

# The State of African Resilience

*Understanding Dimensions of Vulnerability and Adaptation*

EDITOR

Jennifer G. Cooke

*A Report from the ResilientAfrica Network (RAN)*

March 2015





# The State of African Resilience

*Understanding Dimensions of Vulnerability and Adaptation*

EDITOR

Jennifer G. Cooke

March 2015

*A Report from the ResilientAfrica Network (RAN)*



CSIS | CENTER FOR STRATEGIC & INTERNATIONAL STUDIES

U.S. GLOBAL DEVELOPMENT LAB  
Powered by USAID

USAID Higher Education Solutions Network

ROWMAN & LITTLEFIELD

Lanham • Boulder • New York • London

## ABOUT CSIS

For over 50 years, the Center for Strategic and International Studies (CSIS) has worked to develop solutions to the world's greatest policy challenges. Today, CSIS scholars are providing strategic insights and bipartisan policy solutions to help decisionmakers chart a course toward a better world.

CSIS is a nonprofit organization headquartered in Washington, D.C. The Center's 220 full-time staff and large network of affiliated scholars conduct research and analysis and develop policy initiatives that look into the future and anticipate change.

Founded at the height of the Cold War by David M. Abshire and Admiral Arleigh Burke, CSIS was dedicated to finding ways to sustain American prominence and prosperity as a force for good in the world. Since 1962, CSIS has become one of the world's preeminent international institutions focused on defense and security; regional stability; and transnational challenges ranging from energy and climate to global health and economic integration.

Former U.S. senator Sam Nunn has chaired the CSIS Board of Trustees since 1999. Former deputy secretary of defense John J. Hamre became the Center's president and chief executive officer in 2000.

CSIS does not take specific policy positions; accordingly, all views expressed herein should be understood to be solely those of the author(s).

© 2015 by the Center for Strategic and International Studies. All rights reserved.

ISBN: 978-1-4422-4082-7 (pb); 978-1-4422-4083-4 (eBook)

# Table of Contents

<b>Acknowledgments</b>	<b>iv</b>
<b>Introduction</b>	<b>1</b>
<b>1: Building a Network of Resilience Scholars and Innovators</b> <i>Evolution of the ResilientAfrica Network</i>	<b>4</b>
<b>2: The RAN Resilience Framework</b> <i>Developing a Tool to Analyze Community Resilience in Africa</i>	<b>13</b>
<b>3: Deliberative Polling®</b> <i>Deepening Understanding of Community Insights and Priorities</i>	<b>20</b>
<b>4: Tracing Pathways of Resilience</b> <i>Identifying Dimensions of Resilience and Exploring the Linkages among Them</i>	<b>25</b>
<b>5: RILab Preliminary Findings</b> <i>Context-Specific Resilience Frameworks and Opportunities for Resilience Innovation</i>	<b>35</b>
<b>6: Identifying Pathways for Innovation and Intervention</b>	<b>59</b>

# Acknowledgments

Jennifer Cooke, director of the CSIS Africa Program, edited this report with technical guidance from Tulane University's Disaster Resilience Leadership Academy (DRLA), which is based on the contributions of ResilientAfrica Network (RAN) Secretariat and partners through interviews, data and analysis, and feedback on successive drafts.

The RAN management team is composed of: Prof. William Bazeyo, dean of the Makerere University School of Public Health, chief of party for the RAN, and HESN Development Lab director; Prof. Ky Luu, executive director of Tulane University's Disaster Resilience Leadership Academy (DRLA) and RAN co-chief of party; and Dr. James Fishkin, professor of international communication and director of the Center for Deliberative Democracy at Stanford University. The RAN Secretariat includes: Dr. Roy William Mayega, deputy chief of party; Prof. David Serwadda, professor at the Makerere University School of Public Health and technical advisor to the RAN, Nathan Tumuhamy Kipande, research officer; Dr. Wanjiku Nganga, director of innovations; Peter Horjus, senior research associate for DRLA, Deborah Naatujuna Nkwanga, engagement manager; Grace Mongo Bua, community liason officer; Boyd Mishiga, M-KITS developer; Harriet Adong, communications manager; Deborah Namirembe, program administrator; Harriet Namata, monitoring and evaluation manager; Herbert Ampeire, accountant; and Irene Ssebuwufu, administrative assistant.

The research and analysis on which this report is based were provided by the regional Resilience Innovation Labs (RILabs) and their partner universities. Leading the RILabs are: Dr. Lekan Ayo-Yusuf, director of the Southern Africa RILab, professor at the University of Pretoria, and dean of the University of Limpopo's Medical University of Southern Africa; Dr. Dorothy Okello, director of the Eastern Africa RILab and senior lecturer at Makerere University; Dennis Chirawurah, director of the West Africa RILab and lecturer in the School of Medicine at the University for Development Studies; and Dr. Kifle Woldemichael, director of the Horn of Africa RILab and professor of epidemiology at Jimma University.

Important contributions were also provided by: Deborah Elzie, director of resilience; Dr. Apollo Nkwake, DRLA associate professor; Ariane Wiltse, DRLA program manager; Ticora Jones, HESN division chief for USAID's Global Development Lab; Tara Hill, senior program manager for HESN and AOR for the RAN; Maggie Linak, science and technology policy fellow for HESN and activity manager for the RAN; and Ben Hubner, program coordinator of the CSIS Africa Program.

# Introduction

**D**URING THE LAST DECADE, sub-Saharan Africa enjoyed unprecedented rates of economic growth, with new technologies, better governance, and increasing investment flows creating new opportunities for innovation and economic and human development. Yet across the continent, vulnerable populations continue to contend with recurrent crises and stresses that leave them struggling to recover and unable to expand economic opportunities or to improve well-being. Recurrent shocks and stresses—caused by conflict, climate variability, disease, and natural disasters—too often overwhelm traditional coping mechanisms and create a corrosive cycle of fragility and risk.

Vulnerable populations are not confined to one region, and there is significant variability in the nature and impact of stresses they face. Small-scale farmers in East Africa, for example, grapple with recurrent drought in some areas and floods in others. Populations in the Great Lakes region struggle with chronic displacement from conflict and insecurity. Residents of West Africa's densely populated urban settlements face environmental health hazards and displacement due to overcrowding, poor sanitation, and flooding, while regions further north grapple with food insecurity and desertification. In Southern Africa, the HIV/AIDS pan-

demic adds a layer of hardship on already poor and food-insecure households. And in the semiarid regions of the Sahel and the Horn of Africa, recurrent conflict and drought undermine the livelihoods of farmers and pastoralists alike, resulting in cyclical spikes in malnutrition and food insecurity.

Generally, the international donor community is quick to respond to crises and disasters, providing humanitarian assistance that saves countless lives and helps communities recover. But over time, the need for repeated emergency operations in chronically vulnerable communities and regions has led to a stronger and more strategic focus on the concept of resilience—helping communities to recover but at the same time strengthening their capacity to mitigate and withstand future shocks and increase their security and well-being. By integrating resilience mechanisms into relief and development efforts, humanitarian and development practitioners seek to break the cycle of vulnerability and find locally driven solutions to better ensure more sustainable and effective impacts.

The ResilientAfrica Network (RAN) brings together a new set of actors and tools to address the challenge of chronic vulnerability through African-inspired interventions. The network leverages the knowledge, scholarship, and creativity of African universities to identify and develop innovative ways to strengthen resilience in target communities across Africa. The network is led by Makerere University, which hosts the RAN Secretariat, and includes Tulane University, Stanford



*The ResilientAfrica Network offers an exciting opportunity to tap into the capacities of African universities and focus their collective energies on delivering practical, real-time, and enduring solutions to the continent's most vulnerable communities.*

**—Professor William Bazeyo**

*Chief of party, associate professor, and dean, School of Public Health Makerere University, Kampala, Uganda*

University, and the Center for Strategic and International Studies. Fifteen African universities participate in the network, currently engaged in 18 communities across Africa. Using a common resilience assessment framework, derived from a model developed by Tulane University's Disaster Resilience Leadership Academy (Tulane/DRLA), and an innovative polling technique (Deliberative Polling®) developed by Stanford University's Center for Deliberative Democracy, the Resilience Innovation Labs (RILabs) analyze the factors that determine a community's resilience to shocks and stresses and identify new

approaches or tools that might help them maximize these determinative dimensions of resilience. RAN partners, supported by the Stanford University's Human Sciences and Technologies Advanced Research Institute, will ultimately use these findings to develop and test innovations that strengthen communities' ability to recover and thrive.

This first report, *The State of African Resilience: Understanding the Dimensions of Vulnerability and Resilience*, offers a brief background on the evolution and objectives of the RAN and describes the new methodological tools that the network brings to measuring and improving community resilience. The report also offers a preliminary look at what the RILabs (RAN's regional university-based centers for implementation of resilience programs) are learning in the diverse communities in which they work. Each RILab outlines what it considers the most salient

dimensions of resilience and vulnerability; analyzes how these dimensions relate to one another and to overall community resilience; and, based on that analysis, identifies the most promising entry points for resilience innovation and intervention. Among the important innovations of the RAN approach is developing the concept of "pathways" of vulnerability and resilience, which brings a more differentiated analysis to the study of resilience, examining multiple aspects of cause and effect—how individual dimensions of resilience influence each other and how they are more or less directly related to overall community resilience and vulnerability.

Annual *State of African Resilience* reports will highlight interventions and innovations developed by RILab collaborative teams and how target communities are engaged in the development, testing, refinement, and adoption of these strategies.

# Building a Network of Resilience Scholars and Innovators

## *Evolution of the ResilientAfrica Network*

**THE RAN BRINGS A RANGE OF NEW PLAYERS AND NEW APPROACHES** to the challenge of understanding and building resilience among vulnerable populations. The RILabs aim to have direct impact in their target vulnerable communities, strengthening these communities' capacity to mitigate, adapt to, and recover from shocks and stresses in a way that leaves them better off and less vulnerable to future crises—that is, more resilient. At the same time, RAN serves additional strategic objectives that will contribute to the literature on the emerging field of resilience programming and deepen understanding of the potential opportunities that a “resilience approach” offers for new and more-effective engagement for policymakers, development practitioners, and communities.

### Origin and Structure of the RAN

Launched in November 2012, the RAN is funded by the U.S. Agency for International Development (USAID). It is one of seven USAID partnerships established through the Higher Education Solutions Network (HESN), now under the umbrella of USAID's newly created Global Development Lab. Through the HESN's university-led partnerships, USAID seeks to promote greater collaboration between development professionals and university communities, harnessing their collective talents and energies to more effectively address some of the world's most complex development challenges. A guiding objective of RAN, as with each of the HESN partners, is to bring together the power of science and technology, the rigor of academic research, and the creativity that derives from interdisciplinary collaboration to help inform more effective development approaches.

Makerere University, headquartered in Kampala, Uganda, leads the RAN and serves as the East African Resilience Innovation Lab (RILab). Makerere is joined by the University of Pretoria in South Africa, the University for Development Studies in Ghana, and Jimma University in Ethiopia, each of which houses a regional RILab. Each of the four regional RILabs also partners with other universities (Network Plus Partners) in their respective regions (see Figure 1).

**FIGURE 1. MAP OF RAN RILABS AND PARTNER UNIVERSITIES**

*West Africa*

**RILab: University for Development Studies (Tamale, Ghana)**

- Cheikh Anta Diop University (Dakar, Senegal)
- University of Science, Technology, and Technics (Bamako, Mali)
- University of Education (Winneba, Ghana)

*Horn of Africa*

**RILab: Jimma University (Jimma, Ethiopia)**

- Benadir University (Mogadishu, Somalia)
- University of Addis Ababa (Addis Ababa, Ethiopia)

*East Africa*

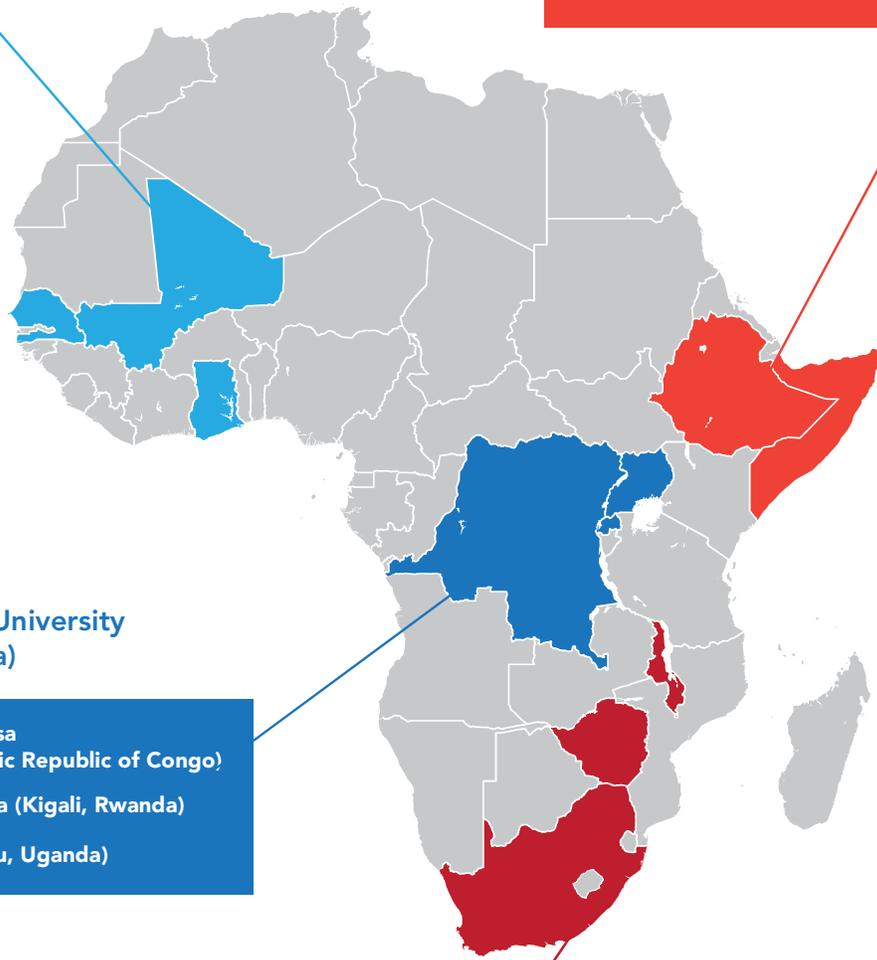
**RILab: Makerere University (Kampala, Uganda)**

- University of Kinshasa (Kinshasa, Democratic Republic of Congo)
- University of Rwanda (Kigali, Rwanda)
- Gulu University (Gulu, Uganda)

*Southern Africa*

**RILab: University of Pretoria (Pretoria, South Africa)**

- Ezekiel Guti University (Bindura, Zimbabwe)
- Lilongwe University of Agricultural and Natural Resources (Lilongwe, Malawi)
- University of Limpopo (Limpopo Province, South Africa)



## Objectives of the RAN

With an overall mission to strengthen resilience in vulnerable African communities, RAN's core objectives include:

1. Design and apply a data-driven, evidence-based framework to better understand and measure resilience in target communities;
2. Develop, test, and bring to scale innovative technologies and interventions that strengthen the resilience of vulnerable individuals, households, and/or communities; and
3. Enhance and share resilience-related knowledge globally by engaging students, faculty, staff, and development experts to collaborate on working toward strengthening resilience.

Through a series of intensive workshops, trainings, and consultations, RAN refined its tools through a four-step process developed in conjunction with Tulane/DRLA.

1. **Analyze context:** Through desktop-based literature reviews, university-based expertise, and engagement with community leaders, RILabs identified the sources and nature of shocks, stresses, and vulnerability in targeted communities in the respective regions. Using this information, each RILab prioritized thematic focus issues for its region and identified sentinel communities to be collaboratively engaged in assessment, observation, and evaluation of resilience trends over time as interventions are developed.
2. **Assess resilience:** With the application of a common resilience assessment framework, focus group discussions, key informant interviews, consultation with development, policy, and community stakeholders, RILabs identified and prioritized dimensions of resilience, setting a baseline that assists in measuring and assessing the impact of subsequent interventions.
3. **Propose and test interventions:** Working with multidisciplinary teams and in consultation with target communities, the RILabs will develop interventions with the potential to strengthen community resilience, work with communities to test and evaluate their potential, and, for those that hold promise, bring them to scale for broader impact.
4. **Disseminate findings:** RILabs will share their findings with one another, USAID, and other HESN partners. They will reach a broader audience of students, researchers, community members, and development experts through an open, web-based platform with a variety of open educational resources—of varying complexity, media types, and access channels—that meet the unique and purpose-specific resilience needs of diverse stakeholders.

Underpinning each of these steps, the RILabs will ensure consistent consultation and collaboration with targeted communities and with a broader array of experts, local and international policymakers, and other RAN members.

## RILabs: Building on a Record of Community Engagement

The RILab universities have a long-standing record of engagement and collaboration with local communities, with a strong focus on understanding real-life development challenges and developing practical solutions. The RILabs, therefore, do not begin the process of contextual analysis and resilience assessment from scratch. Rather they build upon a strong baseline of localized knowledge and understanding and work through well-established connections among local stakeholders within targeted communities.

### *Makerere University, Uganda*

Makerere University leads the RAN partnership and is also home to the Eastern Africa RILab. Established in 1922, it is among the oldest and most-renowned universities in sub-Saharan Africa, with a student body of 30,000 undergraduates and 3,000 postgraduates. The university has a history of external partnerships with domestic, regional, and international partners. Working with a broad range of stakeholders—from grassroots organizations to Uganda’s senior-most leadership—has been a consistent priority of the university, and engagement with local communities is an important criterion within faculty performance reviews. The Eastern Africa RILab partners and stakeholders are focused on vulnerability and resilience in communities affected by climate variability and conflict. Dorothy Okello, senior lecturer with the College of Engineering, Design, Art and Technology (CEDAT) at Makerere University, is director of the Eastern Africa RILab.

### *University of Pretoria, South Africa*

South Africa’s University of Pretoria houses the Southern Africa RILab. Established in 1908, the university has a large and diverse student body, with some 45,000 contact students and 14,000 active distance education students. Community engagement, civic commitment, and social accountability are embedded in the university’s academic mission. The Southern Africa RILab partners examine vulnerability and resilience within rural communities affected by HIV/AIDS. Lekan Ayo-Yusuf, professor at the University of Pretoria and dean of the University of Limpopo’s Medical University of Southern Africa (MEDUNSA) campus, is director of the Southern Africa RILab.

### *University for Development Studies, Ghana*

Ghana's University for Development Studies (UDS) houses the West Africa RILab. UDS was established in 1992 by the Ghanaian government with an explicit mandate to "blend the academic world with that of the community in order to provide constructive interaction between the two for the total development of Northern Ghana, in particular, and the country as a whole." The university has a specific focus on applied research and field-based training. Students are required to spend eight weeks each year, over the course of three years, living with local communities and collaborating on practical development solutions. The West Africa RILab partners are focused on resilience in the context of rapid urbanization, climate change, and food security. Dennis Chirawurah, lecturer in the School of Medicine at the University for Development Studies, is director of the West Africa RILab.

### *Jimma University, Ethiopia*

Ethiopia's Jimma University houses the Horn of Africa RILab. It is located roughly 200 miles southwest of Addis Ababa, in the relatively small town of Jimma. The university was founded in 1999 by a merger of the Jimma College of Agriculture and the Jimma Institute of Health Sciences and was established explicitly around the concept of community-based education. From matriculation to graduation, students are assigned to a particular community—urban, peri-urban, or rural—and throughout their enrollment live and work with community members to understand demographic, socioeconomic, political, and environmental dynamics and ultimately design an action plan for suggested development interventions. The Horn of Africa RILab is examining the effects of recurring drought on pastoralist communities and the challenges faced by chronically displaced populations in Somalia. Kifle Woldemichael, professor of epidemiology at Jimma University, is the director for the Horn of Africa RILab.

## Broader Goals of the ResilientAfrica Network

Beyond the RAN's core programmatic objectives, the network is contributing more broadly to the emerging field of resilience programming.

