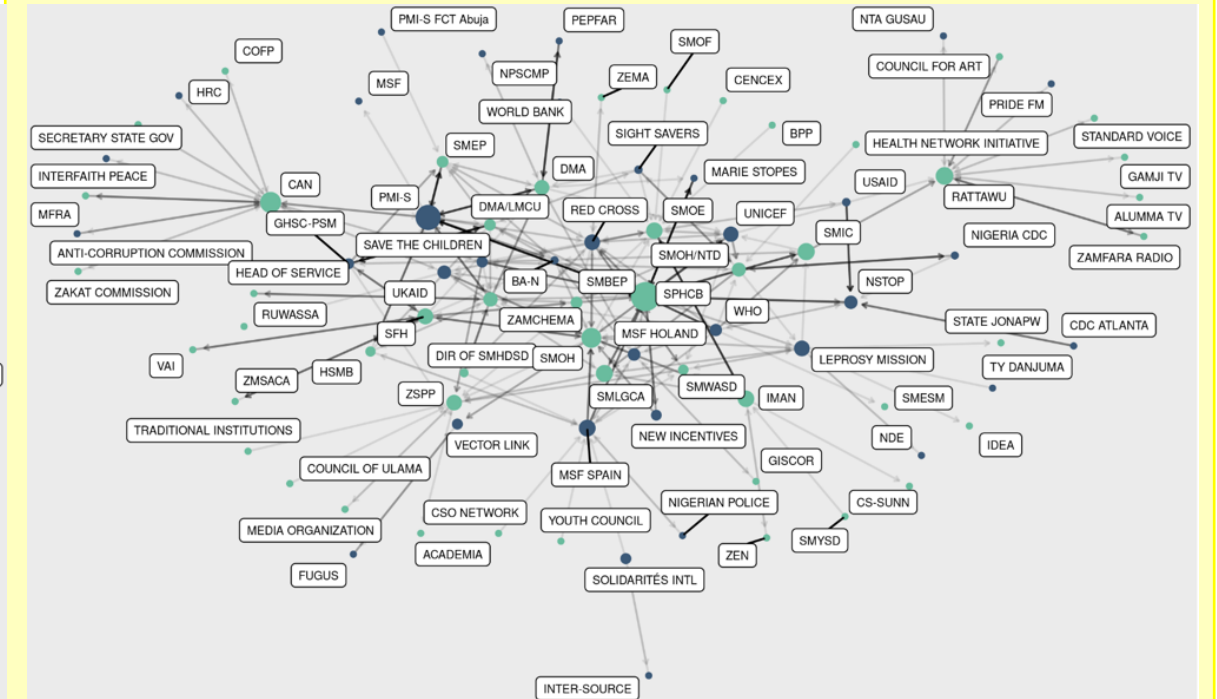


Where are community organizations more central?

Ebonyi (70% RBC)




Zamfara (84% RBC)



