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A Call for a *Resilience Index* for Health and Social Systems in Africa

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In today's Africa, how do people maintain coherence, make sense of their lives and sustain their livelihoods without compromising their core identities as individuals, communities or nations? This question is diametrically opposed to questions commonly asked about African vulnerabilities, the root causes of those vulnerabilities and how they might be addressed.

The vast literature on vulnerability has dwelled on the deficits with little or no attention to the assets that sustain African lives and livelihoods, often against the odds. Assumed and observed weaknesses in health and social systems loom large, overshadowing real or potential strengths that need to be harnessed and allowed to develop and grow from the ground up. Africans and others who are concerned about the one-sided discourse of vulnerability have been seeking the alternative question. This question is about resilience, the other side of the coin. Asking this question can lead to some rather interesting, and different, answers.

This policy brief explores the concept of resilience as it applies to health and social systems in Africa, and suggests that development of a multi-dimensional resilience index may help to better understand and formulate policy in settings of complex emergencies. Such an index would compile important information about how people actually cope with emergencies instead of focusing only on their vulnerabilities to the adverse impacts.

What is Resilience?

Resilience is the capacity of individuals, families, communities, and institutions to anticipate, withstand and/or judiciously engage with catastrophic events and/or experiences; actively ***making meaning*** *out of adversity, with the goal of maintaining 'normal'* ***function*** *without fundamental loss of* ***identity.***

This paper is part of the **Africa 2060 Project,** a Pardee Center program of research, publications and symposia exploring African futures in various aspects related to development on continental and regional scales. The views expressed in this paper are strictly those of the author and should not be assumed to represent the views of the Frederick S. Pardee Center for the Study of the Longer-Range Future or of Boston University.

AFRICA 2060

Because it is a multi-dimensional construct, resilience has multiple meanings and applications in a wide range of academic disciplines, policy and practice sectors. The instruments used for measuring resilience often correspond to the definition used. For example, a mechanical engineer may use a 'resiliometer' to gauge the elasticity and strength of materials used in the construction of a suspension bridge built to withstand high winds and earthquakes. Resilience in living systems is measured differently, as the definition proposed above suggests. In this sense, resilience is the sum total of the dynamic processes of adaptation, development, growth, and transformation while maintaining normal function without loss of identity, integrity or authenticity.

Three fundamental assumptions are clear in the literature on the subject, which includes the inter-related fields of international health, development, and humanitarian aid (see Box 1). First, adaptation is central to the concept of resilience. All living systems naturally go through an adaptive cycle of birth, growth, maturity, decline, and regeneration as one generation is succeeded by the next. This involves alternating cycles of persistent, routine processes and turbulent or transformative changes (Figure 1).

Second, different phases of the adaptive cycle involve equilibrium, a state of balance to maintain normal function, but the overall process is dynamic and cross-scale. Persistence and transformation co-exist in all living systems at different levels: small, medium, and large. This is best explained by the concept of panarchy, first articulated by ecologists Buzz Holling and Lance Gunderson. According to the Resilience Alliance's summary:

"...The essential focus of Panarchy is to rationalize the interplay between change and persistence, between the predictable and unpredictable, Holling et al. (2002) draw on the notion of hierarchies of influences between embedded scales, that is panarchies, to represent structures that sustain experiments, test its results and allow adaptive evolution... Two features enrich the notion of a panarchy in a manner that distinguishes it from traditional hierarchical representations. The first is the inclusion of the dynamics of the adaptive cycle which takes place at all scales following different internally arising and externally influenced rhythms. The second is the connections between levels." (Resilience Alliance, 2009).

Box 1: Three Fundamental Assumptions of Resilience*

1. Resilience is part and parcel of the adaptive cycle in social-ecological systems (systems of people and nature). The cycle is between routine (persistent) and turbulent (transformative) change. Transformation and persistence coexist in all living systems.
2. Resilience is a dynamic steady-state, and not a static state of equilibrium. Different parts of a system strive to maintain a state of balance or equilibrium to function normally towards the overall goal of achieving a steady-state.
3. Resilience of linked social-ecological systems is measured or assessed by the human capacity to anticipate or recognize critical transitions; to absorb shock and manage disasters/adversity through innovation and flexibility necessary to maintain 'normal' function while reorganizing, actively learning and making meaning of adversity without fundamental loss of identity or integrity.

*Based on a review of sources that discuss the concept of resilience in published and gray literature from anthropology, ecology, social psychology, political science, medical and health sciences, multiple non-governmental humanitarian and development agency reports, and emerging literature and historical documents written in African languages, among others.