## Generating a Resilience Mindset

Among RAN's broader strategic goals, it seeks to create awareness and develop greater interest in resilience interventions within African universities and among policymakers, civil society, and local communities. A resilience lens requires a shift from traditional development programming and provision of emergency aid; while emergency and disaster relief assistance saves thousands of lives every year, it does not always address the underlying causes of these crises. Rather, disaster-impacted communities too often simply return to their standard practices or slip further into despair. The challenge for resilience interventions lies in delivering assistance in crisis while strengthening community capacity to ensure that future crises do not continue to unravel development progress.

Resilience programming also entails robust collaboration with communities at every stage of an intervention: from design through testing through implementation and assessment. A resilience approach seeks to identify and build on existing strengths, that is, assets of individuals, households, and communities, whether these are traditional adaptive strategies, social networks, entre-

preneurial drive, or other capacities that may be overlooked in more traditional development planning. Identifying and building on these capacities requires a deep understanding of community context and dynamics and ultimately gives the communities, households, and individuals greater agency and control in determining development outcomes. To this end, the RAN approach brings universities closer to the community—bringing scholars and community members into more direct face-to-face dialogue, and in the process, using community experiences to identify entry points for resilience building.



*Rather than simply looking at needs and weaknesses, RAN's focus on resilience requires that we look at community capacities and use those as entry points to strengthen opportunity and development.*

—Dennis Chirawurah  
*University for Development Studies*

## Bringing Scientific Rigor to Resilience Analysis

The field of disaster resilience has expanded dramatically in recent years and an important goal of the RAN is to ensure that its role is additive. Each RILab has conducted preliminary reviews of academic and policy literature on resilience, exploring existing theoretical debates, promising practices, and centers of excellence from which ideas can be drawn. This process has helped the RILabs identify thought leaders, key debates, existing tools and analytical frameworks, cross-national comparative data, and systems that will be useful as the labs refine their analyses. In all their activities, RILabs actively engage both university and faculty across multiple disciplines.

Current gaps within scholarly work on resilience include an underdeveloped understanding of the dynamics and causal pathways of resilience; assurance of effective and dynamic measurement amid disruptive change; and the challenge of measuring key variables, like social capital, adaptive capability, and psychosocial capacity. Among the advantages of the RAN collaboration is the ability to offer resilience assessment over time, rather than a static evaluation.

Working through its partnership with Tulane University's Disaster Resilience Leadership Academy, the RAN is adapting and applying for the first time in Africa the Resilience Analytical Framework, a pioneering model by Tulane/DRLA to systematize collection of empirical data, identify and measure resilience dimensions, and capture the interrelations among these dimensions (see Chapter



*The diversity of communities and the problem of inequality means that aggregated development data can be misleading. The advantage of RAN is to look at local communities that are real and understand exactly how people live.*

—Lekan Ayo-Yusuf

*Southern Africa RILab director*

II). Application of the framework across the continent and across the diverse communities that RAN is engaging offers important lessons globally for understanding and measuring resilience and assessing impact of resilience interventions.

## Building a Dataset Rich in Context and Local Specificity

A guiding principle of the RAN is to build a robust evidence base that reflects the very particular and localized characteristic of the communities with which the RILabs work. Hallmarks of the RAN approach to resilience analysis and innovation are context and spec-



*One of the contributions that RAN will make to the continent and to the global society will be the richness of the data that we're bringing, and the representation of voices from the community.*

—**Dorothy Okello**  
*Eastern Africa RILab director*

ificity, bridging the divide between theoretical models and the day-to-day realities of a very diverse set of communities.

Among USAID's HESN partners, the RAN alone is led by an African university and has an extensive sustained presence across the continent. The RILabs and partner universities benefit from long-standing connections to communities in their respective regions and catchment areas and a baseline of knowledge and understanding on which to build. Identifying resilience dimensions and developing solutions that have practical value and traction among community members is further deepening understanding of local dynamics. The RAN endeavor has encour-

aged member universities to amalgamate and systematize existing knowledge and data, which previously may have been dispersed across disciplines or faculties within the university. The creation of a common framework of analysis will contribute to a body of evidence and data that will be available to other universities, to national and international policymakers, to development practitioners, and to resilience and development scholars.

## Encouraging a Culture of Innovation and Creativity

Among the RAN's foremost goals is to encourage and expand a culture of practical research and innovation on African university campuses. With some notable exceptions, African institutions of higher education have prioritized instruction over experimental research and innovation. In many African countries, funding for research is extremely limited at the university level and is often allocated instead to national research institutions, while university faculty are limited to teaching and lecturing. Within the RILabs, the creation of multidisciplinary teams, each bringing a distinct perspective to a common set of problems and data is intended to trigger new kinds of collaboration and spur creativity of students and faculty alike.

## Building a Culture of Knowledge Sharing

An important part of the RAN's mandate is to build a knowledge base and bring on-the-ground lessons from resilience interventions to inform development practitioners, policymakers, communities, and resilience analysts. As RILabs move to incubate, test,



*The ResilientAfrica Network offers an exciting opportunity to tap into the capacities of African universities and focus their collective energies on delivering practical, real-time, and enduring solutions to the continent's most vulnerable communities.*

**—Professor William Bazeyo**

*Chief of party, associate professor, and dean, School of Public Health Makerere University, Kampala, Uganda*

and evaluate interventions, the RAN will convey findings to a broad African and international audience. Through the network of RILabs and Network Plus Partners, as well as other HESN partners, the RAN will share findings, challenges encountered, and lessons learned. RAN is developing a menu of resilience dimensions that represent the “community voice”—context-specific datasets that will be made available for mining by other interested development practitioners. As innovative interventions are tested, the network will share them with development practitioners who can assist in bringing them to scale. ■

# The RAN Resilience Framework

## *Developing a Tool to Analyze Community Resilience in Africa*

**RESILIENCE AS A DEVELOPMENT CONCEPT IS GENERALLY WELL UNDERSTOOD.** But identifying what factors—or what constellation of factors—make a particular household, community, or human system resilient is far more complex. And measuring resilience, a product of multiple, overlapping, and dynamic factors, is inherently difficult. Resilience is emerging as a key policy and programming concept and development agencies and practitioners are investing major resources in resilience-building approaches. Thus, the ability to measure resilience and to evaluate the impact of resilience-focused interventions will become increasingly important.

Established in post-Hurricane Katrina New Orleans, Tulane University's Disaster Resilience Leadership Academy has been a global center of excellence in the study of resilience. In order to deepen the knowledge of disaster resilience, Tulane/DRLA applies robust mixed-method research approaches to assessing, measuring, and analyzing resilience. Tulane/DRLA's analytical framework provides a greater understanding of the adaptation strategies and coping mechanisms of individuals, communities, and nations and uses resilience data to inform programming and guide evaluation of interventions.

Through the RAN, Tulane's model has now been adapted and applied for the first time in an African context. Application of the model across a diverse set of communities and contexts offers an important opportunity to test and refine the resilience assessment and measurement model and inform global efforts to develop resilience metrics in future.

Over the course of 2013, RAN partners worked together to adapt the Tulane/DRLA Resilience Analytical Framework, revising it to reflect the contextual drivers of risk, capacity and resilience in targeted African communities. Workshops to familiarize RAN members with the framework were supplemented by initial secondary data analysis and structured literature reviews by each RILab, as well as consultations with community stakeholders. The process also involved a cross-learning from other existing frameworks for understanding resilience, used by different development agencies.



*The RAN framework for resilience allows us to look at dimensions of resilience and the relation between all these several domains of life and livelihood.*

—Ky Luu

*RAN co-chief of party; executive director and clinical associate professor, Tulane/DRLA*

Development and application of the RAN Resilience Framework helps the RILabs:

- Understand shocks and stresses that affect populations and systems and the factors that render them vulnerable to those shocks and stresses;
- Understand what makes people and systems resilient (what makes them capable of withstanding or adapting to shocks and stresses in a manner that makes them less vulnerable to future risks);
- Identify resilience dimensions and indicators and assess system resilience; and

- Identify entry points and prioritize interventions to strengthen capacities and reduce vulnerabilities to build systems' resilience.

## The Qualitative Assessment Methodology as a Finding

The RILabs qualitative data collection process was modeled on a methodology established and tested by Tulane University's DRLA. But as is often the case, data collection required the RILabs to develop and refine analytical approaches through an iterative process tailored to the specific and varied contexts in which they work. The coding of the data required careful reflection, particularly when distilling into dimensions of resilience and subsequently summarizing the dimension data to highlight links between the dimensions. Additionally, the creation of the context-specific frameworks was highly iterative, evolving to take account of incoming findings from across the RILab communities. The challenge was to harmonize the ways in which the frameworks (pathways of vulnerability and resilience) were being developed without providing too-rigid an approach that would force context analyses into an inappropriate or misleading uniformity. This led to the frameworks as presented in this report, with the *levels* or *hierarchy* of dimensions (underlying factors, supporting/enabling factors, immediate causes/effects, outcomes) that explore causes and effects and ultimately constitute *pathways of resilience and vulnerability*. As such, the data presented here are not only informational findings, but also methodological findings that can be modified and applied to future resilience assessments.

## Key Terms in Assessing and Measuring Resilience

**Resilience:** Resilience is the capacity of people and systems to mitigate, adapt to, recover,<sup>2</sup> and learn from shocks and stresses in a manner that reduces vulnerability and increases well-being.<sup>3</sup>

**Disaster:** A serious disruption of the functioning of a community or society causing widespread human, material, economic, or environmental losses that exceed the ability of the affected community or society to cope using its own resources.<sup>4</sup>

**Hazard:** A dangerous phenomenon, substance, human activity, or condition that may cause loss of life, injury, or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.<sup>5</sup>

**Vulnerability:** The characteristics and circumstances of a community, system, or asset that make it susceptible to the damaging effects of a hazard.<sup>6</sup>

**Disaster risk:** The potential disaster losses in lives, health status, livelihoods, assets, and services that which could occur to a particular community or society over some specified future time period. Disaster risk is assessed according to prevailing hazards and patterns in population and socioeconomic development; and it depends on hazard probability, potential loss, and capacity of the community or system at risk.<sup>7</sup>

**Shocks and Stresses:** Shocks are natural, social, economic, and political. They can occur as slow or rapid onset shocks (e.g., earthquakes, floods, disease outbreaks) or longer-term stresses or trends (e.g., environmental degradation, price inflation, political instability, conflict) and can affect individuals and specific households (idiosyncratic) or entire communities/populations (covariate). Shocks can be transitory, seasonal, or structural and their frequency, severity, and duration can vary widely.<sup>8</sup>

**Adaptive versus Coping Strategies:** In looking at resilience, the studies have focused in part on what strategies individuals, households, and communities use to mitigate and respond to the impacts of shocks and stresses, and the subsequent impact of these strategies on their long-term overall well-being.

In a worst-case scenario, capacity to weather a shock can be exhausted and outcomes such as disease and death result, indicating a total failure of coping. In other situations, the strategies employed allow for a measure of recovery from a shock,

but these strategies may variously erode, maintain, or improve well-being (and resilience). For example, a household may spend all their cash savings to recover from a shock, eroding their resilience to future shocks. A household may eat cheaper (but equally nutritious) foods to mitigate a financial shock, leaving them with no net change in their resilience and well-being after the shock is over. A household may modify their livelihood strategies in response to a shock in such a way that they will be more resilient to future shocks (livelihood diversification, adoption of drought-resistant agricultural techniques, etc.) that render the household stronger and more able to withstand future shocks as consequence, thus increasing their resilience.

In general parlance, all such strategies are referred to as “coping strategies.” However, in the RAN context, these strategies were split into two categories with modified definitions, in order to highlight those strategies that improve well-being and resilience.

Adaptive strategies describe strategies used to manage the impacts of a shock/stressor that have a positive effect on a system’s resilience. That is to say, coping that improves the long-term vulnerability, health, wealth, and well-being of individuals, households, and communities. This encompasses concepts such as positive adaptive strategies, positive coping strategies, adaptive capacity, and sustainable coping strategies (that lead to improvements in resilience).

Coping strategies are those strategies used to manage the impacts of a shock/stressor that either have negative impact on resilience (eroding resilience) or have no net impact on resilience. That is to say, coping that does not improve or makes worse the vulnerability, health, wealth, and well-being of individuals, households, and communities. This encompasses concepts such as negative coping, negative adaptive strategies, unsustainable coping strategies, absorptive capacity (in the negative sense), and sustainable coping strategies (that do not lead to improvements in resilience).

## Components of the RAN Resilience Framework

The goal of strengthening systems' resilience is to ultimately improve their well-being. This requires an understanding of contextual factors, resilience dimensions and adaptive strategies, and a focus on building systems' existing capabilities. To accomplish this, the resilience framework entails a four-step process that starts by analyzing the context, understanding and prioritizing resilience dimensions, developing relevant interventions, and evaluating the effectiveness of the interventions in increasing resilience (Figure 2). Close and consistent engagement and consultation with target communities are an essential component of each successive step.

**FIGURE 2: RAN RESILIENCE FRAMEWORK**



### Step 1: Analyzing Context

Context analysis seeks to assess the causes and effects of shocks and stresses, vulnerability factors, and coping strategies. This entails identifying the units of focus—whether households, communities, or systems—and the shocks or stresses to which they are vulnerable. Once the major stresses are determined, they are further prioritized—weighing such factors as the relative magnitude or intensity of the challenge, the RILabs' comparative advantage in addressing the challenge (based on existing expertise and research), and the extent to which the challenge is already being addressed in the community.

Context analysis is the initial step in the resilience assessment, involving exploratory methods such as literature reviews, secondary data analyses, and consultations across disciplines. They

allow flexibility within the assessment to identify as many contextual issues as possible, which can be prioritized at a later stage. The success of this process depends on appropriate stakeholder identification and engagement and accurate determination of the relevant sources of information.

## Step 2: Identifying Resilience Dimensions and Adaptive Strategies

Having prioritized focus issues and target units/systems, populations, or communities, this step aims to obtain more primary data regarding the prioritized issue, the focus systems' overall capacities, and the extant adaptive strategies regarding the priority issues (dimensions of resilience) in the target community. In this step, RILabs begin to identify potential entry points for intervention.

Identifying dimensions of resilience involves asking community members what allows them to thrive, what makes them most vulnerable, and what they currently do to protect themselves against their greatest vulnerabilities. The answers to these questions—collected in focus groups and key informant interviews in the target communities—are aggregated into a large, qualitative dataset from which the RILabs can work to identify both the dimensions of resilience and the community's capabilities. Each dimension is assigned a measurement indicator so that any adaptive strategy or intervention that comes out of the resilience assessment can be properly monitored and evaluated for its impact on the resilience

dimension it is intended to address. (Some of these indicator measurement tools may exist in standardized global and regional tools, while others will be derived from the context-specific nature of the data.) The qualitative study also feeds into quantitative data collection and analysis, to further draw out dimensions of resilience and the links between them and to validate context-specific resilience frameworks.

Drawing on these combined datasets, RILabs identify and analyze how various dimensions overlap or influence one another, and whether a particular dimension acts primarily at the level of an underlying driver of vulnerability, an intermediate cause or impact of shocks and vulnerabilities, an outcome or manifestation of combined shocks, stresses, and vulnerabilities, or as an enabling or supportive component of resilience. These layers or "pathways" of resilience are captured in context-specific resilience frameworks, which schematically outline the most salient dimensions of resilience and vulnerability in a particular community, trace how they interact with one another, and identify the primary role they play in contributing to a community's overall resilience or vulnerability in the face of identified shocks or stresses. The dimensions and pathways emerging from qualitative data are validated by an additional round of quantitative data collection and analysis. With the quantitative surveys, it is then possible to develop objective measurement scales for the different dimensions and to understand relationships between dimensions and subdimensions.

### Step 3: Designing Resilience Interventions

With resilience dimensions and entry points for interventions identified in Step 2, RILabs then move to identifying, incubating, testing, and scaling innovations<sup>9</sup> that target capabilities and reduce vulnerabilities to strengthen a system's capacity to address a specific shock or stress. In this step, RILabs determine what innovations have previously been successful in addressing the major vulnerabilities and what innovations are most likely to effectively strengthen resilience in the community. Stanford University is providing technical support to the RAN by creating the enabling environment in all four RILabs to identify and incubate innovations and will create a team-based online platform to test and scale interventions.

For every innovation that is incubated, RILabs will have a theory of change that describes how it is expected to work; which vulnerabilities/capacities it addresses; how it will be scaled out to its targeted participants; how its intended and immediate benefits will be transformed in the long run; and sustainable capacities that make people and systems more resilient.

### Step 4: Assessing Outcomes

This step assesses the results of interventions designed to strengthen resilience. Based on measurements for effectiveness (the extent to which the objectives of each intervention were achieved); efficiency (the extent to which inputs have been economically converted into outputs); relevance (the extent to which an intervention's achievements are consistent with the beneficiaries' requirements and needs and the RAN's priorities); and sustainability (the likelihood that the benefits of an intervention—and perhaps the intervention itself—will continue after the RAN program ends), this step will determine the extent to which the system interventions improved capacities and addressed vulnerabilities in the target communities.

### Disseminating Findings to a Broader Community of Scholars, Policymakers, and Practitioners

An important part of the RAN's mandate is to build a knowledge base through the four-step resilience process and to bring on-the-ground lessons from resilience interventions to inform development practitioners, policymakers, communities, and resilience analysts. As RILabs move to incubate, test, and evaluate interventions, the RAN will convey findings to a broad African and international audience, and through the network of RILabs and Network Plus Partners, as well as other HESN partners, will share findings, challenges encountered, and lessons learned. RAN will provide a menu of resilience dimensions that represent the "community voice"—context-specific datasets that will be made available for mining by other interested development practitioners and will share tested innovative interventions that development practitioners can help bring to scale. RILab findings will be shared with a broad audience of students, researchers, community members, and development experts through an open, web-based platform that will offer a variety of ways to access data and analysis. ■

# Deliberative Polling®

## *Deepening Understanding of Community Insights and Priorities*

**AMONG THE CORE PRINCIPLES OF THE RAN** is that its work is shaped and centered first and foremost by the perspectives, realities, and priorities of the communities with which the RILabs work. Governments will often use objective assessments to craft policies to mitigate risk and vulnerability, but resultant policies often fail to take community opinions adequately into account. As a result, communities may be complacent or even resistant as top-down policies are rolled out, and may ignore government warnings and directives because of a lack of basic information and understanding of their rationale. The integration of community perspectives into the policy process in a credible, transparent manner is critical to eventual buy-in and effectiveness of policies and interventions and can support a culture of communication and collaboration for future interventions.

But accurately discerning “community” perspectives and priorities, even in a relatively small cohesive community, is a complex undertaking. The RAN’s Resilience Framework offers one innovative tool for capturing vulnerabilities and capacities. Another innovation that the RILabs are utilizing is Deliberative Polling®, a method of community engagement developed in 1988 by Dr. James Fishing at Stanford University’s Center for Deliberative Democracy, to more accurately capture the opinion and priority needs of selected communities.

There have been more than 70 deliberative polling exercises in 20 countries, including in the United States, Europe, Asia, and South America. Through the RAN partnership, the method is being applied in an African context for the first time to offer RILabs a new tool to help deepen their understanding of and engagement with the target communities.

### **The Challenge of Discerning “Community Perspectives”**

If interventions and innovations are to be ultimately effective, it is critical that end-users are consulted early on in a meaningful way. But public consultations and traditional methods of gathering information—surveys and focus groups, for example—have significant limitations. These limitations are common to opinions elicited in public opinion research the world over. Among the foremost constraints are:

- *Rational Ignorance*: Individuals' priorities often tend to focus on those realms over which they have more control, and with few exceptions, individual community members have little time or incentive to think hard about complex policy issues that affect their communities;
- *Phantom Opinions*: When responding to queries about their thoughts or preferences on a particular issue, individuals will often feel obliged to provide an answer even if they have not ever given the issue much thought. Individuals are often unwilling to admit that they simply don't know; and
- *Selectivity of Sources*: Individuals generally tend to speak and associate with other like-minded individuals and often craft their judgments based on a limited set of sources, without having heard alternative perspectives.