Resource exchange networks

 Community organization

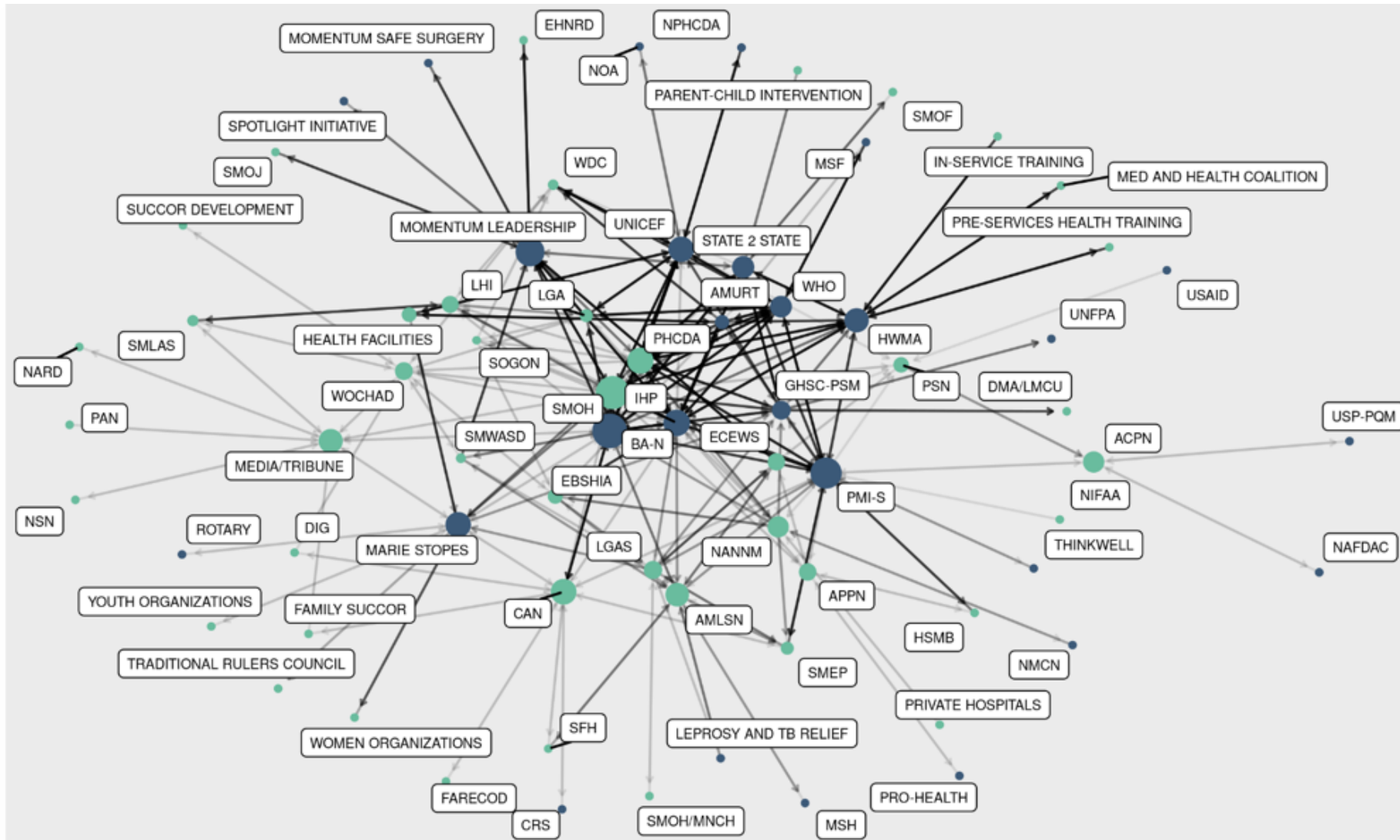
 Non-community organization

Larger circles indicate higher BC.