Public polls are generally representative, when done well, but those polled may have spent little time thinking about the issue at hand and are therefore not well informed. Focus group meetings provide qualitative depth but are too small and may be too purposefully selected to be statistically representative of a community. Town hall and public meetings may gather a large segment of a given community, but those members with the strongest opinions or the most confidence will often dominate and influence outcomes. Self-selection undermines any claim to representativeness.

It is important, therefore, to try to capture the considered judgments of individuals by being more selective about who is targeted and how their opinions are collected. The Deliberative Polling® method combines scientific random sampling with depth of discussion and balanced information, to elicit opinions that are both representative and informed. Which policies will a community accept on the basis of good information and which policies will it not accept? And why? The method aims to answer these questions with a practical method of public consultation that is both representative of the population and deliberative in its method by engaging the public in competing arguments.

Through the RAN, Stanford is working with a number of the RILabs to implement their respective Deliberative Polling® sessions, providing poll participants the space and opportunity to arrive at considered judgments that can guide local policymakers in dealing with resilience issues

## How Does Deliberative Polling Work?

Deliberative Polling® gathers scientific random samples of a community, representative in attitudes and demographics, to consider competing arguments about policy choices relevant to that community. The process seeks to provide information to a representative sample of a given population about a set of policy options and then measure changes in opinion given the

new information. The method begins with a baseline opinion survey and subsequently adds information and the opportunity for peer consultation in a process aimed at creating more informed judgments. It does not seek to change opinions per se, but rather ensure that opinions are more informed and deliberate. The process includes a briefing document drafted by a diverse committee of experts and stakeholders that outlines the pros and cons of various policy options; small, managed discussions facilitated by a neutral arbiter who ensures that debates are not unduly influenced by participants with the strongest opinions or loudest voices; and opportunities for questions to be posed to a diverse panel of topic experts. After a day or two of deliberations that alternate between small-group and plenary sessions, the respondents take the same survey as the one on first contact.

## Deliberative Polling and the ResilientAfrica Network

One of RAN's first two deliberative polling sessions was conducted in July 2014 in Butaleja district in the Mt. Elgon region of Uganda.<sup>10</sup> Butaleja district is prone to frequent floods and associated environmental disasters, which have resulted in repeated relocations of local inhabitants, most of whom are smallholder farmers. The district's population of 200,000 is growing rapidly and the area's population density is many times higher than Uganda's national average.

**The problem:** Due to recurrent floods in the region, the Ugandan government issued multiple policy directives on land use, including resettlement and integrated wetland management (planting trees, managing water channels, and adopting appropriate agricultural practices). Despite these directives, communities continue to encroach on wetland areas and riverbanks closer and closer to high-risk zones. The Makerere RILab team sought to identify the key factors that contribute to community complacency and resistance to these various policy directives. During the background work on rolling out the DP tool, the Uganda RILab team found a significant asymmetry between community and government expectations regarding risk-mitigation policies, rendering key policies unsuccessful and warnings unheeded. Within the targeted communities, there was little understanding of the underlying rationale for the policies being currently implemented and enforced. In consultations with community members, the RILab team encountered a lack of basic information regarding these directives. "If you resettle us, who then owns the land left behind and who owns the land where we are resettled?" was among the questions raised. "Since forests belong to government, will government take over our land if we plant trees?" was another. Further, the RILab team found that communities do not necessarily make the connection between population pressure, family planning, and high-risk settlements, and as a result, there is little community buy-in to long-term family planning interventions.

**The process:** Working with local community members, topical experts from the Makerere faculty, local NGOs, and representatives from the Department of Disaster Preparedness, Management, and Refugees within the Ugandan prime minister's office, the Makerere

RILab assembled a stakeholder advisory committee that, after conducting extensive focus group discussions, and key informant interviews, identified a set of policy approaches to address the priority challenges of Butaleja residents associated with environmental risk and relocation. The stakeholder committee, supported by Dr. Fishkin and the Stanford team, developed a face-to-face survey, covering 36 specific, closely related policy options. With random selection of households and random selection of participants within each household, they conducted 232 initial interviews (with only 11 refusals). Of the 232 individuals interviewed in an initial round, 217 completed the two days of deliberation, engaging in small group discussions and posing questions to competing experts in plenary sessions. At the end of the two days, the participants were asked to respond to the same questionnaire as before.

**The findings:** Given the recurrent environmental disasters in Butaleja, one of the major issues under discussion was whether or not land in dangerous areas prone to flooding and landslides should be rezoned to prohibit settlement. Before deliberation, only 46 percent of respondents endorsed this approach. But after deliberation, the level had risen 21 points to 67 percent. With regards to an early-warning system for disasters using text messaging, support decreased from 60 percent to 42 percent. By contrast, support for an early-warning system using sirens went up from 79 percent to 92 percent. The unreliability of electric

power for charging mobile phones and the unreliability of the area's cell phone coverage moved people to suggest sirens as a more reliable system than text messaging. While there was an increase in support (from 70 percent to 83 percent) for communities to manage the wetlands during the dry season, there was a drop in support (78 percent to 67 percent) for the idea that communities should maintain the water channels during the wet season and a similar drop in support (55 percent to 42 percent) for communities being responsible for de-silting riverbeds. Discussions showed an awareness of the machinery and scale of work required to get these tasks done.

In the area of family planning, there was an increase in support among participants for the government to enforce the minimum age of marriage at 18 years. Support rose from 87 percent believing enforcement is important to 94 percent. The area currently has many girls marrying at ages as young as 13. At the end of the deliberations, one of the highest-priority policies was that "the community should encourage girls to go to school as well as boys." This idea started very high and went even higher (97 percent to 99 percent) after two days of discussion.

The agenda included 36 policy options identified by the Advisory Committee as potentially leading to action if the random sample of the people supported them. The Makerere University RILab will engage community

decisionmakers as well as NGOs and the donor community in discussions of the results, and the project team is hopeful that many of the most-highly supported options will be implemented.

**The lessons:** Through the Deliberative Polling® exercise's small-group and plenary sessions, the RILab team found that community members come into the deliberations with seemingly straightforward but real concerns and unanswered questions about what policies might mean for them. These basic information gaps produced a general attitude of skepticism or even distrust toward seemingly objective policies. In crafting and implementing interventions and policy initiatives, early and frequent consultation with affected communities to answer their concerns and allay misgivings is essential to gain buy-in and support. The RILabs Deliberative Polling® analyses can be a potentially powerful tool in drawing out these concerns and helping inform targeted risk communication.

**Conclusions:** Participatory dialogue can help enhance communities' considerations of the benefits and tradeoffs of different policy options and the policy process can be greatly enhanced by employing a community-centered approach. Assessing community opinion before and after in-depth community dialogues can enhance buy-in and adoption of resilience policies and interventions, and community concerns expressed during deliberation can be the basis for a stronger risk communication message that takes into account subtle variances in local community contexts. ■

# Tracing Pathways of Resilience

## *Identifying Dimensions of Resilience and Exploring the Linkages among Them*

THROUGH THE PROCESS OF CONTEXT ANALYSIS, COMMUNITY CONSULTATION, AND QUALITATIVE RESEARCH, RILab teams sought to identify the most-salient dimensions of resilience within their respective target communities; examine how multiple dimensions combine or interact to influence vulnerability and resilience; and ultimately identify likely entry points for interventions and innovations that have the greatest potential to strengthen overall resilience. The RILab preliminary findings are captured in “context-specific frameworks” that show schematically how particular dimensions relate to and influence communities’ overall vulnerability and resilience to identified shocks and stresses.

### Defining Broad Dimensions of Resilience

In conducting the research, all country teams were encouraged to identify dimensions of resilience specific to their respective communities’ context, driven by primary data (not secondary sources), RAN general analysis guidance, or the RILab team’s own interpretations. The methodology developed in the process ensured that resilience dimensions were not predetermined—or prescribed—but rather emerged from the data and qualitative analysis. Only after data collection and analysis did RILabs seek to apply some standardization of terminology and develop an initial set of broad categories and definitions that have helped facilitate comparative analysis where possible. Collectively, the RILabs findings fell into nine broadly defined categories that capture different aspects of vulnerability and resilience.

**Wealth:** This dimension includes financial assets, livelihoods (income-generating or other livelihood-supporting activities), food security (particularly from an economic access perspective), access to credit, and noncash assets with an economic or financial value, for example land, livestock, houses, and household assets.

Wealth is among the most common and complicated themes to emerge from RILab discussions. It is the dimension that is most often linked to other dimensions within the

RILABs' resilience frameworks, and in every discussion among RILABs and communities, the pervasive influence of poverty was either explicitly mentioned or could be inferred from the data. The determination of wealth as a dimension of resilience is consistent across RILABs, but its place within the respective context-specific frameworks varies greatly across communities. In some cases, wealth (or its lack) is understood more as an outcome of vulnerability and shock, with poverty seen as primarily a negative effect of—rather than a cause or chief contributor to—shocks such as HIV/AIDS, conflict, or climate variability. In other cases, poverty is primarily described as an underlying or immediate cause—at the very least an aggravating factor that compounds the difficulty of shocks that would otherwise be overcome by wealthy communities. Communities with little access to capital or noncash assets are unable to build flood-resistant houses in Rwanda, or to manage the effects of rapid urbanization and food insecurity in Ghana. In nearly all contexts, the wealth dimension has characteristics of both an outcome and an underlying factor. Indeed, the cycle of poverty—shocks leading to poverty, poverty leading to increased vulnerability—is common to all RILAB analyses.

**Social Capital:** This dimension describes the extent and various forms of connectedness among individuals, households, and groups, including social and community networks, formal institutions, and informal institutions. It also includes perceptions of the sense of community inclusion and exclusion.

Community networks, which are often the most visible manifestation of social capital, appear to have an overall positive effect on resilience in most cases and are most commonly classified as a dimension that helps create an enabling or supportive environment. In many cases, strong community networks are credited with making significant contributions to resilience capacity, particularly where they promote communal practices. Among Ethiopia's Borana communities, for example, a variety of practices embedded within the traditional social structure provide a social safety net for vulnerable households. These include the tradition of *busa gonofa*, a support system through which community members contribute livestock to households most affected by drought, and other collectivist practices such as the loan of milk-producing cows or provision of milk to vulnerable households. Only in a few cases do some negative aspects of social/community networks surface in the RILABs' collected data. In Somalia, some community members warn of the downsides of these networks, noting for example that some older women in support groups encourage younger women to favor traditional—at the expense of safer, more modern—maternal health services, and that the concept of clan loyalty can create and exacerbate conflictual relations. The Southern African RILAB points out that one negative aspect of social networks can be the stigmatization and social exclusion experienced by some HIV-positive individuals.

**Psychosocial Health:** This dimension describes the psychological status, well-be-

ing and happiness of people, and general outlook—whether hopeful and optimistic or fatalistic and discouraged.

The dimension covers aspects ranging from psychosocial trauma—as a result of both acute shocks (conflict and drought, for example) and the challenges of living with constant stresses (poverty or disease, for example)—to cultural/religious beliefs and attitudes, to stigma and discrimination. In Ethiopia, Northern Uganda, and the Democratic Republic of Congo (DRC), RILab teams consider stress and trauma the aspects of psychosocial well-being most relevant to the resilience of target communities. In Somalia, Rwanda, and Ghana, the steadfastness of religious belief and practice was considered by some central to psychosocial health; and in Southern Africa, fear, stigma, and discrimination—especially with reference to HIV/AIDS—were deemed the most critical aspect of this dimension of resilience.

In interviews with target communities, psychosocial health was mentioned less frequently than other dimensions, but was considered extremely important to the people who did discuss it. Community members most often attributed vulnerabilities to external factors—major shocks such as disease and natural disaster—and those interviewed tended to categorize psychosocial health almost exclusively as an outcome rather than a catalyst for vulnerability and resilience. However, certain aspects of psychosocial health, such as discouragement in the face of repeated shocks, indicate that this dimension may have aspects of being an underlying factor as well. In Southern Africa, a number of respondents reported that beliefs and attitudes regarding stigma—components of the psychosocial dimension—played a causal role, in that fear and shame prevent some individuals from seeking out HIV/AIDS treatment. In DRC, psychosocial maladjustment among men is viewed by community members interviewed as one of several determinants driving high levels of sexual- and gender-based violence. In Somalia, psychosocial health was identified as having a positive influence on resilience; as noted by one respondent, “keeping a positive mood even amidst the crisis, with hope that the current situation will end, is a key strategy.” The complex interplay between psychosocial health and community resilience can be difficult to tease out, and is an area that may benefit significantly from further study and programming attention.

**Infrastructure:** This dimension refers to the basic infrastructure, including physical or societal assets—roads, railways, telecommunications, health and education facilities, for example—that allow people to function more productively. In some contexts, this dimension includes aspects of human resources infrastructure, for example, health professionals and teachers.

Because this dimension covers a broad set of concepts generally capturing a combination of built physical infrastructure and developed human and institutional infrastructure, it was interpreted differently across the RILabs. In Malawi, where concerns persist about flood-resistant structures, the dimension referred largely to physical infrastructure; in DRC, protracted armed conflict has undercut the development of both physical and institutional infrastructure. In Zimbabwe, community members reported feeling that their isolation from commercial activity was restricting employment opportunities, a function of infrastructural underdevelopment.

### **Environment (and Natural Resources):**

Within the RILab analyses, environment and natural resources refer to resources such as soil quality, water, air, forest, and fisheries on which resource-based activities may depend, as well as measures to manage these resources through, for example, erosion protection, storm protection, and water conservation. Aspects of this dimension also include climate and general environmental phenomena, such as natural disasters, climate change, and climate variability.

Environment as a dimension of resilience played out differently across RILab target communities. In some it was perceived as an underlying contributor to vulnerability (poor soil quality or scarce water, for example), and in others a direct catalyst of shock and stresses through drought, flood, and landslides. The collected data suggests that its recurrence as a critical dimension of resilience is a function of its close link, in nearly every case, to livelihoods, particularly in communities dependent on agriculture and livestock. Only in DRC did environment not emerge among the most critical resilience dimensions. The DRC analysis suggests that this may have been because respondents did not make the link between the dimension and the conflict over natural resources, but that nevertheless addressing the link between conflict and resource management is an important consideration when looking at resilience.

**Health:** This dimension includes aspects of physical health, access to health care services, and access to other health-re-

lated services and assets—in particular, water, sanitation, and hygiene.

Framed as a dimension, health encompasses both individual health status and levels of quality and access to health care services. Although most communities view the health dimension as an outcome of better resilience—similar to the psychosocial dimension’s near-unanimous characterization as such—respondents in Southern Africa, where the focus was on HIV/AIDS, were more likely to identify it as a driver of vulnerability as well. In Malawi, focus groups reported that HIV/AIDS-affected households were slower to evacuate during floods; and in South Africa, ill health was said to negatively impact both human capital (HIV/AIDS-affected individuals are less likely to be able to afford or attend school or keep jobs) and psychosocial welfare (illness can be discouraging and stigmatizing and can thereby lead to social isolation).

**Human Capital:** Human capital comprises the skills, knowledge, labor capacity, and level of good health that enable people to pursue different strategies and achieve livelihood outcomes. Education, including access, quality, and relevance, was the aspect most often cited within the RILab analyses, and, like the wealth dimension, emerges as a critical underlying driver, cause, and outcome of vulnerability across the target communities.

In all three of the Southern Africa RILab partners—South Africa, Malawi, and Zimbabwe—human capital was a central dimension to resilience, identified as

both an immediate cause and result of vulnerability. That was also true in Somalia, where there is a great demand for education and job skills but very little of each, due to chronic internal displacement which uproots families and makes formal education and training difficult to obtain. By contrast, both in Rwanda and DRC deficits in human capital were classified as underlying causes—although in these cases, both wealth and human capital had aspects of immediate impacts and outcomes. Human capital and wealth were generally perceived as closely linked.

**Security, Protection, and Advocacy:** The RILabs, through collective discussion, identified these three components and placed them together into this broad dimension. The labs view security as referring to physical security (either exposure to crime or conflict) and to a perception of security; protection as referring to efforts to uphold human rights and protection of people's lives, dignity, and integrity from the effects of violence, coercion, and deprivation, as well as issues related to legal frameworks, raising awareness of rights and laws, and the state's ability to fulfill their duties to protect communities; and advocacy as including efforts to bring about positive change in security, engagement of citizens to achieve their security goals, and facilitation of communication between people and organizations related to security.

Depending on the context, this dimension ranges from a secondary concern to a core aspect of resilience. It features prominently in the community responses in both DRC and Rwanda (particularly in camps for internally displaced persons); in both contexts, RILab teams consider security to be an immediate cause or effect of their respective communities' low resilience capacity. In Somalia, security is identified as an underlying factor—fundamental, but not easily addressed. It is worth noting that it may be that in some cases security's importance is so great as to be implied, thus possibly leading to its absence in the data and some of the frameworks.

**Governance:** This dimension refers to the activities, processes, and frameworks in which authority—political, economic, or administrative—is exercised to manage the affairs of a country or administrative unit. It includes both formal and informal mechanisms in which people exercise their rights and articulate their interests.

As one of the most salient dimensions, governance was mentioned by every community surveyed as a factor in resilience. Respondents in most community contexts identified governance as a supporting or enabling factor, though reviews of government performance in this arena were generally mixed. For example, in the context of floods and landslides, in Rwanda, the communities expressed appreciation for government's ability to organize large rebuilding efforts while at the same time (to a lesser degree) associated governance with putting the burdensome costs of education and health care onto communities and households. Communities in DRC were outliers in that they viewed governance both as an underlying cause (of conflict and gender-based violence) and as so vast that it warranted division into two separate dimensions—one referring to traditional governance and one to justice and protection. The justice and protection dimension in DRC, which describes the formal and informal mechanisms through which citizens exercise their legal rights and mediate conflicts (closely linked the secu-

rity, protection, and advocacy dimension), captures responses of many of those interviewed who underscored the role of a weak justice system and impunity of aggressors in the context of armed conflict and gender-based violence.

## Synthesis of Dimensions of Resilience across RILabs

Figure 3 shows where the various target communities view each dimension being positioned on the pathway to resilience.

**FIGURE 3: DIMENSIONS OF RESILIENCE ACROSS RILABS**

<b>General Dimesnions (RAN guidance)</b>	Malawi (Flooding/HIV)	South Africa (Poverty/HIV)	Zimbabwe (HIV)	Ethiopia (Drought)	Somalia (Displacement, Drought, Conflict)	Rwanda (Floods and Landslides)	Rwanda (IDP Camps)
<b>Wealth</b>	Wealth	Wealth	Wealth	Wealth	Wealth	Wealth	Wealth
				Livestock			
<b>Psychosocial</b>	Psychosocial	Psychosocial	Psychosocial	Psychosocial Conditions	Psychosocial	Psychosocial	Psychosocial
<b>Health/Health Services</b>	Health	Health and HIV/AIDS	Health	-	Health	Health/ Healthcare Services	Health/ Healthcare Services
<b>Natural Resources/ Environment</b>	Environment	Environment	Environment	Environment	Natural Resources/ Environment	Natural Resources/ Environment	Natural Resources/ Environment
<b>Infrastructure</b>	Infrastructure	Infrastructure	Infrastructure	Infrastructure and Social Services	Infrastructure	Infrastructure/ Shelter	Infrastructure
<b>Governance</b>	Institutional Factors	Institutional Factors and Governance	Institutions/ Governance	Governance, Peace, and Security	Governance	Governance	Governance
<b>Security, Protection, and Advocacy</b>	-	Security and protection	-		Security	-	Security
<b>Human Capital</b>	Human Capital	Human Capital	Human Capital	Human Capital	Human Capital	Human Capital	Human Capital
<b>Social Capital/ Community Networks</b>	Social Capital	Social Capital	Social Capital/ support	Community Networks/ Social Capital	Social Capital/ Community Networks	Social Capital/ Community Networks	Social Capital/ Community Networks
<b>Other Dimensions</b>	-	-	-	-	-	-	-

**FIGURE 3: DIMENSIONS OF RESILIENCE ACROSS RILABS (CONTINUED)**

<b>General Dimesnions (RAN guidance)</b>	DRC (Conflict)	DRC (GBV)	Uganda (Climate Variability)	Uganda (Northern Conflict)	Ghana (Greater Accra, Ashaiman- Rapid Urbanization)	Ghana (Tamale- Rapid Urbanization)	Ghana (Upper East, Navrongo Municipality- Food Insecurity and Climate Variability)
<b>Wealth</b>	Wealth and Living Conditions	Wealth and Living Conditions	Wealth and Livelihood Agriculture	Wealth Agriculture	Wealth	Wealth	Wealth
<b>Psychosocial</b>	Psychosocial	Psychosocial	Psychosocial	Psychosocial	Psychosocial Health	Psychosocial Health	-
<b>Health/Health Services</b>	Health	Health	Health	Health	Health/ Health Services	Health/ Health Services	Health
<b>Natural Resources/ Environment</b>	-	-	Natural Resources/ Environment	-	Natural Resources/ Environment	Natural Resources/ Environment	Natural Resources/ Environment
<b>Infrastructure</b>	Infrastructure	-	Infrastructure	Infrastructure	Infrastructure	Infrastructure	-
<b>Governance</b>	Governance	Governance	Governance	Governance	Governance	Governance	Governance
	Justice and Protection	Justice and Protection					
<b>Security, Protection, and Advocacy</b>	Physical Security	Physical Security	-	-	Security, protection, and Advocacy	Security, protection, and Advocacy	Security, protection, and Advocacy
<b>Human Capital</b>	Human Capital	Human Capital	Human Capital	Human Capital	Human Capital	Human Capital	Human Capital
<b>Social Capital/ Community Networks</b>	Social Capital/ Community Networks	Social Capital/ Community Networks	Social Networks	Social Environment	Social Capital	Social Capital	Social Capital
<b>Other Dimensions</b>	Knowledge and Understanding	Knowledge and Understanding	-	-	-	-	Spirituality
	Communication and Access to Information	Communication and Access to Information					-



Most of the dimensions identified in RILab target communities fit loosely into one of nine general dimensions of resilience, described in the figure. Nonetheless, how these dimensions manifest in local communities varies considerably. Each RILab has refined or modified definitions to highlight aspects that are specific or salient to its particular localized context. Further, as RILabs develop community-specific resilience frameworks (see Chapter VI), it is clear that the interconnections among dimensions (see Figure 3) and the role that certain dimensions play—as underlying causes of vulnerability; as immediate impacts and causes; as outcomes; or as factors that contribute to a supportive and enabling environment—are diverse.

Collectively, the RILab preliminary findings on dimensions of resilience yield general observations with regard to how dimensions are manifested; how they relate both to one another and to overall resilience and vulnerability; and what may emerge as the most likely entry points for innovation and intervention to boost resilience within a particular context:

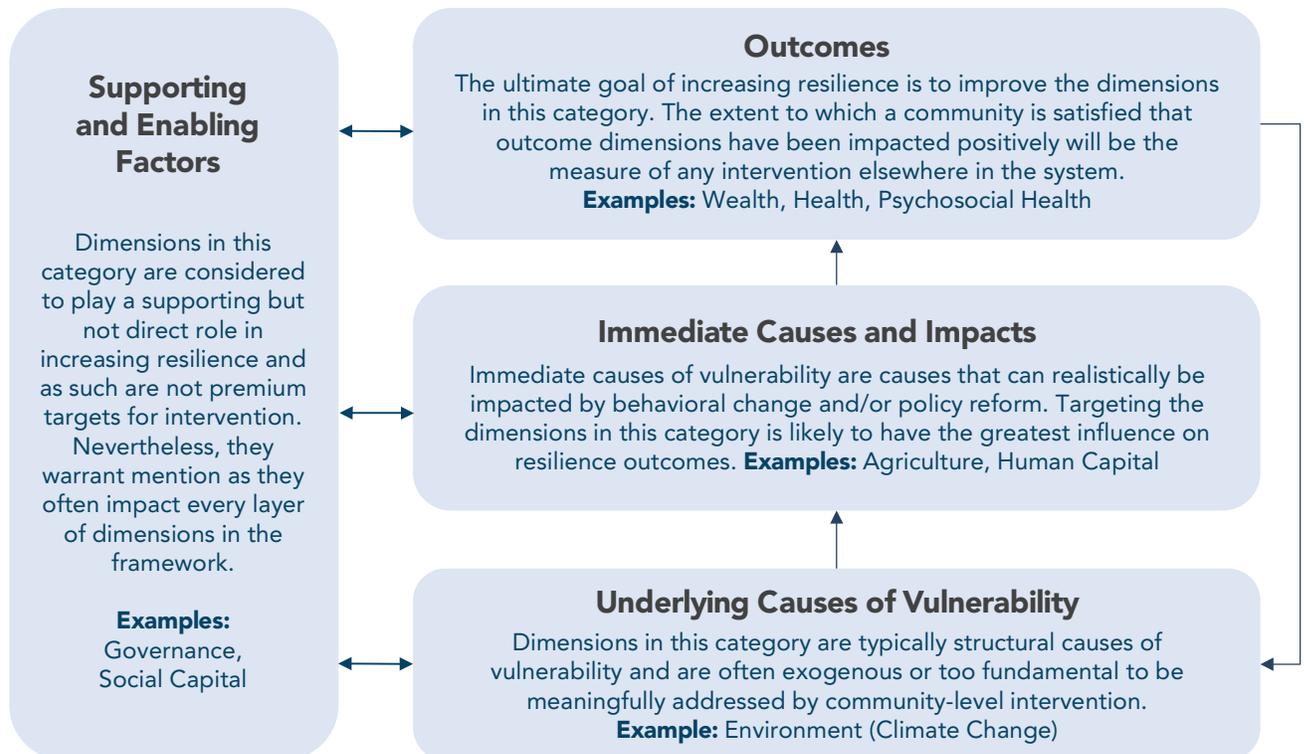
- In every target community, the constellation of dimensions most pertinent to resilience is unique. The most-salient aspects of those dimensions, and how they are expressed, vary significantly as well.
- Similarly titled dimensions still often vary greatly across contexts, both in what they capture and describe, and how they relate to resilience in that context (as an underlying driver of vulnerability, an immediate cause or impact, an outcome, or a supporting or enabling factor).
  - This suggests that metrics to quantify resilience will differ and will need to be carefully developed, tailored to the specific local context and constellation of dimensions in a particular community.

## Analyzing Pathways of Resilience: Building Context-Specific Frameworks

- Dimensions do not all equally contribute to a core, measurable concept of resilience; rather, they fall in various sequences or pathways that lead from underlying causes to outcomes. Thus, no specific component, layer, or outcome is “resilience.” Instead, the entire framework—the various components and layers taken together, interacting with one another—constitutes resilience.
  - This is in contrast to some resilience studies that have prescribed resilience dimensions and have sought to capture and consolidate these dimensions into a single resilience metric.
  - This also suggests that there is no single metric for resilience.
- Further, each framework presents a different pathway or set of connections among dimensions, with dimensions influencing different levels along these pathways.

- o Within the overall pathway/framework, dimensions tend to fall into one of four groupings or layers of influence in a general hierarchy that describes how RILabs assess a particular dimension's relationship to resilience and vulnerability: these layers include underlying drivers of vulnerability; immediate causes and impacts of vulnerability; outcomes; supporting and enabling factors. The framework is laid out in Figure 4.

**FIGURE 4. EXPLAINING THE RESILIENCE FRAMEWORK**



## Identifying Appropriate Entry Points for Resilience Innovation and Interventions

Through the resilience framework diagrams, the RILabs map relationships between dimensions of resilience and determine points in the system where interventions can be most effective.

Three things are important to note about these frameworks:

- It was determined that entry points are better informed by these hierarchical frameworks than by “flat” frameworks where all dimensions appear to contribute equally to overall resilience.
- A particular dimension or layer within the hierarchy may have a stronger or weaker influence on other dimensions; in some cases, two dimensions will be mutually reinforcing. Preliminary findings on these relationships are indicated by the arrows in the framework diagrams (which suggest causation or correlation with their directionality), but the RILabs’

understanding of these relationships continues to develop, and the interconnections between dimensions and layers will be continuously refined through qualitative and quantitative data and analysis.

- Most studies preliminarily identified the best entry points—that is, where interventions would be most effective—at the level of immediate causes and impacts: an intermediate layer that sits between underlying drivers of vulnerability and outcomes. While some RILabs identified potential entry points at the level of underlying causes, these generally were too large in scope to be programmatically feasible or testable within the RAN. Although interventions are generally designed with the aim of influencing outcomes, each intervention is likely to have an indirect effect on several dimensions in the framework. (For example, in Figure 4, if improved agricultural practices resulted in increased wealth as an outcome, social capital as a supporting factor might also increase, in the event that higher incomes lead to greater investment in education.)

It is important to emphasize that, despite the different pathways identified across the RILabs, positive outcomes of resilience can generally be understood as the extent to which community members report that they are (a) happy, (b) not poor (meaning they have at least sufficient wealth to meet basic needs), and (c) healthy.

These three aspects of resilience—which all mostly conform to the dimensions of psychosocial health, wealth, and physical health, respectively—were found in almost all RILab analyses, although in certain cases (in the case of wealth and health) were considered not only as outcomes, but also as immediate causes or effects, or as underlying factors. As such, the placement of these three dimensions on the frameworks (outcome, cause or effect, or underlying cause) should be understood to mean that they are primarily, but not exclusively, related to that particular layer.

The implication of this in terms of entry points for resilience-building interventions is important. Wherever a dimension is predominantly considered as an outcome, it may not be the optimal entry point if resilience-building interventions are to have the greatest impact (insofar as it may be more effective to cure the disease than to simply treat the symptoms). However, in contexts where a particular dimension has a more dynamic or nonlinear relationship with other dimensions—necessarily making their roles in building resilience capacity more complex—entry points in these dimensions may be more appropriate. For example, addressing the psychosocial dimension as an outcome of repeated flooding, while not without merit, may not be the most efficient way to improve overall resilience to flooding. However, in a context where the social environment plays a significant causal or aggravating role—a culture inured to violence, a social stigma related to HIV/AIDS—addressing issues related to psychosocial health may be more likely to have an impact on overall resilience. ■

# RILab Preliminary Findings

## *Context-Specific Resilience Frameworks and Opportunities for Resilience Innovation*

**THROUGH CONTEXT ANALYSIS, COMMUNITY CONSULTATION, PRIMARY DATA COLLECTION, AND QUALITATIVE ANALYSIS,** RILab teams singled out priority shocks and stresses within their target communities; identified sources of vulnerability and dimensions of resilience; and outlined the relationship among these various factors—the “pathways” to resilience. RILab preliminary findings are captured in “context-specific frameworks” that show schematically how particular dimensions relate to and influence community’s overall vulnerability and resilience to identified shocks and stresses. The vulnerabilities of the RAN target communities, as outlined previously in the report, vary greatly by region, country, and community.

Brief descriptions of RILabs’ preliminary findings follow along with schematic context-specific resilience frameworks. These descriptions are not intended to be comprehensive. More in-depth reports will be forthcoming during 2015, as RILab teams finalize their qualitative analyses and move to developing and testing innovations and interventions to strengthen resilience among target communities.

## Southern Africa

### **SOUTH AFRICA**

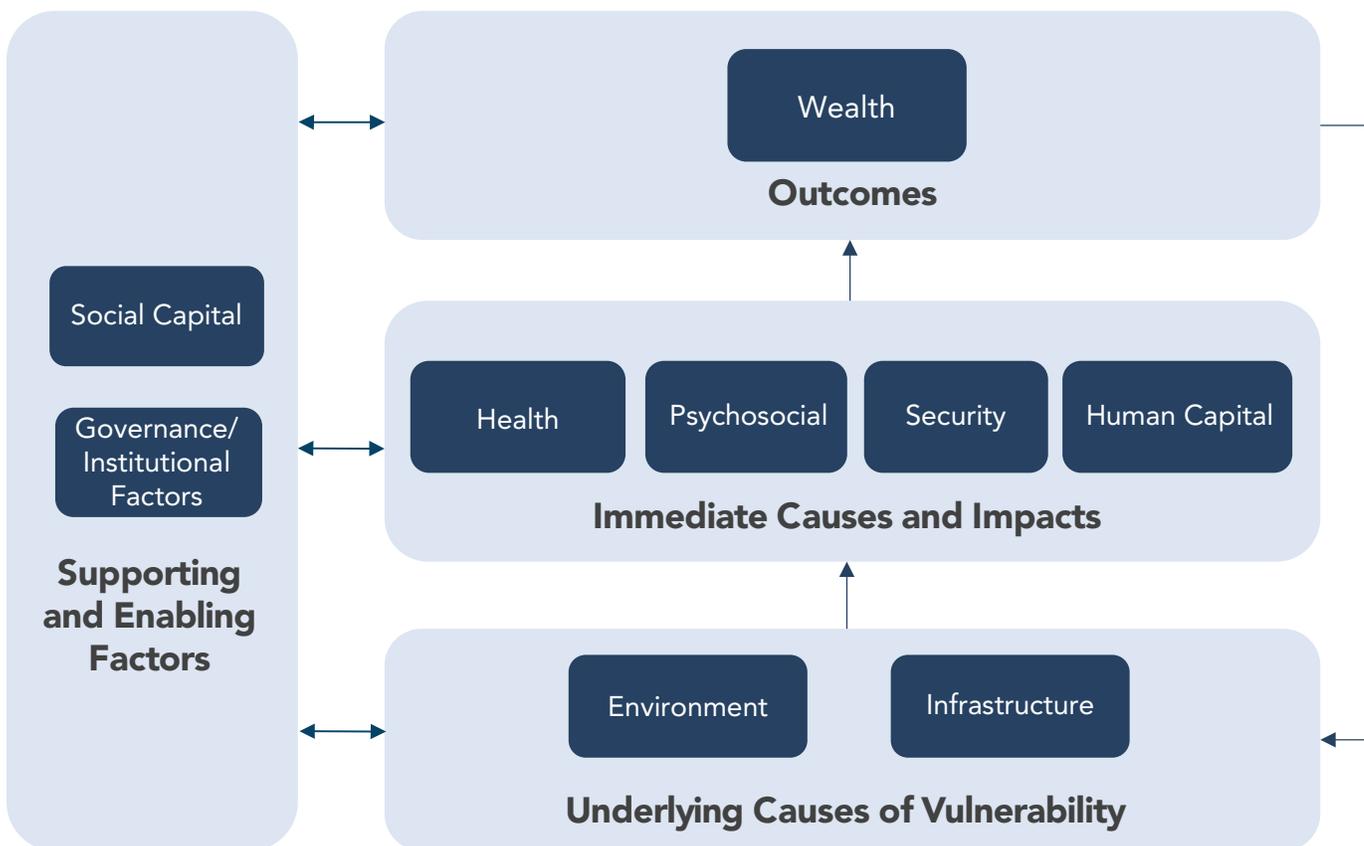
South Africa has more people living with HIV/AIDS than any country in the world. The Southern Africa RILab, housed within the University of Pretoria, chose to focus on resilience among HIV/AIDS-burdened communities in Limpopo Province, the poorest of South Africa’s nine provinces. More than 75 percent of Limpopo’s 5.2 million people live below the national poverty line.<sup>11</sup> The South Africa RILab team determined that HIV/AIDS and poverty are both causes and effects of one another, but that poverty is more damaging to overall community resilience. Treatment for HIV/AIDS can be costly to the point that it impoverishes the infected, but the risk of acquiring the virus is more often linked to the effects of poverty: lack of education, limited employment opportunities, and limited access to preventative health services.

### Pathways of Resilience and Vulnerability

At the base of Figure 5 are the underlying causes of vulnerability, as identified by communities. Unpredictable weather patterns and extreme climate variation combine with unsustainable agricultural practices—all captured by the *environment* dimension—to result in food insecurity and unemployment (found at the top of the figure and categorized as an outcome). Inadequate access to basic infrastructure—including health care, water, proper transportation, recreational facilities, libraries, and police—leads to few job opportunities and a lack of education and is considered a fundamental driver of many of the community’s major stresses, including high crime rates; subsequent fear, insecurity, and a lack of faith in the justice system; and the dearth of economic opportunity that can cause community members to resort to drug abuse or commercial sex work, increasing the risk of HIV/AIDS transmission.

Communities in Limpopo, nonetheless, actively work to overcome the many and varied challenges they face. Community savings groups known as *stokvels* and burial societies were identified as positive adaptations, supporting both the social capital and wealth dimensions of resilience. The money paid out from the *stokvels* can enable households to purchase groceries

**FIGURE 5. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN LIMPOPO PROVINCE, SOUTH AFRICA—POVERTY AND HIV/AIDS**



in bulk; to finance income-generating projects; or to build up savings. These groups can also be used as a platform for addressing issues related to HIV/AIDS, pervasive in the *psychosocial* and *health* dimensions. Other adaptive strategies include small irrigation projects, undertaken by households in the face of dry spells, and targeted, government-supplied social grants, which appear to have had a positive effect on poverty and inequality.

By contrast, the data revealed that communities are also adopting strategies to cope with poverty and a lack of education that do not necessarily strengthen resilience over time. For the most part, these involve temporary forms of employment: working construction on governmental infrastructure projects that provide seasonal employment, or migrating to Johannesburg for similar short-term opportunities. Often, these jobs do not allow workers to build job skills or secure long-term employment, damaging their prospects for stable incomes and livelihoods.

### **Potential Entry Points for Resilience Building**

Because few in Limpopo possess either productive land or opportunity to secure regular employment, suggested interventions tend to focus on ways to promote entrepreneurship, which can serve as a way to build human capital, create employment, and increase capital ownership among the historically dispossessed. Efforts will target existing business potential and help bring low-cost small business ideas to life.

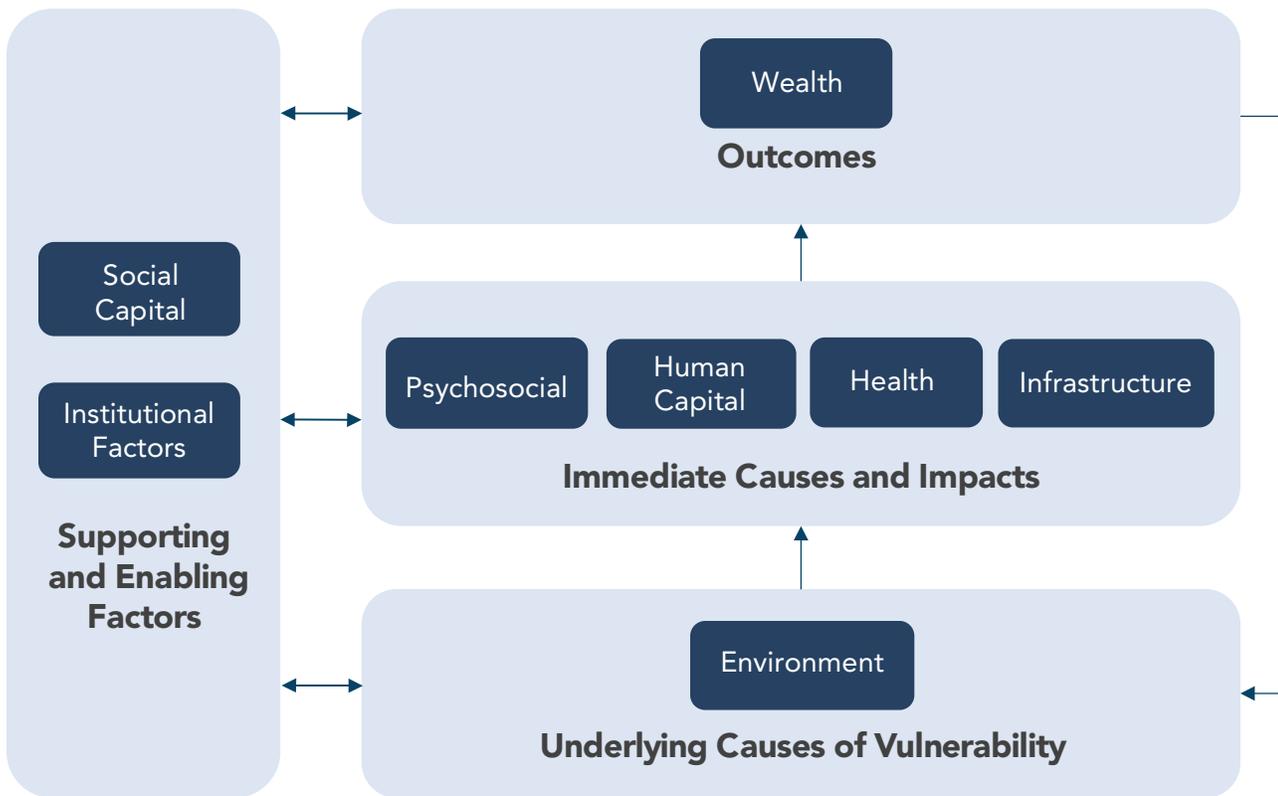
## **MALAWI**

The Southern Africa RILab partner in Malawi, based at Lilongwe University of Agriculture and Natural Resources, identified droughts and floods as leading sources of vulnerability in its target communities in Chikwawa District. Community members, whose economy activity largely revolves around agriculture, noted that the environmental challenges they face put strains on food security, health, and nutrition, which all have implications for the community's ability to accrete social and human capital. Compounding the issue, Chikwawa has an HIV/AIDS prevalence rate that exceeds Malawi's national average—a national average that ranks near the top in the world. One result of the HIV/AIDS epidemic in Malawi has been an increase in the proportion of female-headed households, whose earning power—and by extension whose adaptive capacity in the face of environmental shocks—is greatly diminished by having only one adult to generate income.