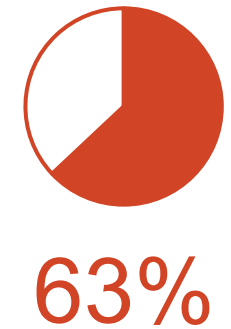


Results

Information Sharing in Ebonyi

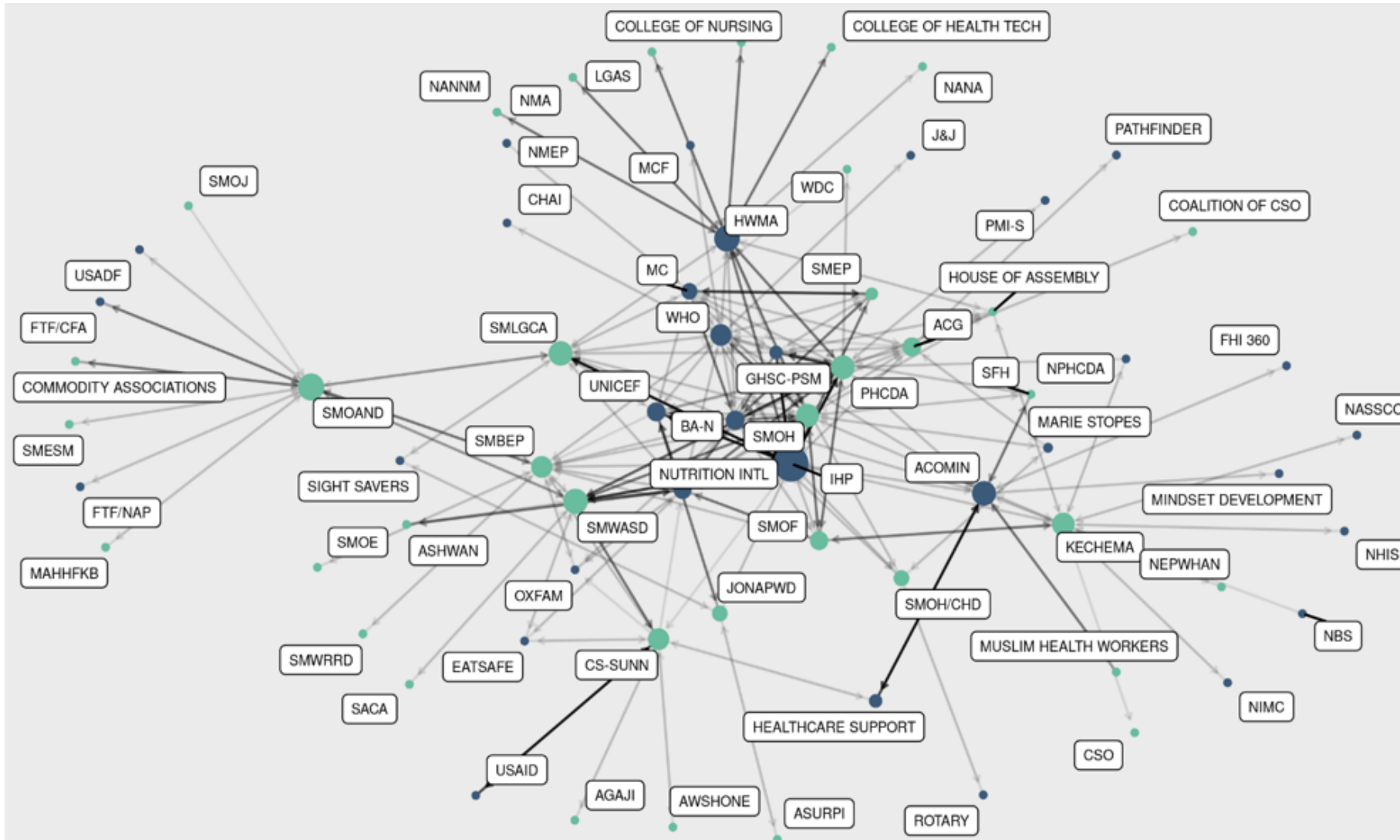


The relative betweenness centrality (RBC) of community organizations in this network is:

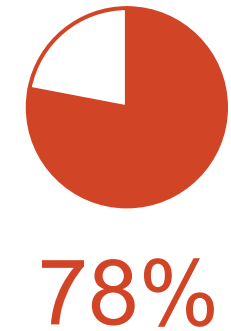


Legend:
● Community organization
● Non-community organization
Larger circles indicate higher BC.