### **Pathways of Vulnerability and Resilience**

Because rain-fed agricultural production is their main source of income, communities in Chikwawa are particularly vulnerable to the effects of droughts and prolonged dry spells—captured by the *environment* dimension in Figure 6—which lead to food insecurity and poverty. Community-wide dependence on subsistence agriculture is a result of inadequate educational and employment opportunities, and this dependence harms resilience, as agricultural production is limited severely by environmental stress, a lack of irrigation infrastructure, and the scarcity of productive labor, particularly for HIV/AIDS-affected households.

**FIGURE 6. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN CHIKWAWA DISTRICT, MALAWI—DROUGHT, FLOODS, AND HIV/AIDS**



Community members report that both local and international NGOs have been instrumental in helping to manage the effects of the drought and floods. Such organizations not only provide relief items during floods or drought, but also implement programs that aim to provide long-term resilience, including development of irrigation infrastructure; training of communities on flood early warning and preparedness; provision of drought-tolerant crops, such as cassava; and construction of dykes to protect household and community infrastructure from floodwaters. In the short term, community members cope by selling available labor to neighboring farms or by working at a nearby sugar plantation.

**Potential Entry Points for Resilience Building**

It has been determined that system interventions must make agricultural production more profitable and less risky and decrease community dependence on agriculture for income. Possible ideas include expanding into technology-based enterprises (such as mobile-based financial services), green energy, and even establishing businesses that target communal goals, such as providing early flood warnings—a venture that would not only generate income for those directly involved in the enterprise, but would protect the yields (and incomes) of community members affected by climate variability.

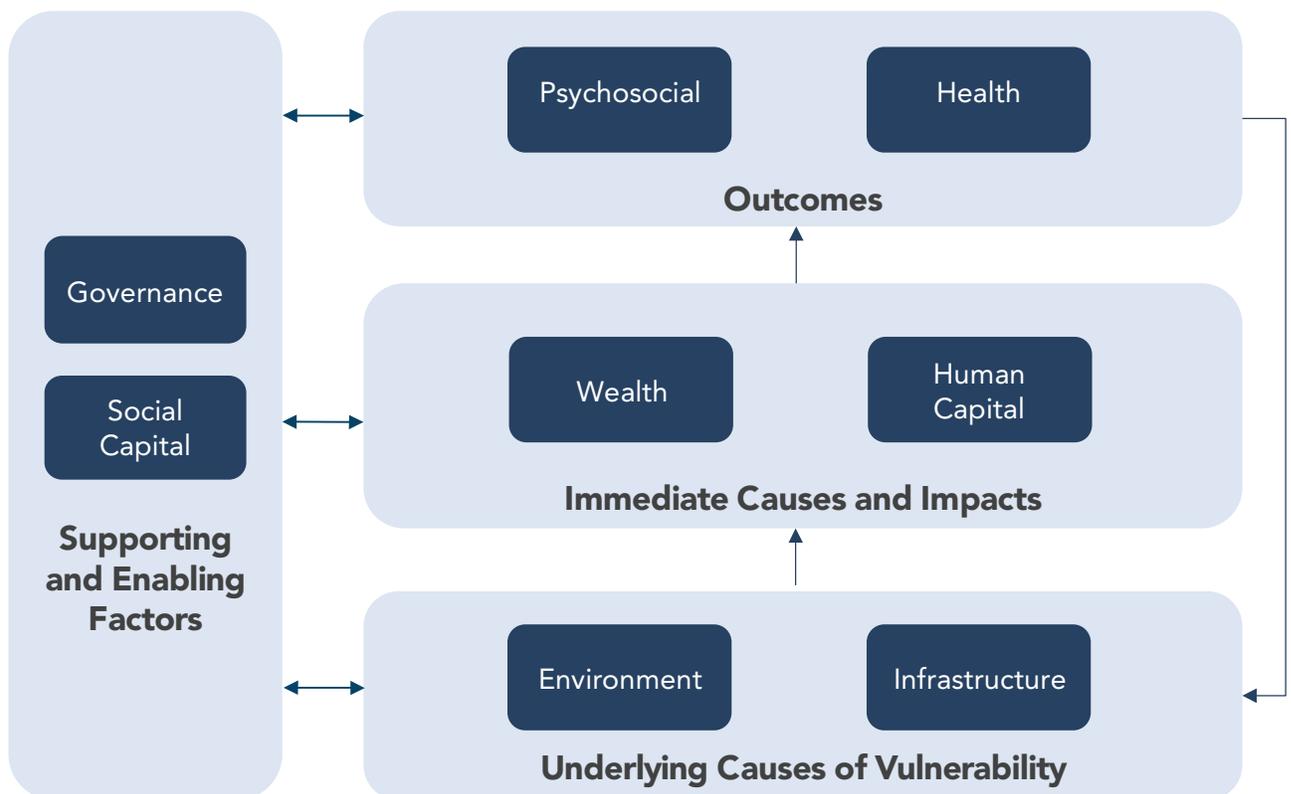
## ZIMBABWE

The Southern Africa RILab's work in Zimbabwe examines the complex relationship between food insecurity, poverty, and HIV/AIDS by focusing on the resilience capacity of female-headed households, a particularly vulnerable subset of the population. Research to date has been conducted in the Beitbridge District of the Matabeleland South province: the most HIV/AIDS-affected district in Zimbabwe's most HIV/AIDS-affected province, where prevalence rates exceed 20 percent of the adult population.<sup>12</sup>

### *Pathways of Vulnerability and Resilience*

Community respondents characterize HIV/AIDS and its effects on household-level decision-making as a major catalyst for disrupted livelihoods. Of particular concern is the trend of men migrating to South Africa in search of wage employment but not sending back remittances. Although drought in Beitbridge—the country's driest region—has understandably caused men to look for work elsewhere, this is considered one of the most damaging coping strategies. Not only does it displace men, increase dependence on irregular employment, and separate families, but it has also meant that women are too often left alone to support their families, occasionally resorting to commercial sex work and thereby increasing risk of infection and transmission, as reflected in the negative health outcomes at the top of Figure 7. Those already affected by HIV/

**FIGURE 7. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN BEITBRIDGE DISTRICT, ZIMBABWE—FOOD INSECURITY, POVERTY, AND HIV/AIDS**



AIDS sometimes cope by selling off livestock to pay for treatment and to afford more time to care for sick relatives.

In Zimbabwe, although the coping strategies with potentially negative impacts appear to predominate, community members also manage to positively adapt to the challenges they face. Poverty-alleviation options are limited, but women and children supplement their diets and household incomes with produce from community gardens. Community members also pool resources to pay for children's tuition and to form support groups, sometimes through the church, to provide comfort to those affected by HIV/AIDS. Such support groups reportedly help reduce stigma and discrimination, in turn improving access to treatment and increasing one's willingness to be tested.

### **Potential Entry Points for Resilience Building**

Because livelihoods in Beitbridge depend predominantly on livestock production, suggested interventions will seek to build on the existing capacity in this area. Projects may include establishing improved livestock-marketing facilities and coordinated sales in rural areas, as well as the development of platforms to disseminate information to small-scale producers about prices and market requirements. An additional proposal is to start farmer business schools within the communities to teach farmers about agribusiness.

## Horn of Africa

### **ETHIOPIA**

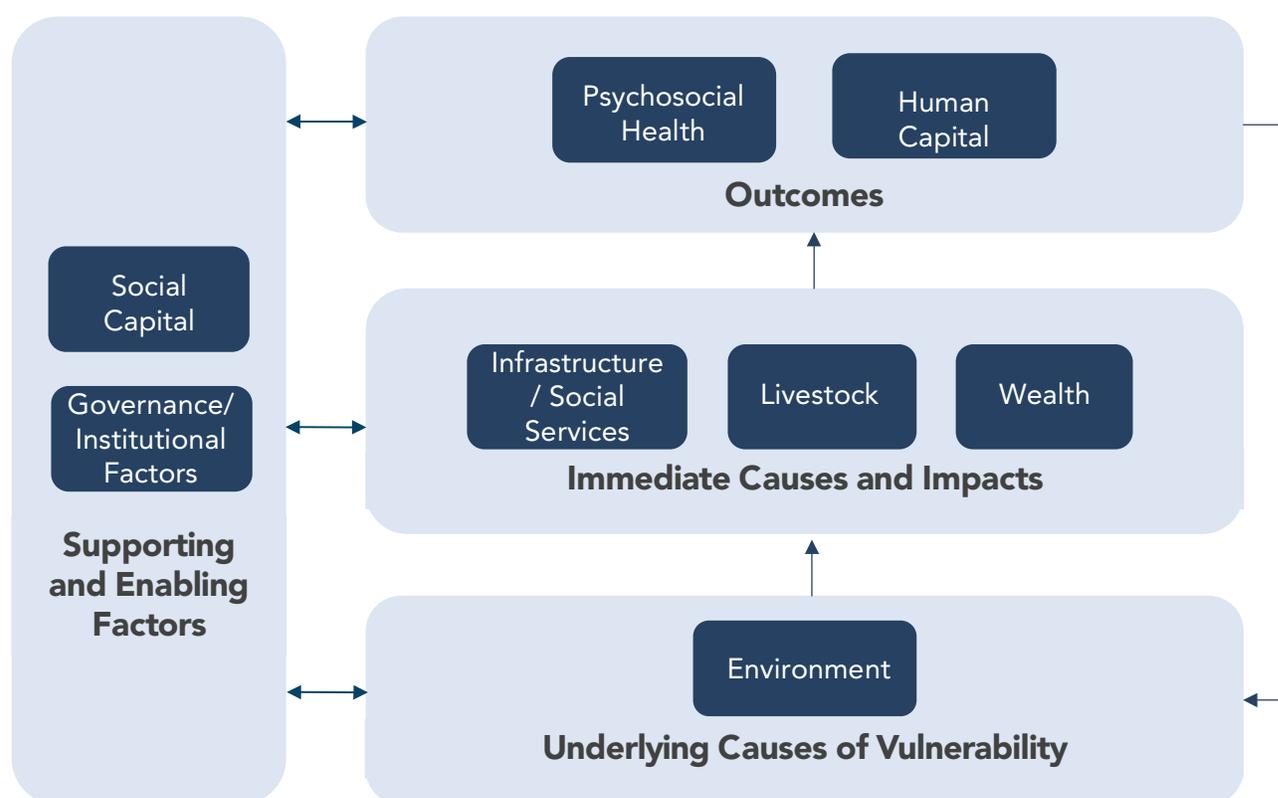
For decades, Ethiopia experienced catastrophic human losses as a result of hunger and food insecurity, often brought on by seasons of prolonged drought that bring agricultural production to a standstill and leave livestock herds depleted. Climate change, food insecurity, sectarian conflict, poor management of land and water, depletion of key ecosystems, and the loss of biodiversity have driven Ethiopia repeatedly into food crises among the worst in the world. Jimma University, as part of the Horn of Africa RILab, focused on the impact of cyclical drought and climate vulnerability on the Borana pastoralist communities in Arero and Dahass, two Woredas (districts) in the Borena Zone that are highly dependent on cattle and livestock for subsistence. The Borena Zone has a long history of contending with recurrent drought, but the cycle of recurrence has accelerated in recent years. Of the dimensions most likely to undermine resilience, environmental stress is considered the most important (see Figure 8), although livestock management practices, lack of wealth, and lack of physical infrastructure all emerged as aggravating factors or immediate causes.

### **Pathways of Vulnerability and Resilience**

Recurrent drought—represented by the *environment* dimension—was identified as the underlying cause of the Borana's difficulties. Excessively arid land negatively impacts the health and durability

of livestock, upon which the Borana rely heavily for food and income. In many cases, community members try coping with the potential loss of livestock resulting from drought by keeping large herds, preferring a greater margin for error. However, it appears that these large herds are leading to overgrazing and environmental degradation, which then leaves too little arable land to produce feed for existing livestock. To address the issue of hyper-arid land and depleted herds, many Borana also temporarily relocate. Although there are some benefits to mobility,<sup>13</sup> respondents warned of the potential for resource competition to arise between newly proximate groups and lead to tension or bloodshed.

**FIGURE 8. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN OROMIA REGION, ETHIOPIA—RECURRENT DROUGHT**



In sharp contrast to the ways people negatively cope, the Borana also employ adaptive strategies that signal a considerable measure of resilience already in place. Community members have observed exceptional pastoralists shifting away from the traditional emphasis on large herds of cattle and instead breeding drought-resistant cattle that can be kept in lower quantities. In that vein, some innovative pastoralists also began to diversify their herds and, by extension, their potential sources of income. As a complement to these changes, community members responded effectively to the problem of overgrazing by employing the local practice of *kaloo*, which refers to the temporary enclosure of grazing land to protect it for times of need; and

have positively addressed the broader problem of soil erosion by terracing and planting trees. Another adaptive mechanism that appears to be paying dividends for pastoralists in the Borena Zone is a livestock insurance system, currently being implemented by an NGO to the community's satisfaction. To combat water scarcity, community members lauded the government for digging deep wells to collect the intermittent rainfall, which has increased access to ground water. They likewise commend the development of reservoirs to improve water access and irrigation.

### **Potential Entry Points for Resilience Building**

Because the livelihoods of Borana pastoralists are dependent on the availability of pasture and production of fodder—which, in turn, depend highly on the availability and proper management of water sources—primary points of entry in the system are certain to address the challenge of water scarcity. Suggested interventions will provide for safe water supplies and the establishment of proper water resource management and household water treatment methods, both currently lacking in the Borana communities.

## **SOMALIA**

Similar to neighboring Ethiopia, Somalia finds itself in seemingly perpetual contention with recurrent drought and famine, exacerbated by decades of armed conflict and poor governance. One manifestation of this is the internal displacement of roughly 1.3 million people in Somalia, one of the highest totals in

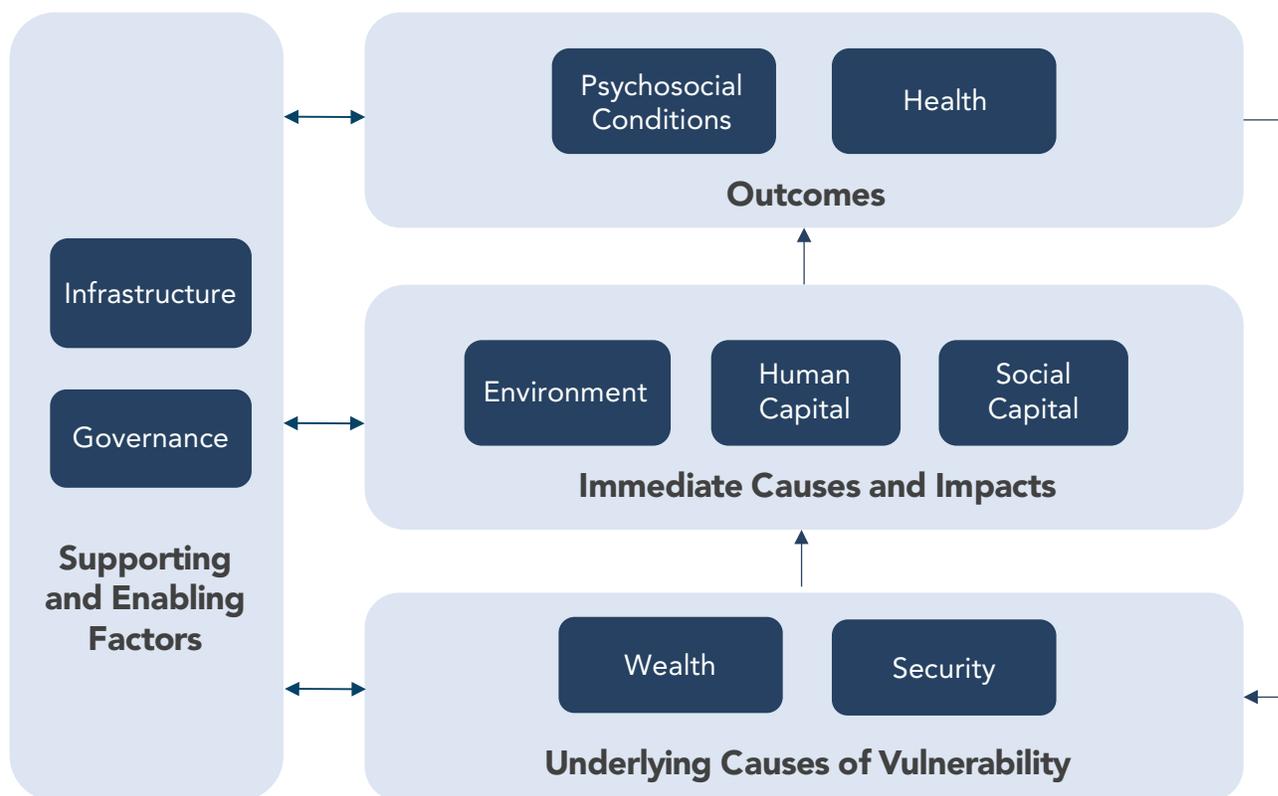
the world. Horn of Africa RILab partner Benadir University, located in Somalia's capital Mogadishu, focused on three communities—Hodan, Hamar Weyne, and Wadajir—in its home region of Benadir that together contain the country's highest concentration of camps for internally displaced people (IDPs) and face tremendous challenges trying to provide security, employment, and access to basic services. Researchers consider chronic internal displacement to be the greatest threat to increased resilience, its underlying causes being recurrent conflict (itself driven by poor governance, clan rivalries, and corruption) and drought (see Figure 9). Additionally, low levels of human and social capital (and particularly eroded social networks) were thought to be worrying dimensions in the system, predisposing individuals to destructive behavior.

### **Pathways of Vulnerability and Resilience**

Perhaps most troubling for the Somali target communities is that neither conflict, drought, nor the incapacity of the state can be addressed strictly at the community level. However, shifts in community behavior can serve to mitigate or exacerbate these fundamental causes of chronic internal displacement. Whereas relocation appears to be a negative coping mechanism in Ethiopia, in Somalia it registers as a positive adaptation, as the existential threats in some areas are simply too great to ignore. In some cases, clan leadership can try to broker peace, but more commonly community members are forced

to migrate internally to safer zones or to IDP camps, searching for security and economic opportunity. Communities also adapt through migration by ensuring that their livestock are adequately fed, with relocations based on the seasonal availability of pasture and water. This willingness to relocate—also done to find work in nearby villages and cities—can result in higher incomes to afford health care, water, and food, and leads to wealth sharing among community members, especially of livestock, remittances, and community savings, such as rotating saving schemes.

**FIGURE 9. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN BENADIR REGION, SOMALIA—CHRONIC INTERNAL DISPLACEMENT**



Strategies adopted to cope with the effects of conflict often include illegal and informal activities. Some communities survive through voluntary and involuntary support for armed groups, and families will marry their daughters to rebels to prevent persecution or destruction of their property. More benign strategies that nevertheless hamper resilience include borrowing money or relying too heavily on donations.

In place of strong central governance, Somalia has seen the rise of local, informal polities and traditional, clan-based governance and justice systems, which appear to have a complicated effect on resilience. On one hand, these systems have provided at least some measure of governance in a context where formal, government-established institutions are weak, helping to ensure security and deliver a few essential services; and clan leaders do provide representation,

protection and support, mediation, and nonviolent conflict management—in sharp contrast, according to some of those interviews, to the existing government, which is perceived to be incapable and corrupt. On the other hand, these local polities lack the capacity to provide all the basic services communities need, including access to nutritious food, health care, education, clean water, sanitation facilities, and shelter. The dependency of communities on subnational authorities contributes to their susceptibility to shocks. This also limits their ability to build resilience to shocks because they cannot guarantee the security and long-term stability necessary to attract development and investment to create jobs and services. Moreover, politically weak clans can be abused by wealthy and more-powerful clans since the arbitration schemes are informally based on clan.

### **Potential Entry Points for Resilience Building**

The potential interventions to increased resilience to chronic internal displacement tend to address the governance dimension, all in support of state-building and building the capacity of informal polities and traditional authorities to create conventional state authorities. Another potential entry point is the environment dimension, where communities reported a need for improved environmental conservation and disaster management.

## **Eastern Africa**

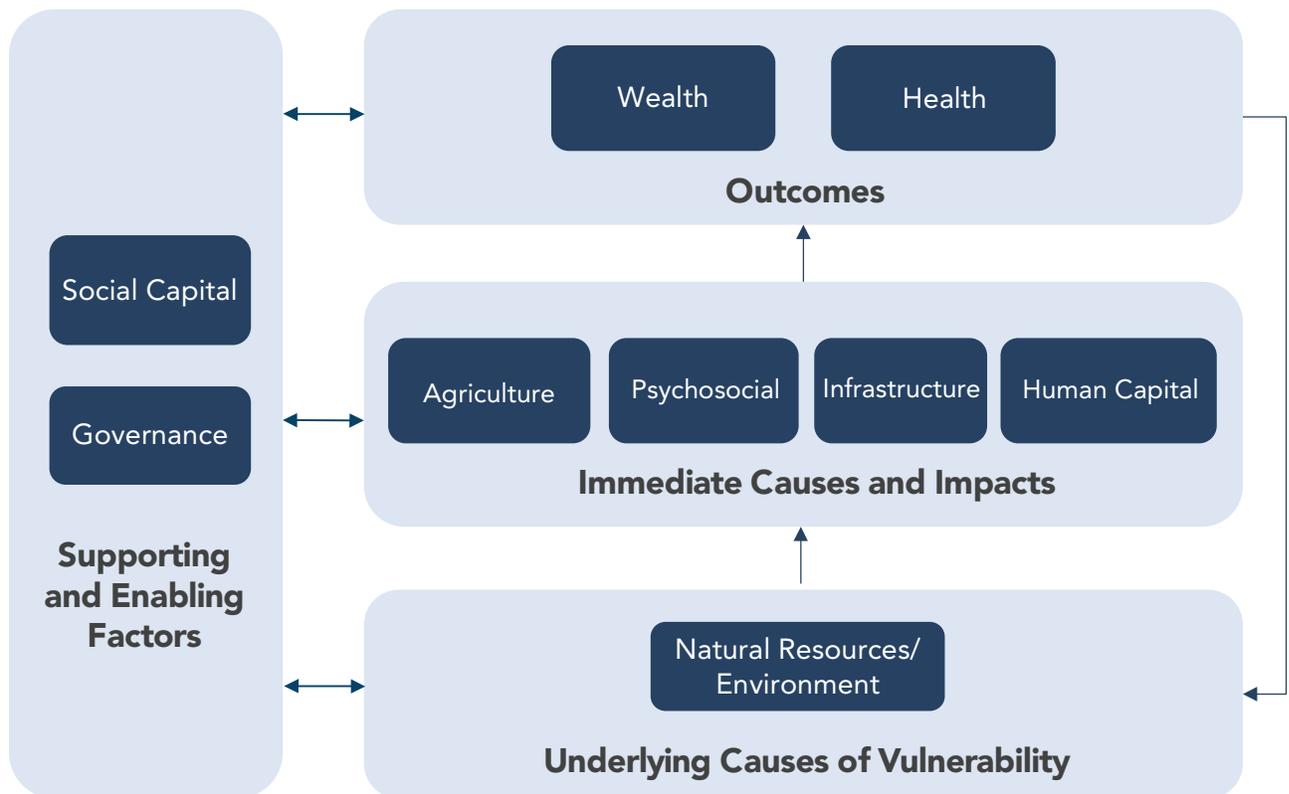
### **UGANDA**

Makerere University, which is host to the RAN Secretariat and serves as the Eastern Africa RILab's lead partner, is conducting research in Uganda to investigate communities' vulnerabilities to the threats that climate variability and the recovery from chronic conflict pose to development. Target communities are spread across four regions and split into two groups. In the first group, focused on climate variability, the RILab interviewed community members in the Albertine region in the west, where recurrent epidemics and floods are common; the Teso region in the east, where communities contend with floods and drought; and the Mt. Elgon region, also in the east, where the challenges are floods and landslides. In the second group, where chronic conflict was the research focus, the RILab targeted the northern region of Uganda, interested in particular in the slow pace of socioeconomic recovery. The RILab produced a framework for each issue.

### **Climate Variability in the Albertine, Teso, and Mt. Elgon Regions**

In the Albertine, Teso, and Mt. Elgon regions, respondents in Uganda believed the underlying cause of their vulnerability to be climate variability and its effects (see Figure 10), land degradation chief among them. The communities surveyed are dependent on subsistence agriculture for their livelihoods and any environmental destruction by adverse weather events (such as floods, drought, and landslides) is likely to put a strain on existing resources. Community members identified the dimensions of human capital, infrastructure, and psychosocial health as direct contributors to the resilience outcomes they are concerned with most: wealth and health. Governance and social networks (social capital) were identified as enabling dimensions that influence and support levels of human capital, infrastructural development, and psychosocial health.

**FIGURE 10. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN ALBERTINE, TESO, AND MT. ELGON REGIONS, UGANDA—CLIMATE VARIABILITY**



In the face of recurrent floods, some community members adapt by relocating to less flood-prone areas or by using higher-quality materials to build homes that can withstand severe weather. Others work to maintain levels of agricultural production by planting fast-yielding crops or terracing to prevent soil erosion. A government program run by the National Agricultural Advisory Services (NAADS) was credited with helping community members across the three regions improve farming methods, while providing funding for agricultural inputs. Respondents also highlighted several community initiatives beneficial to them, such as cofunding efforts by the community to construct and maintain schools, water sources, and other types of infrastructure, and to enforce the laws against construct unsanctioned latrines, which contaminate the water supply.

Nevertheless, some community members reported having to cope with climate variability in ways that will likely carry negative long-term consequences. Namely, they mentioned engaging in deforestation to raise household incomes, even with knowledge of its effects on the environment, noting that the demand for charcoal and wood among schools, factories, and individual consumers is significant. Communities have also encountered difficulties when trying to diversify their sources of income; although animal husbandry can be gainful, community members named cattle rustling as a major obstacle to the reliability of livestock production.

### **Potential Entry Points for Resilience Building**

As demonstrated in the framework, the agriculture and infrastructure dimensions are key entry points for resilience interventions, given that so many communities in Uganda depend on farming. Solutions that increase agricultural yield on the farm and those that support farmers to access and have leverage in the market are paramount. Community members expressed their disappointment in several agricultural inputs—such as low-yield seeds, improved seeds that are not replantable, lack of machinery on the farm, fragmented land, and barren soils—skewed markets that only favor intermediaries; low prices for produce; and poor road infrastructure, hindering produce transportation.

### **Chronic Conflict in Northern Uganda**

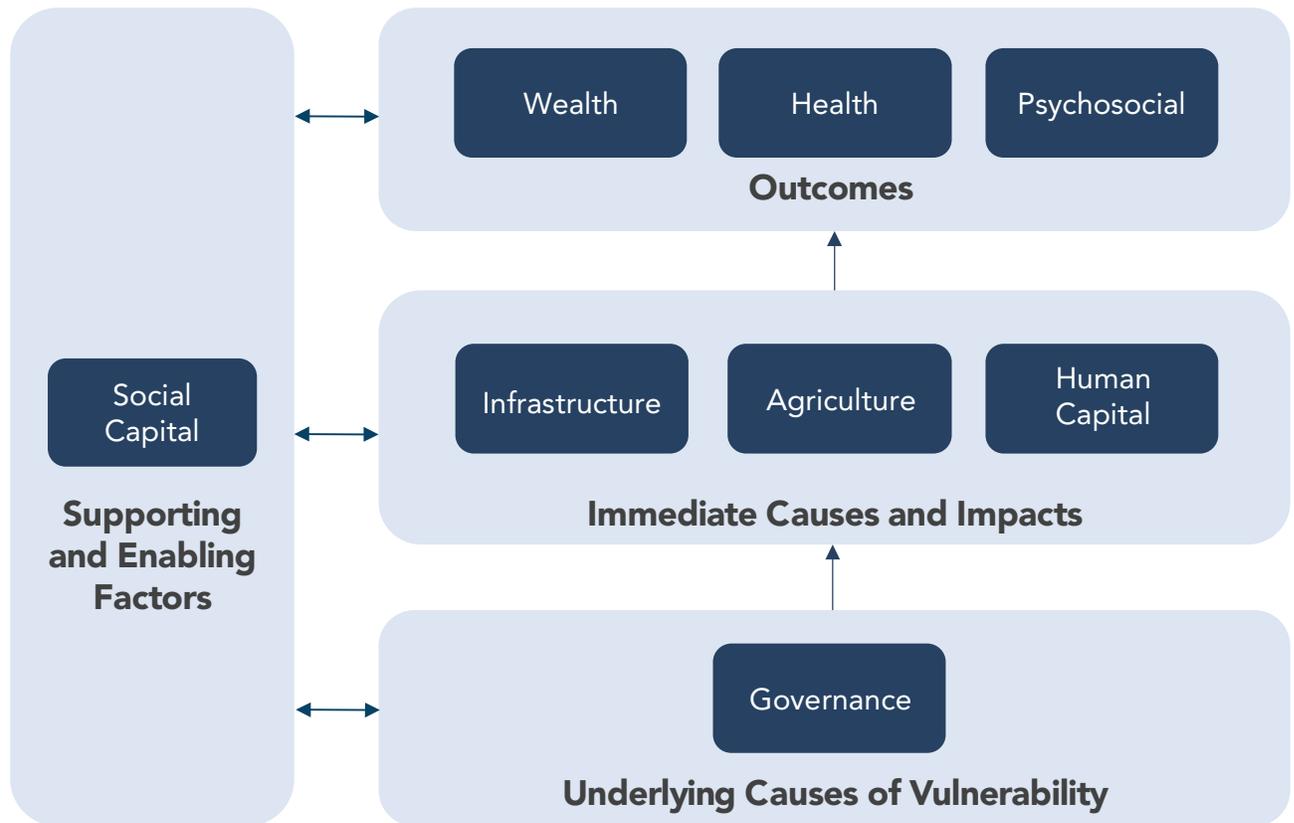
At the height of Northern Uganda's 20-year armed conflict, which spanned from 1986 to 2006, nearly two million Ugandans were displaced. Estimates of those killed by the Lord's Resistance Army during that span range in the tens of thousands, and a comparable number of children were abducted by the rebel group, forced to join the ranks, and commit atrocities on its behalf. Less than a decade removed from the conflict, the region is still trying to recover, with many of its districts focused on addressing the high levels of poverty and lingering psychosocial effects of war.

### **Pathways of Vulnerability and Resilience**

Many of those interviewed in communities in Pader, Lamwo, and Lira, the three northern districts surveyed, attribute northern Uganda's challenges to the quality of governance, as shown in Figure 1<sup>1</sup>. Although chronic armed conflict and climate variability are distinct problem sets, the respondents in target communities frequently identify similar drivers of vulnerability: lack of social services, corruption, and the need for a mechanism to resolve land disputes—all of which, ideally, fall within the purview of the government, thus its position in the framework as a fundamental cause. To mitigate the lack of effective governance and fully recover from the effects of the 20-year conflict, most respondents agreed that the priorities should be to build physical infrastructure, increase access to formal education, and decrease dependence on agriculture. Without effective governance, as shown in the outcomes level of the framework, communities contend with deep poverty and report significant deficits in physical health and psychosocial well-being.

Current government programs came up regularly in discussions, particularly those administered by the National Agricultural Advisory Services (NAADS). In some cases, they were characterized as positive adaptations, providing modified agricultural inputs to combat the effects of climate variability, such as fast-yielding and drought-resistant seeds. And through the process of sensitization, some communities have successfully adopted indigenous, drought-resistant crops that include sorghum, maize and cassava, as well as farming practices that improve yields. However, government programs were in some instances criticized for corruption, for aiding only selective beneficiaries, and for not always providing high-quality agricultural inputs. To the extent that communities viewed a growing dependence on these and similar programs,

**FIGURE 11. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN PADER, LAMWO, AND LIRA DISTRICTS, UGANDA—CHRONIC CONFLICT**



and on international aid and relief more generally, the receipt of various forms of assistance is ultimately viewed as a coping strategy. Compounding the problem is the trend of resettlement. As the security situation has improved, displaced families have begun returning home to lands that have since been claimed by others, leading to disputes for which there is no clear, legal resolution. According to respondents, until the government has the capacity to resolve land disputes, the outlook for dependable agricultural output among resettled populations will remain uncertain.

## **RWANDA**

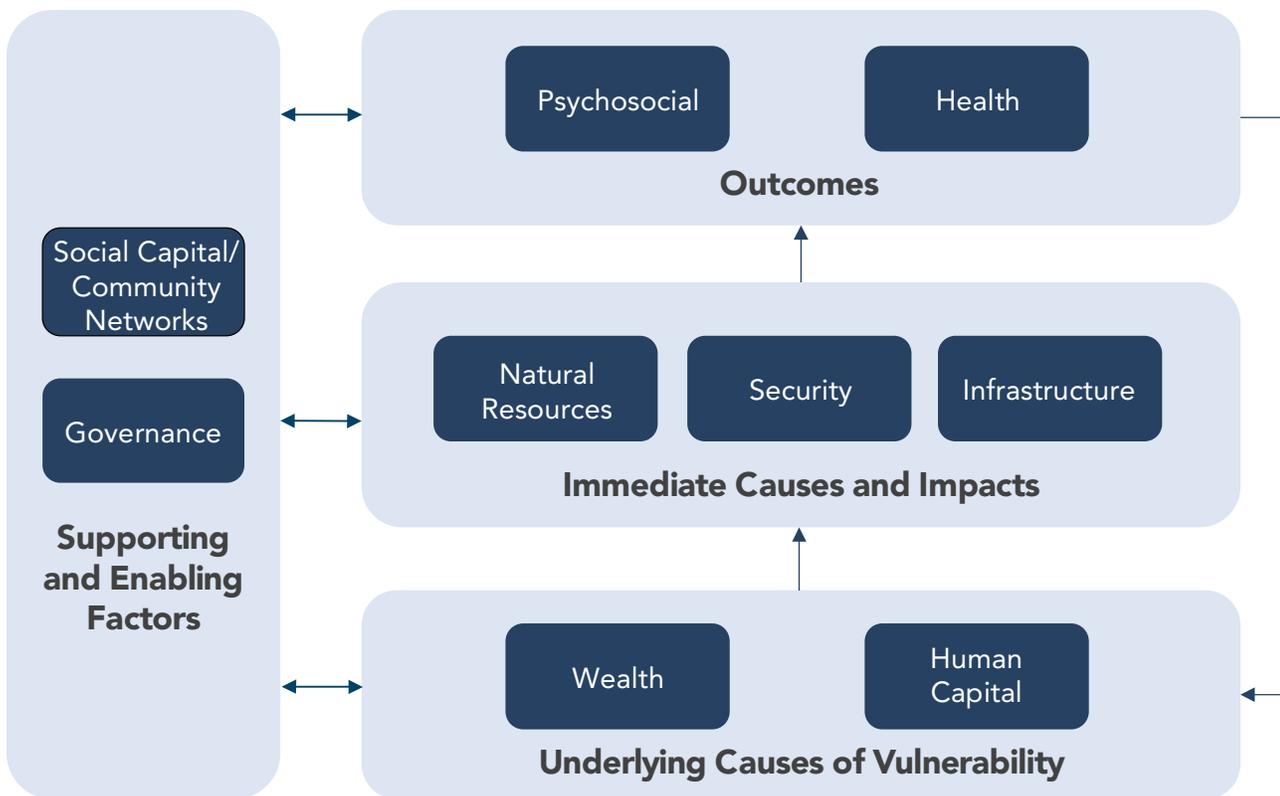
In Rwanda’s northern and western districts, the rainy seasons are becoming both shorter and more intense—a devastating combination that has led to drought in some areas and floods and landslides in others, leaving crops, homes, and physical infrastructure at constant risk of destruction. Communities in the districts of Musanze, Nyabihu, and Rubavu reported to researchers at the University of Rwanda, an Eastern Africa RILab partner, a clear relationship between poor farming practices, climate variability, and poor infrastructure, characterizing all as immediate causes and subsequent immediate effects of flooding and landslides. Beyond issues of climate variability and unpredictability of rainfall (and floods), respondents cited other issues such

as deforestation, construction projects that have redirected water flow, poor farming practices, and lack of anti-erosion practices as increasing their risk. But the damage resulting from the last landslide often diminishes a community’s capacity to adequately prepare for the next one.

**Pathways of Vulnerability and Resilience**

Although much of the discussion in Rwanda centered on the effects of floods and landslides, community members also identify the underlying causes, encapsulated by the *wealth* and *human capital* dimensions (Figure 12). Both are contained within the cycle of poverty, where poor families cope by taking their children out of school to work, or are simply unable to afford school fees. This situation results in undereducated populations that are unable to engage in more diversified livelihoods and continue to live and practice agriculture in vulnerable areas. Respondents are aware of national plans to reduce the effects of floods and landslides in the area, but argue that the communities do not have the financial means to follow those plans, which include resettlement to safer areas, fortifying homes, creating terraces for farming, and tree planting. The government is also credited with advocating for affected communities to external groups, particularly NGOs, to improve infrastructure and flood and landslide mitigation techniques.

**FIGURE 12. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN MUSANZE, NYABIHU, AND RUBAVU DISTRICTS, RWANDA—FLOODS AND LANDSLIDES**



Because households rely on year-round crop production for income and sustenance, they are unable to let fields lie fallow and lack means to develop terrace farms, a reliable landslide mitigation technique. As a result, soil quality is diminished and the agricultural output likewise suffers. At the national level, deforestation; stream deviation due to construction projects; eradication of stream-bank stabilizing banana plants due to infection; and certain agricultural practices have increased the frequency and severity of floods and landslides.

Focus group participants and key informants discussed mainly the *governance* and *social networks* dimensions positively for their role in providing support to adaptive strategies, but did mention that the government can sometimes burden communities through excessive taxation, school fees, and medical insurance costs.

### **Potential Entry Points for Resilience Building**

Suggested interventions at this point tend to relate to the *agriculture*, *environment*, and *infrastructure* dimensions, mainly revolving around water management techniques, improved agricultural and land management techniques, improved quality home construction, and tree planting. In all cases, suggested interventions have a common theme of protecting communities from the effects of severe weather and increasing wealth.