Information Sharing in Kebbi

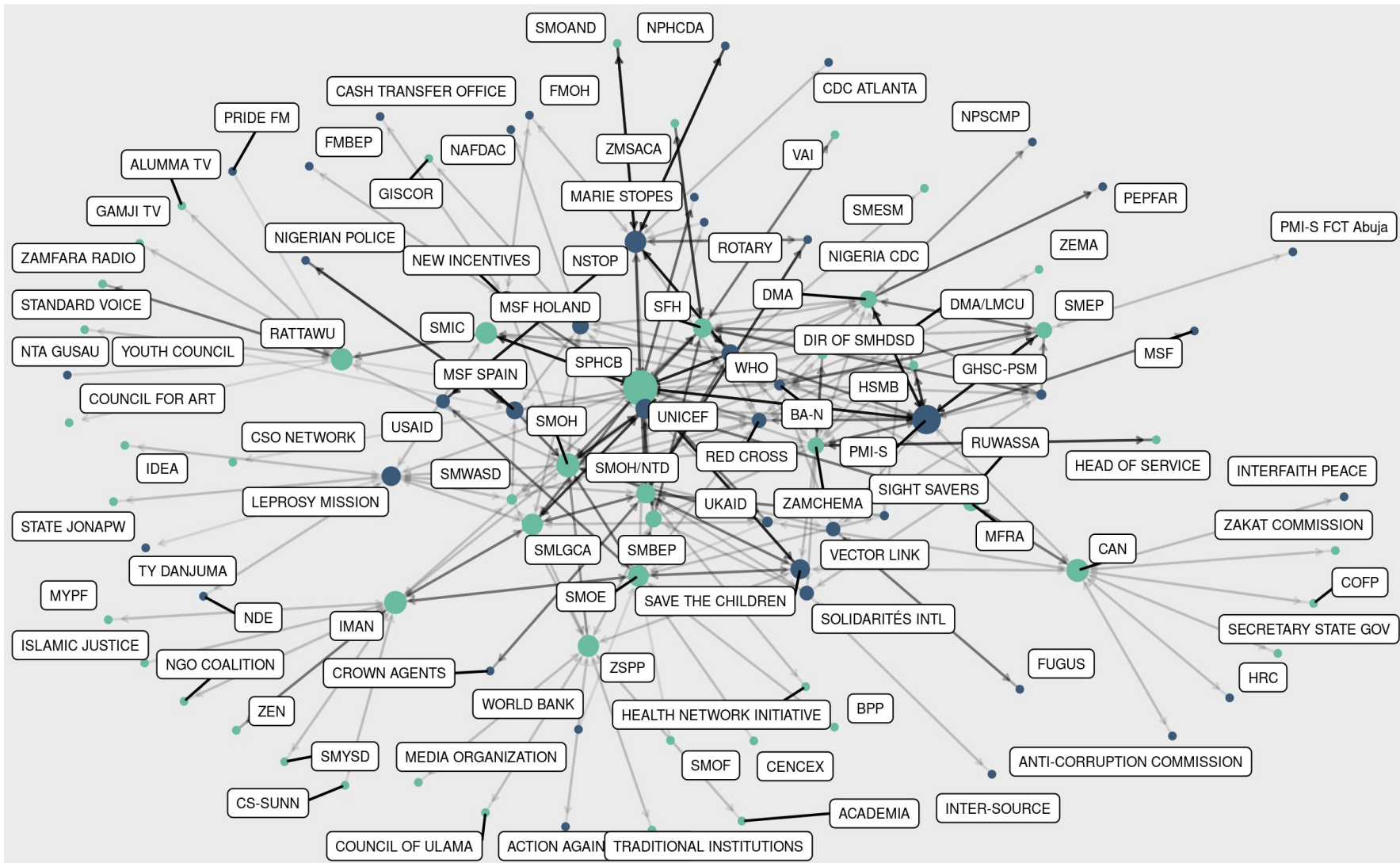


The relative betweenness centrality (RBC) of community organizations in this network is:

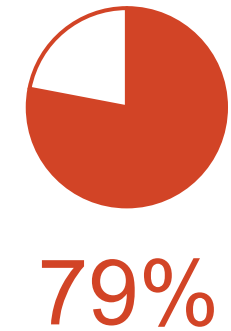


Legend:
● Community organization
● Non-community organization
Larger circles indicate higher BC.