## **DEMOCRATIC REPUBLIC OF CONGO**

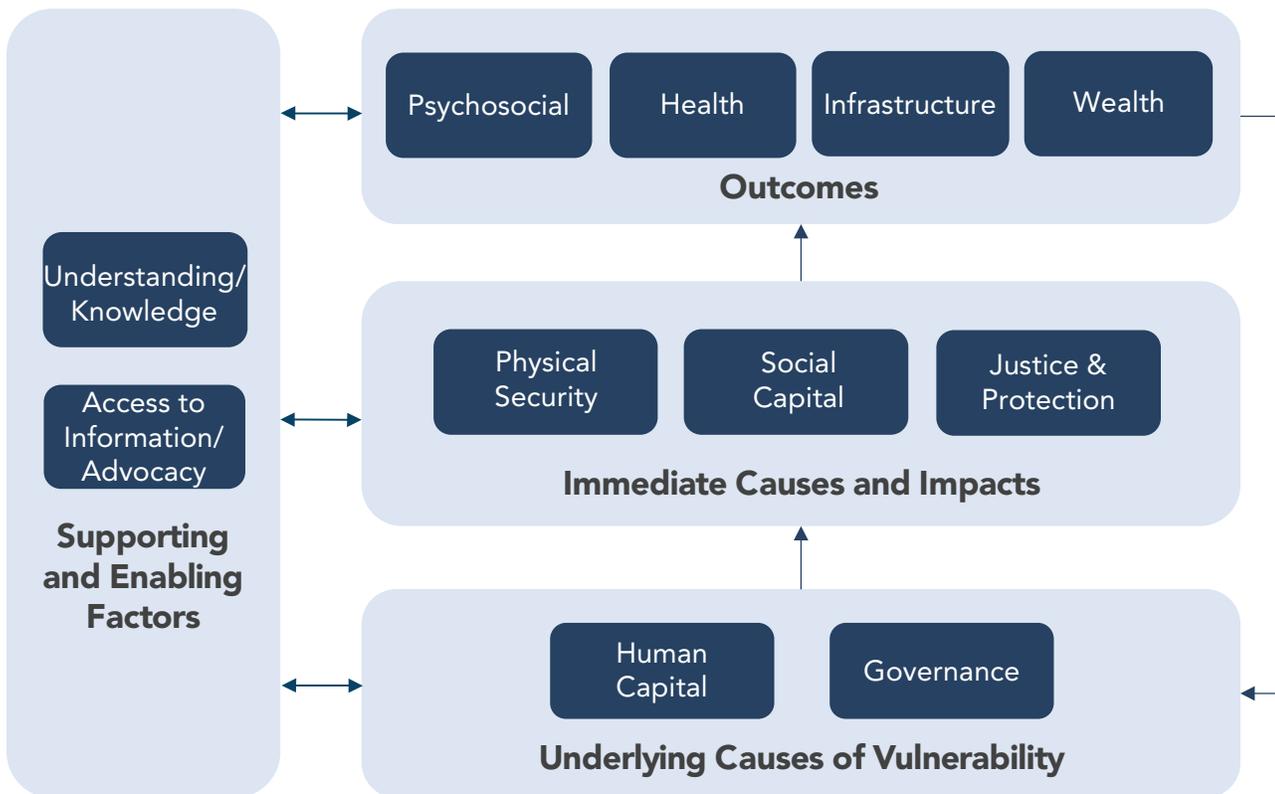
Since 1998, an estimated 6 million people have died as a direct or indirect result of conflict and insecurity in the eastern region of the DRC. An estimated 2.9 million are internally displaced, leaving survivors to contend with one of the worst humanitarian crises in the world, with high levels of disease and malnutrition. The high prevalence of sexual and gender-based violence (GBV) in DRC is among the most devastating manifestations of insecurity. According to one estimate, more than 1,150 women are raped each day in DRC<sup>14</sup>—staggering rates that leave in their wake physical injuries, unwanted pregnancies, sexually transmitted diseases, and incalculable psychological trauma.

RILab research was conducted in the North Kivu and South Kivu provinces and focused on resilience in the face of conflict (see Figure 13) and gender-based violence (see Figure 14). The same focus groups and set of key informants were asked about both issues and, as a result, the framing of both issues is similar, with the same 12 dimensions of resilience identified. However, the relationships between the dimensions differed slightly, as seen in the two frameworks. Researchers found it worth noting how rarely respondents mentioned the competition for natural resources or the lack of infrastructure as drivers of vulnerability. Although both are often seen as important to external observers—a view the researchers share—it appears that neither is at the forefront of community members' minds.

### **Pathways of Vulnerability and Resilience**

For both contexts, the security dimension was central. Respondents spoke of their immediate danger—the prospect of death, rape, arson, and the destruction of infrastructure—and of

**FIGURE 13. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN NORTH AND SOUTH KIVU PROVINCES, DRC—CONFLICT**

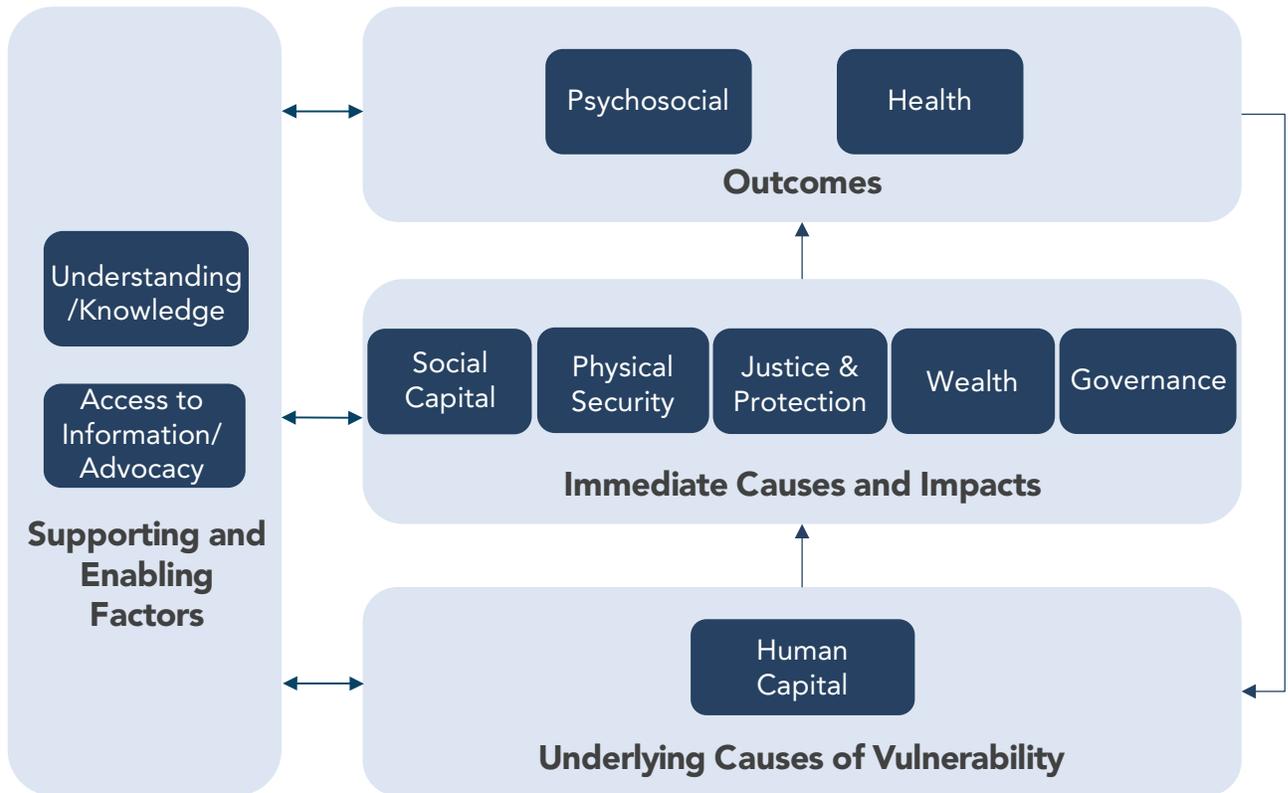


their wariness in the face of protracted conflict and their desire for lasting peace, despite the increase in armed groups. Psychosocial well-being also stands out among the dimensions, and is commonly identified as an outcome. Recurring themes of the discussion included fear, psychological trauma, loss of hope, vengeance, depression, and stress.

Particular to GBV, psychosocial well-being captured reported feelings of shame, humiliation, loss of dignity, and the negative effects that these feelings have on relationships. Another major dimension was health, with frequent mentions of the physical injuries and death that result from conflict, of the sexually transmitted diseases, unwanted pregnancies, and a lack of health infrastructure to care for victims of sexual violence.

People whose physical security is compromised are forced to cope by abandoning their plots of land, leaving behind their livelihoods. As a result, wealth and living conditions are a major casualty, and community members report a need for greater support in the form of defense associations, agriculture organizations, and skills-training programs. Unlike in other contexts in RAN’s network, community members viewed low levels of human capital as the underlying cause of their vulnerabilities, referencing the lack of trained and educated personnel to establish physical infrastructure and adequate governing bodies. Also unique to DRC, community

**FIGURE 14. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN NORTH AND SOUTH KIVU PROVINCES, DRC—GENDER-BASED VIOLENCE**



members discussed governance as one dimension, and the concepts of justice and protection as another (whereas other countries combined the two). Perhaps due to the country’s weak central government and citizens’ lack of faith in its ability to provide services, respondents stressed the importance of formal and informal mechanisms, and the need for processes and institutions through which citizens and groups can articulate their interests, exercise their legal rights, meet their obligations, and mediate their differences. By extension, respondents noted, the judicial system is weak, which has led to a lack of justice and impunity for aggressors in armed conflict and cases of gender-based violence.

**Potential Entry Points for Resilience Building**

In DRC, the underlying and immediate causes of vulnerability were so intertwined that the RILab experienced some difficulty prioritizing entry points. Instead, the RILab team decided on a more holistic approach, identifying potential entry points and interventions at each level of the framework. At present, viable paths fall into two categories, with one set addressing outcomes—particularly to improve health and psychosocial well-being—and one set addressing underlying causes, focused on conflict resolution, communication, and education. Possible interventions include innovative communication strategies to combat GBV and increased access to medical procedures that repair bodily damage caused by violent rape.

## West Africa

### **GHANA**

More than half of Ghana's 25 million people now live in cities, up from 43.8 percent in 2000.<sup>15</sup> Ghana's rate of population growth in urban areas, 3.5 percent annually, is among the highest in West Africa, and has been accompanied by many of the challenges commonly associated with rapid urbanization, including an increase in the number of people living in slums, overcrowding, unsanitary conditions, poor or nonexistent public services, and high rates of disease transmission. The University for Development Studies (UDS), the lead partner in the West Africa RILab, is particularly interested in resilience in the context of rapid urbanization and climate variability. From its research in nine target communities in Greater Accra, spanning three districts—Navrongo, Tamale, and Ashaiman—UDS found that respondents frequently identify poverty and the deteriorating environment as major constraints to improved livelihoods, referring in many cases to the problem of using low-quality materials to build physical structures which are unable to endure severe weather. Also related to poverty, however, is the level of youth unemployment in these communities, identified as a cause of conflict.

The RILab produced three separate context-specific resilience frameworks, one for each of the three districts currently being studied. In Navrongo, the research focuses on resilience to the intertwined challenges of food insecurity and climate variability; while in both Tamale and Ashaiman, the focus is principally on rapid urbanization and its effects on public health, employment, crime, and agriculture.

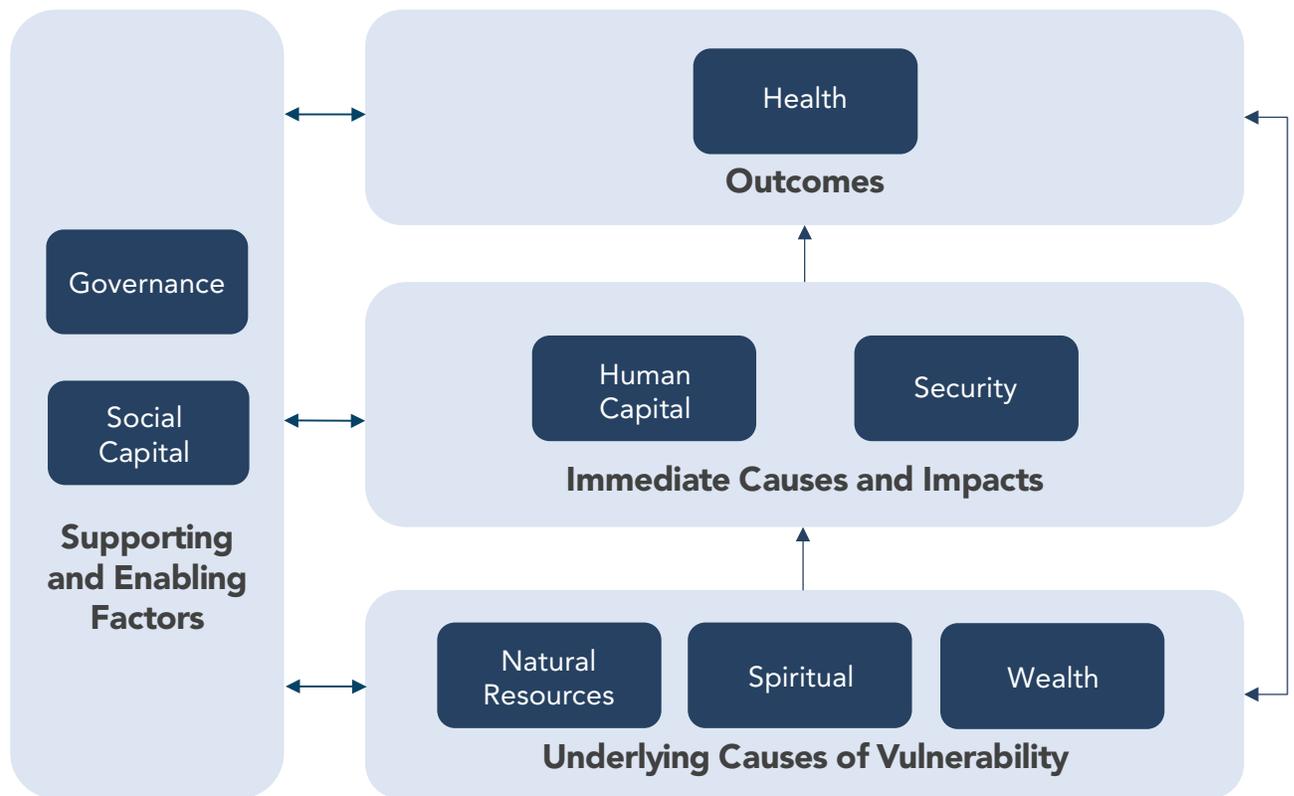
### **Resilience to Food Insecurity and Climate Variability in Navrongo**

Navrongo, with an estimated population of 156,000, is the administrative capital of the Kasena-Nankana district in north Ghana, located just several miles south of the Burkina Faso border. Most of the city's residents rely on agriculture for subsistence, making climate variability and its effects a priority challenge for the community members surveyed. As shown in Figure 15, the increasing strain that weather events are putting on natural resources is identified as a major cause of vulnerability.

#### ***Pathways of Vulnerability and Resilience***

Respondents in Navrongo reported that communities consult with traditional leaders in times of distress, and that these leaders use their power to settle disputes and promote peace among the residents in the community. This is identified as an adaptive strategy to the present challenges of governance. With respect to livelihoods, agriculture and animal husbandry are used for domestic consumption and as a source of income. To further supplement incomes, respondents reported working on construction projects in nearby areas, which create value for the community, and forming "welfare groups" in which all the members make contributions to assist one another. Some community members collect loans from financial institutions to engage in petty trading. However, to cope with shortfalls in income, some reported cutting and selling

**FIGURE 15. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN NAVRONGO, GHANA—FOOD INSECURITY AND CLIMATE VARIABILITY**



firewood, which depletes precious natural resources, or migrating to southern Ghana during the dry season to take up other jobs for sustenance. To save money, some parents keep their children from school, citing the high costs. The migration and avoidance of education both deplete human capital in the community.

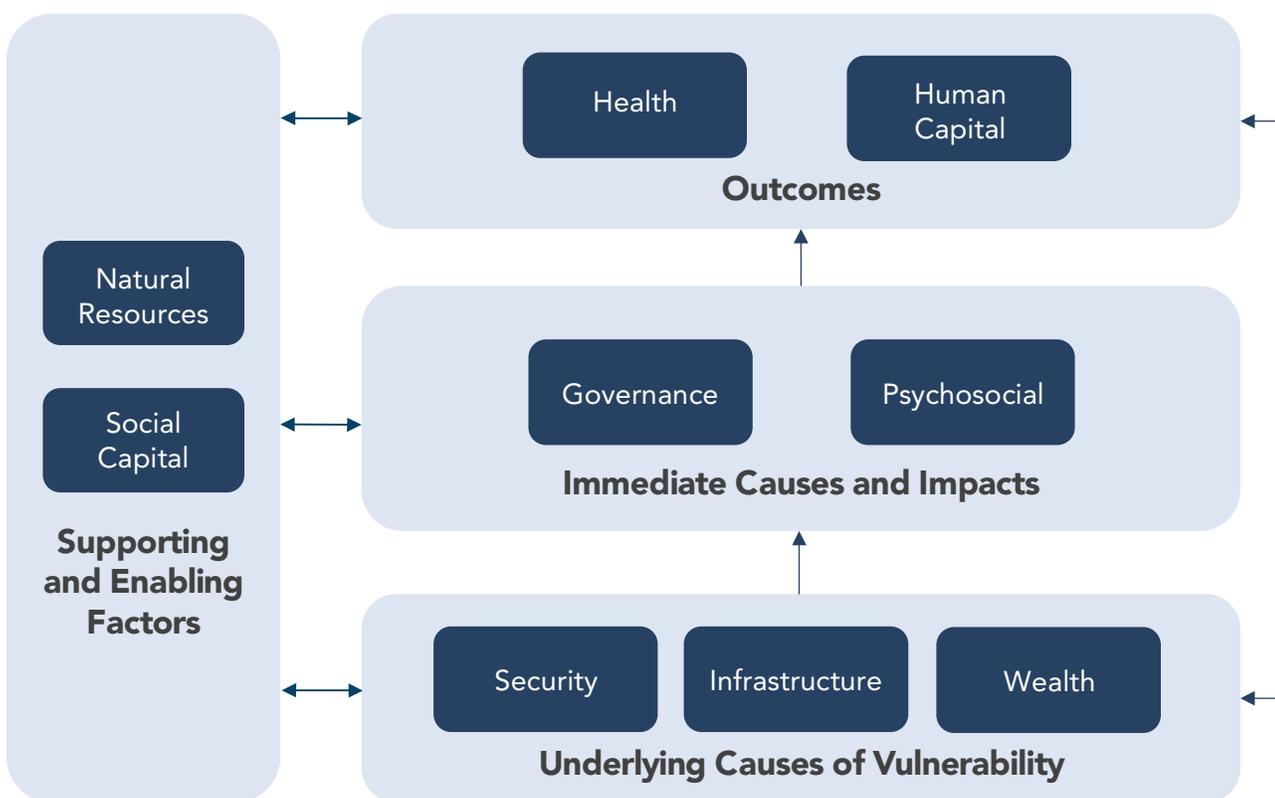
**Potential Entry Points for Resilience Building**

Community members stress the need for improved farming practices using appropriate, environmentally friendly technology. Since the area has only one short rainy season and a long dry season, it cannot adequately support rain-fed agriculture. Irrigation farming would be a good adaptive strategy but due to its capital-intensive nature, other methods of irrigation outside the reliance of water from dams would be innovative. Since the area is also vulnerable to floods, dams and dugouts could take in the floodwaters for farming during the long dry season. Communities also need to be educated on how to use agro-chemicals to improve farm yields without harming the soil.