Information Sharing in Zamfara

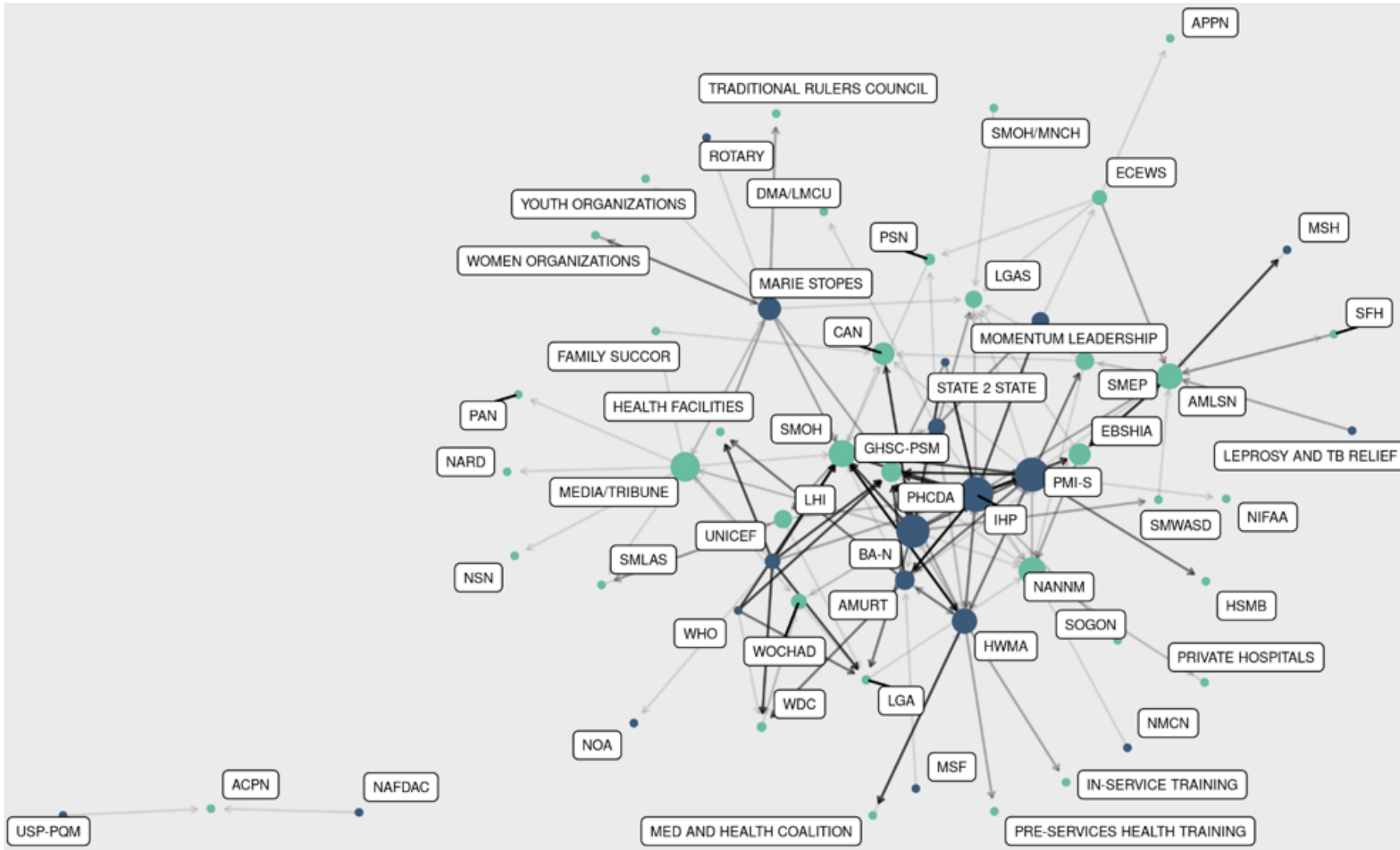


The relative betweenness centrality (RBC) of community organizations in this network is:

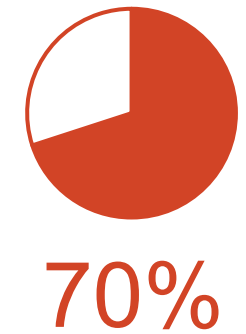


Legend:
● Community organization
● Non-community organization
Larger circles indicate higher BC.

Resource Sharing in Ebonyi



The relative betweenness centrality (RBC) of community organizations in this network is:

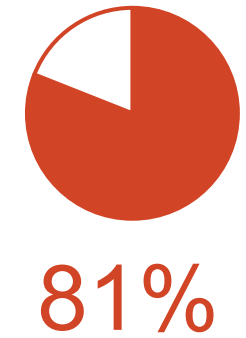


Legend:

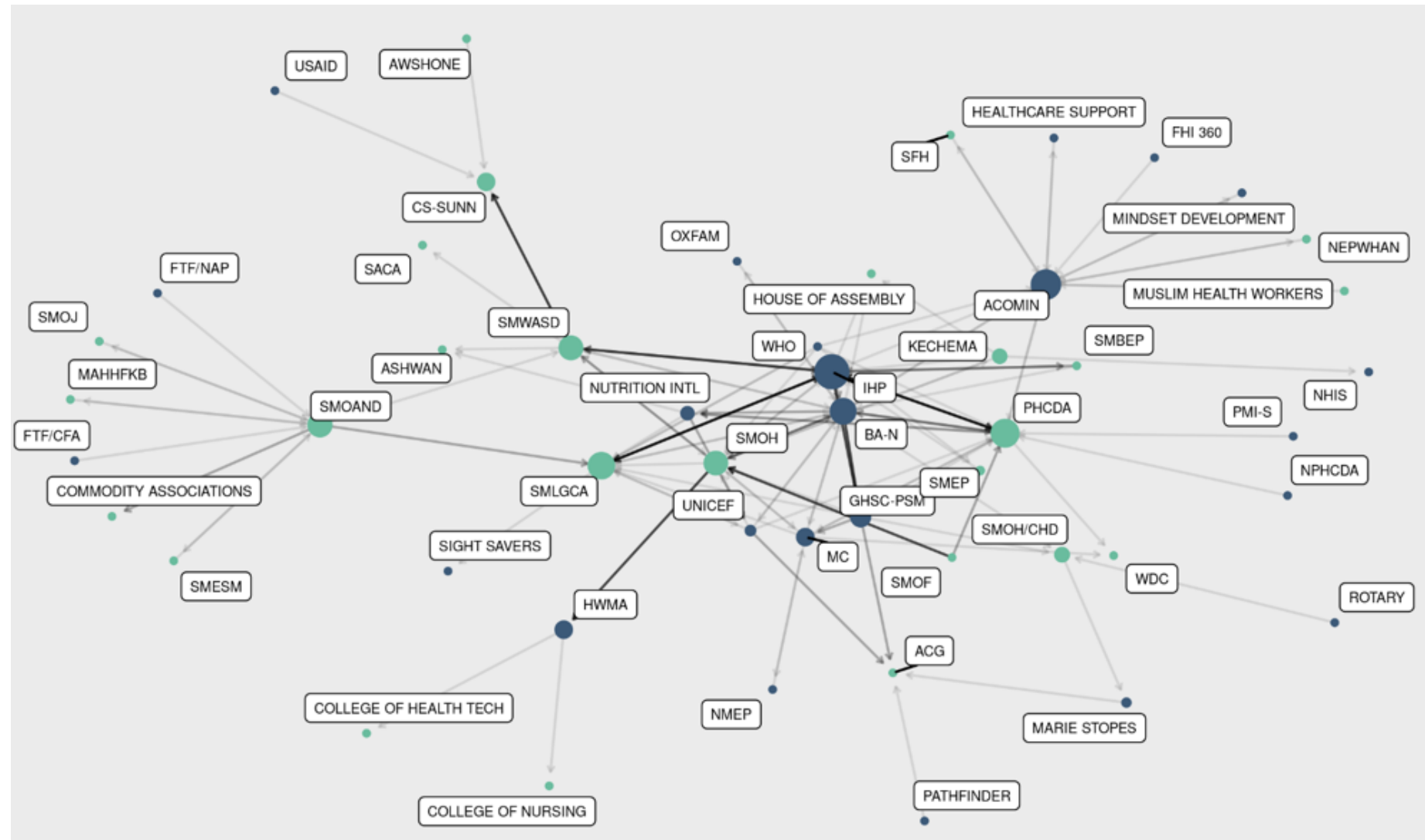
- Community organization
- Non-community organization
- Larger circles indicate higher BC.

Resource Sharing in Kebbi

The relative betweenness centrality (RBC) of community organizations in this network is:

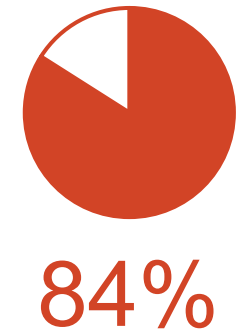


Legend:
● Community organization
● Non-community organization
Larger circles indicate higher BC.