## Resilience to Rapid Urbanization in Ashaiman

Ashaiman is the administrative capital of the Ashaiman Municipal district in Ghana's Greater Accra Region, just miles from the country's southern coast. Ashaiman is the fifth-largest and among the fastest-growing townships in the country, with its population having increased from 50,000 in 1984 to an estimated 300,000 in 2013. Such growth has left Ashaiman to contend with many of the major problems associated with rapid urbanization, including unemployment, crime, and unsanitary living conditions, as captured by the *infrastructure* dimension at the bottom of Figure 16.

**FIGURE 16. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN ASHAIMAN, GHANA—RAPID URBANIZATION**



### Pathways of Vulnerability and Resilience

Much of the discussion around coping and adaptive strategies in Ashaiman revolves around the issue of migration. For the most part, relocating is considered a negative coping strategy because it is unsustainable in the long term. However, community members stress the positive effects on psychosocial health of migrating from neighborhoods with high crime rates, and the overall benefit of relocating people from flood-prone areas to safer housing units. In many cases, community members say they choose to stay because it is relatively cheap to live

in Ahsaiman, even before one accounts for the costs associated with moving. Rather than flee high-crime areas, respondents say they form neighborhood watch committees to protect from armed robbers and exchange telephone numbers so they can contact each other easily in times of distress. The community also contends with unsanitary conditions, which greatly affect community health. In response, community members organize communal labor to clean up the community and point to an ongoing advocacy campaign, advertised on radio, television, and during community gatherings, that communicates the importance of maintaining a clean and health environment. Since Ashaiman is an illegal settlement, its inhabitants noted that it is hard to classify any strategy in that context as adaptive, as they could be evicted at any time without sufficient notice. But community members do note that some of the strategies they employ would be sustainable if they became institutionalized.

### ***Potential Entry Points for Resilience Building***

Several community members mentioned the need to develop innovations along the entire value chain of waste, to improve not just livelihoods in the community, but also sanitation. This might entail a waste-to-energy system that could solve a variety of problems, including an improvement in community lighting, which, according to respondents, would instantly improve security in the community and allow traders to conduct more business.

### ***Resilience to Rapid Urbanization in Tamale***

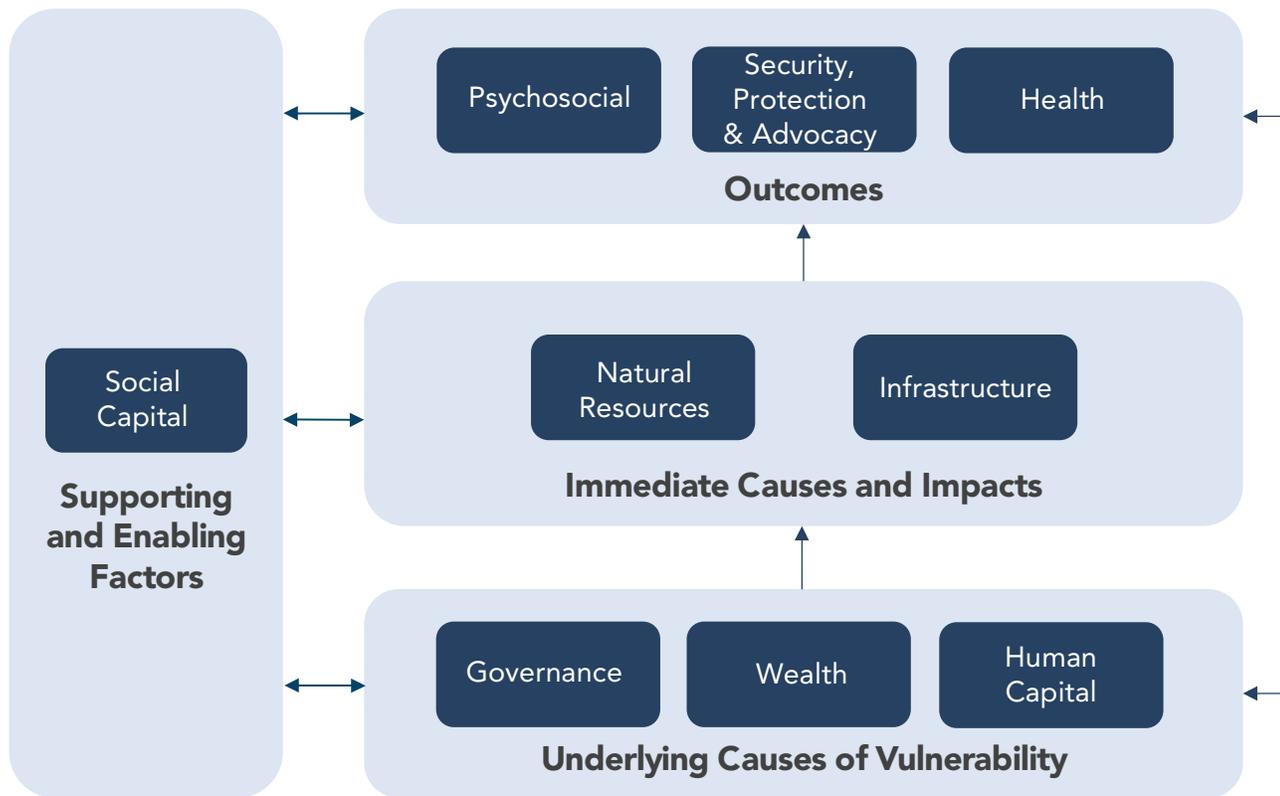
Tamale is the capital of Ghana's Northern Region and the country's third-largest city, according to the 2012 census, with a projected population of 560,000. As in Ashaiman, the growth rate in Tamale has led to many densely populated areas, where sanitation is lacking and consistent agricultural production and employment opportunities are in short supply.

### ***Pathways of Vulnerability and Resilience***

Due to the effects of climate change and a lack of modern agricultural resources, the area generally produces poor crop yields, and large-scale farming is on the decline, with significant amounts of farmland having been sold to real estate developers. As a result, the remaining land belonging to the Tamale community is overcrowded and food and employment opportunities are hard to come by. The primary adaptive strategy highlighted here is resorting to subsistence farming and selling extra food to others. Coping strategies include youth migrating south to look for jobs, children engaging in petty trade to supplement incomes, and people living on arable land instead of farming it. Another major challenge in Tamale is the impact of poor sanitation on health (see Figure 17), in which infrastructure improvements are believed to have the potential for direct influence on health outcomes.

An inadequacy of health and hygiene facilities and poor infrastructure is compounded by overcrowding and leads to flash floods, contaminated water sources, and health problems such as communicable hygiene-related diseases. Adaptive strategies include advocating for public benefits—particularly water, sanitation, and hygiene facilities—and subscribing to na-

**FIGURE 17. RESILIENCE FRAMEWORK FOR TARGET COMMUNITIES IN TAMALE, GHANA—RAPID URBANIZATION**



tional health insurance. Coping strategies include paying for adequate drinking water, searching for water in city aquifers, and defecating in bushes and abandoned buildings in peri-urban areas.

**Potential Entry Points for Resilience Building**

As in Ashaiman, optimal entry points would likely address the problem of sanitation in the community. Policy options include, but are not limited to, establishing a waste management system; using environmentally friendly toilet facilities; prohibiting the use of untreated waste water for vegetable farming; and introducing and strictly enforcing legislation to prohibit littering and the use of non-biodegradable packaging materials. ■

**TABLE 1. RAN TARGET COMMUNITIES**

Country	Resilience Target Areas	Target Communities	Region(s)
Eastern Africa RILab			
Democratic Republic of Congo	Conflict and gender-based violence		North and South Kivu provinces
Rwanda	A.) Floods and landslides	Sector Busogo in Musanze district, Sector Jenda and Jomba in Nyabihu district, Sector Rugerero in Rubavu districts	Northern and western provinces
	B.) Chronic conflict and refugees	Congolese refugees in Kigeme and Gihembe refugee camps	Southern and northern provinces
Uganda	A.) Chronic conflict	Pader Town Council and Coner Kilak, Ogur and Aromo, Padibe and Agoro	Northern-Pader, Lira, and Lamwo districts
	B.) Climate variability	Kasese, Nebbi, Hoima, Soroti, Katakwi, Amuria, Bududa, Butalejja, and Manafwa	Albertine region in west, Teso region in east, and Mt. Elgon region in east
Horn of Africa RILab			
Ethiopia	Recurrent droughts and displacement	Pastoralist communities of Borena zone	Oromia region in Southern Ethiopia
Somalia	Chronic internal displacement, conflict, and climate change	IDPs in Hodan, Hamar Weyne, and Wadajir districts	Benadir region in Southwest Somalia

**TABLE 1. RAN TARGET COMMUNITIES (CONTINUED)**

Country	Resilience Target Areas	Target Communities	Region(s)
Southern Africa RILab			
Malawi	Drought, floods, and HIV/AIDS	HIV/AIDS-affected households in Chikwawa district	Southern Malawi
South Africa	Poverty and HIV/AIDS	HIV/AIDS-affected households in Dikgale rural communities	Limpopo province
Zimbabwe	Food insecurity, poverty, and HIV/AIDS	Female-headed households in Beitbridge district	Matabeleland South province in Southern Zimbabwe
West Africa RILab			
Ghana	Rapid urbanization, climate change, and food security	Moni-Obaanye, Obaakakye, and Lebanon Zone 5 communities in Ashaiman; Nyohini, Kanvili, and Dungu communities in Tamale ; and Gia, Manyoro, and Doba communities in Navrongo	Greater Accra region in Southern Ghana; Northern Ghana; and Kasena Nankana municipal in upper east region

# Identifying Pathways for Innovation and Intervention

**AN IMPORTANT OBJECTIVE OF THE RILABS** is to develop, test, and potentially bring to scale new approaches to build community resilience. Through context analysis, data collection, community consultation, and development of context-specific frameworks, RILab teams have preliminarily identified dimensions of resilience that appear most viable and promising for capacity building. These intervention pathways are based on a prioritized and synergistic set of high-leverage intervention points—that is, places in the system where an intervention is likely to yield high resilience impact, and can be combined with a set of mutually reinforcing innovation projects designed to strengthen resilience in a holistic manner.

At present, five key pathways have emerged as priorities for intervention, all outlining objectives that can potentially serve to strengthen resilience in target communities:

## 1. **Positive disruption of agricultural production practices and markets in support of resilience**

With the goal of strengthening resilience against shocks and stresses related to climate variability and climate change, the Eastern Africa RILab determined that it will target innovations that improve target communities' gains in the agricultural sector. The majority of the region's communities rely on agriculture for livelihood but are stuck in a cycle of low productivity and incomes due to use of poor methods of agricultural production and poor market access. Changing this dynamic requires "positive disruption." The Eastern Africa RILab—which calls this pathway *Zukusa*, a Lugandan word meaning "wake them up"—seeks solutions that can challenge the status quo for agricultural practices related to production and market interaction in a transformative way that multiplies yield and creates more farmer leverage in the markets.

The Southern Africa RILab also identified this pathway as a priority for intervention, concluding that the effects of ineffective agricultural practices and limited market ac-

cess disproportionately burden HIV/AIDS-affected households, particularly where only one adult is present to generate income. The Southern Africa RILab is seeking innovations that will increase crop production and market interaction for households with health challenges and the attendant labor constraints.

The Horn of Africa RILab identified this pathway as high priority for building the resilience of the pastoralist Borana community to recurrent drought, by entrenching market-oriented livestock production. One of the more pervasive cultural attitudes among pastoralist communities such as the Borana is that herds of livestock must be kept large, with cattle being predominant. Keeping large herds has been a coping strategy to insulate against livestock loss caused by recurrent drought; pastoralists want to retain at least some livestock even if the majority dies during a severe drought. But this system of livestock production, consistent with large, nondiversified herds, has been self-defeating: large herds lead to overgrazing and environmental degradation, and environmental degradation leaves less sustenance for living livestock. Compounding the problem is that pastoralist communities tend not to have direct leverage in livestock markets. To address these issues, the Horn of Africa RILab is searching for solutions that will help diversify cattle-dominated livestock production practices and reorient the pastoralist communi-

ties toward market-oriented pastoralism where sustainable herd sizes are valued, livestock productivity is maximized, and leverage in livestock markets is sought and emphasized.

## **2. Diversification of livelihoods**

Resilient communities can thrive in the face of adversity through the use of adaptive strategies, but their options are constrained by a lack of livelihood diversification. Both the Eastern Africa and Southern Africa RILabs are in search of solutions that will empower target communities by diversifying their livelihoods using simple but highly profitable farm and nonfarm businesses. In Eastern Africa, these interventions will aim to improve individuals' resilience to climate variability; in Southern Africa, the objective is to mitigate the effects of food insecurity on HIV/AIDS-affected households. Included in this pathway will be a call for business platforms to be gender- and age-responsive, meaning accessible in equal measure to marginalized groups and that themselves contribute to overcoming gender and other socially constructed barriers to opportunity and access. Further, the RAN is seeking complementary "pendulum" businesses that oscillate adaptively between dry and rainy seasons to sustain rural household incomes.

## **3. Financial engagement and inclusion**

Among the biggest impediments to investment and risk mitigation in rural areas is the lack of a savings culture.

This includes both monetary savings and storage of some produce surpluses for use in low-output months. The lack of monetary savings constrains households' ability to invest in expanding their businesses or start new businesses. It also limits their ability to pay for health care in case of emergencies such as childbirth or severe illness, leading to high mortality from preventable conditions. Because communities are constrained by many stresses, they have low discount rates, and thus a low tendency to save. And given the challenge of accessing credit, it is nearly impossible for these households to expand the scale of their business, let alone acquire household assets that improve their quality of life. Therefore, the RAN is seeking solutions that increase the potential for individuals and households to save for investment and emergencies. Examples of possible ventures include, but are not limited to, novel technologies, approaches, or platforms that can facilitate saving in rural households; new models to channel savings directly to predetermined low-risk investments; and innovative models and approaches for risk mitigation through risk transfer, accessible by rural communities. In order to substantially increase access to credit for development among rural households, an additional aim of the RAN is to identify new models or approaches that disrupt current practices in rural microfinance.

#### **4. Development of human capacity and agency**

Additionally, to be selected, teams will have to demonstrate the extent to which human-capacity development aspects have been mainstreamed into their activities for increased individual- and community-level agency, as well as green technologies and approaches where appropriate. This requirement underscores RAN's belief in the power and agency of the individual community member as a critical aspect of resilience building and sustainability. By mainstreaming human-capacity development and increased agency, we mean proposed solutions should contain a component for understanding and promoting the community's "know-how" to apply the solution, empowering them to manage their affairs without necessarily always relying on external support, and ensuring access by marginalized groups like women and youth.

#### **5. Water for all**

For the Borana pastoralist communities in Ethiopia, where the major concern is recurrent drought, water is scarce. Their livelihoods depend almost exclusively on the availability of pasture and production of fodder, which are both highly dependent on the availability and proper management of water sources. Further, the available water sources in many places are physically, chemically, and biologically unsafe—and the communities lack proper water resource management and household water treatment methods. Therefore, the Horn of Africa RILab is seeking innovative and locally relevant and sustainable solutions to increase access to potable water for domestic use; technologies to improve water extraction, treatment, storage, and reuse; and innovative approaches to increase the availability of water for livestock production and livelihood diversification.

## Encouraging Innovation to Build Community Resilience

With the priority pathways established, requests for proposals will be issued by each of the RILabs. The requests will seek multidisciplinary teams of innovators to develop solutions for resilience innovation challenges as characterized under each pathway. Proposed solutions with demonstrable potential to have an impact on resilience will be supported with initial incubation grants of up to \$45,000 as concepts are refined and prototypes are developed. Innovation teams will be supported through a range of training activities. These will include short courses in ethnography, resilience interventions, and design thinking, delivered in face-to-face sessions and in a series of multimedia online tutorials (called M-KITS), as well as brainstorming sessions in which teams receive detailed critiques from teams of technical experts. Each innovation team will be paired with at least one mentor, a professional with technical knowledge of the field in which the team is working. The teams will work with target communities to co-create solutions that are responsive to communities' needs. Throughout the process, RILabs will provide continuous support to the teams for development and incubation of interventions, including, for example, rapid prototyping sessions, elective trainings on specific skills areas, or referrals to specialty labs and experts or to other relevant HESN partners.

Eventually, a subset of teams will be selected for further support. Those innovations that are successfully tested with target communities will be developed into resilience interventions that will be scaled up for broader application.

It is the belief of the RAN partners that if positive effects are observed in these communities, select interventions can be replicated and brought to scale in other communities that share similar development challenges in sub-Saharan Africa. Even where interventions are not replicable or easily scalable in other communities, however, the resilience assessments and identified resilience pathways stand as invaluable reference points for individuals and organizations—both within and outside the RAN—hoping to develop programming on the ground. As such, the RAN is hoping to meaningfully contribute not just to its target communities and communities like them, but to the field of development policy writ large. The body of research compiled by the RAN, from the primary data collected to the analysis performed, is meant to deepen our understanding of resilience and improve collective efforts to strengthen it. ■

# Endnotes

1. The USAID Global Development Lab was launched in April 2014. The new entity “seeks to increase the application of science, technology, innovation and partnerships to achieve, sustain and extend the Agency’s development impact to help hundreds of millions of people lift themselves out of extreme poverty.” See USAID, “About the U.S. Global Development Lab,” <http://www.usaid.gov/GlobalDevLab/about>.
2. RAN definition of resilience: It is worth noting that recovery is not necessarily about helping people get back to the status quo before the stress or shock; rather, people should bounce back less vulnerable to future shocks and stresses.
3. RAN recognizes that people themselves are systems. However, since building resilience is ultimately about improving the well-being of people, the term “people” is maintained within the definition.
4. Disaster Resilience Leadership Academy (DRLA), “Strengthening Leadership in Disaster Resilience Program,” Tulane University, <http://www.drlatulane.org/programs/sldrp>.
5. Ibid.
6. Ibid.
7. Ibid.
8. Ibid.
9. Innovations and interventions are used interchangeably.
10. The Makerere RILab, in partnership with Stanford University’s Center for Deliberative Democracy, conducted Deliberative Polling exercises in both Bududa and Butaleja districts of the Mt. Elgon Region during July 2014.
11. Statistics South Africa, “Poverty Trends in South Africa: An examination of absolute poverty between 2006 and 2011,” Report no. 03-10-06, 2014, <http://beta2.statssa.gov.za/publications/Report-03-10-06/Report-03-10-06March2014.pdf>.
12. Lloyd Gumbo, “Zimbabwe: HIV/Aids Prevalence Rate High in Border Towns–NAC [National Aids Council],” All Africa, January 31, 2014, <http://allafrica.com/stories/201401310297.html>.
13. For a study on the benefits and tradeoffs of enclosures in Borana pastoralist areas, see the Pastoralist Livelihoods Initiative’s report from 2011, “Review of Pastoral Rangeland Enclosures in Ethiopia,” <http://fic.tufts.edu/assets/Tufts-Range-Enclosure-Review-PLI.pdf>.
14. Jeffrey Gettleman, “Congo Study Sets Estimate for Rapes Much Higher,” *New York Times*, May 11, 2011, <http://www.nytimes.com/2011/05/12/world/africa/12congo.html>.
15. Ghana Statistical Service, “2010 Population and Housing Census: Summary Report of Final Results,” May 2012, [http://www.statsghana.gov.gh/docfiles/2010phc/Census2010\\_Summary\\_report\\_of\\_final\\_results.pdf](http://www.statsghana.gov.gh/docfiles/2010phc/Census2010_Summary_report_of_final_results.pdf).





CSIS | CENTER FOR STRATEGIC &  
INTERNATIONAL STUDIES

1616 Rhode Island Avenue NW  
Washington, DC 20036  
202-887-0200 | [www.csis.org](http://www.csis.org)

ROWMAN &  
LITTLEFIELD

*Lanham • Boulder • New York • London*

4501 Forbes Boulevard  
Lanham, MD 20706  
301-459-3366 | [www.rowman.com](http://www.rowman.com)

*Cover photo: Accra, Ghana. Credit: Shutterstock.*