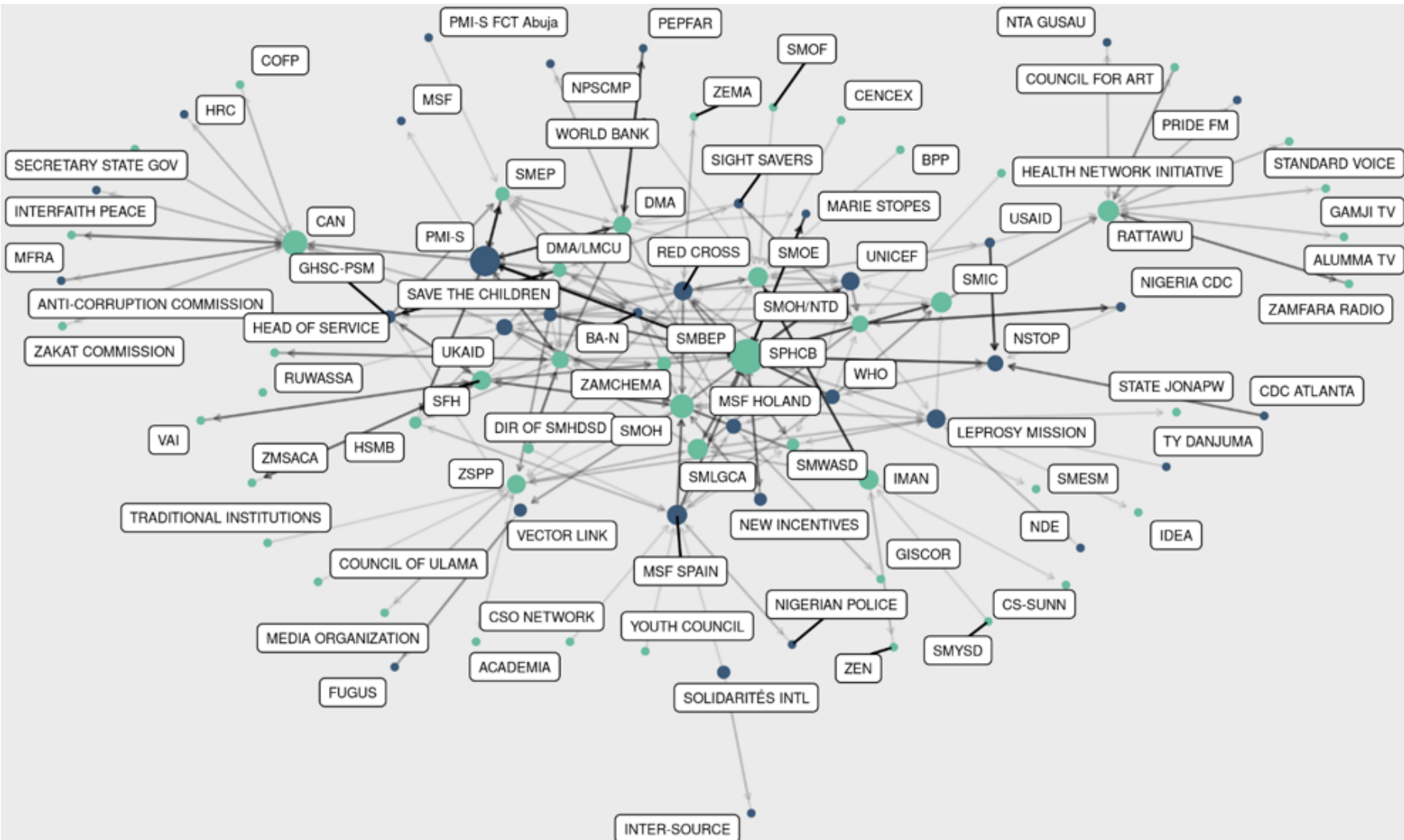


Resource Sharing in Zamfara

The relative betweenness centrality (RBC) of community organizations in this network is:



Legend:
● Community organization
● Non-community organization
Larger circles indicate higher BC.

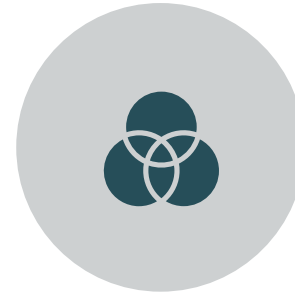




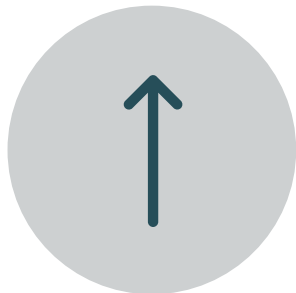
What did we learn?



The mean BC of community organizations is higher than the BC of most non-community organizations in HPN Activity networks (63%-84%).



Community organizations' RBC is lowest in Ebonyi. With sub-national government classified as non-community (not shown), states' results are more similar.



Community organizations' RBC is higher for resource sharing than for information sharing in states' HPN Activity networks.



Expanding the use of RBC and other metrics related to roles and relationships could help assess and guide localization efforts in many settings.



Thank you to the team!

- The Nigeria Multi-Program Evaluation was led by Siân Curtis with Jessica Fehringer, Emmanuel Adegbe, Patrick Iyiwose, Kristen Brugh, Milissa Markiewicz, Huyen Vu, Ajiga Saleh, Tory Taylor, and Allysha Choudhury. Mission support was provided by Justus Uzim, Titus Ojewumi, and others.
- D4I partnered with Data Research and Mapping Consult (DRMC) Ltd. in Abuja; a group that included Samson Adebayo, Osifo Telison, Fasiku Adekunle, and others; for evaluation data collection, analysis, and results dissemination.
- The network analysis was performed by US-based consultant Devin Cornell; analysis decisions were made in consultation with team members in Nigeria and the US. Network findings have been disseminated through national and state-level workshops, conferences, and reports published on D4I's website.



Q&A





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www.data4impactproject.org