This suggests that persistence and transformation, routine and turbulent change take place at all levels, resulting in dynamic change across scales. Small scale adaptive changes may trigger large scale transformations. Conversely, lessons learned from medium and large-scale processes of change may trickle down to nourish and sustain small-scale regeneration and growth. This is what sustainable development looks like — linked cycles of adaptive change across scales concurrently taking place on non-linear, if not level grounds (Figure 2).

Third, *human action is central to the notion of resilience in linked social-ecological systems.* Humans have the uniquely advanced cognitive capacity to anticipate, manage, and make sense of turbulent change and transformation, while at the same time persisting with routine processes that define their core identities. Assessments or measurements of resilience are therefore necessarily people-centered, and thus layered, and multi-dimensional.

Defining what we mean by resilience clearly makes it easier to find the necessary tools for measuring and assessing it meaningfully. In answer to the questions, "Whose resilience?" and "Resilience to what?" the focus of attention includes individuals, families, and communities in the process of rebuilding their lives and livelihoods following war, displacement, and other disasters. The development of a resilience index, a composite score derived from multiple measures that capture the meaning and function of different phases of the adaptive cycle, will be helpful in understanding how to move individuals, communities and nations toward resilience.

Figure 1: Adaptive cycle in living systems: routine change (persistence) *and* turbulent change (transformation)

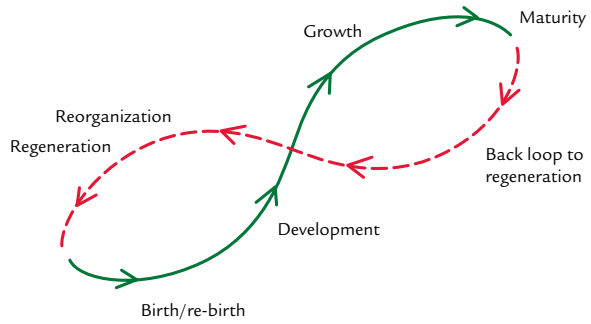
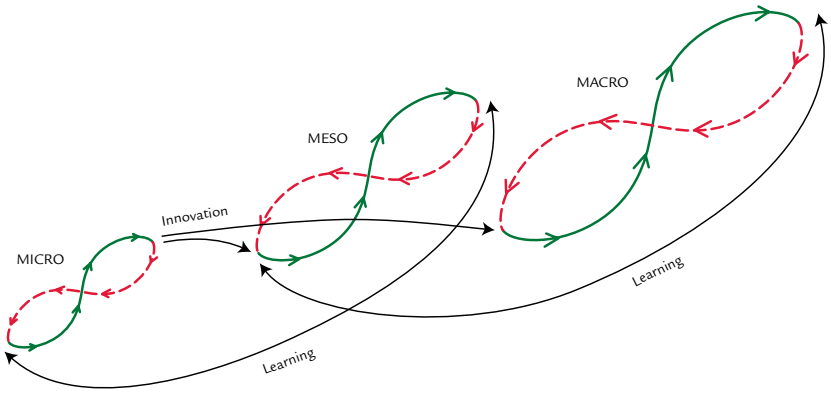


Figure 2: Dynamics of resilience across scales with non-linear (panarchic) linked processes



Context

The context in which heath and social systems function as 'normal' determines their level of resilience. Individuals, families, and communities that generate and access social capital and the material resources needed to maintain health and social stability are likely to build resilience. Resilient institutions and systems depend upon resilient people and vice versa. What are the key factors for health that build, promote, and sustain resilience across scales? Research points to the following: social support, social capital, adaptive governance, and accountability that are coherently inter-connected from small to large scales, in non-linear, often overlapping layers.

Social support: Three types of social support are most critical in the immediate aftermath of disaster and during the period of "psychosocial transition" (Almedom, 2004):

- Emotional support
  (showing that somebody cares),
- Cognitive support
  (answering the what, when, why and how questions that are asked in times of crisis), and
- Material support
  (providing for the basic needs such as water, food, shelter and medical supplies)

The dynamic interplay between these types of social support, the timing, and level, can make the difference between positive and negative aftermath of disaster at all levels: individual, family, community, and nation. This includes the distinction between helpful and harmful humanitarian assistance, a form of social support that is routinely mobilized at local, national and international levels. In the short term, small and medium scale social support of the right type and timing can promote resilience and sustain lives and livelihoods. However, long-term sustainability may be thwarted if these are not connected to macro level policies and principles that govern international relations. Identifying and understanding the sense of coherence within and across systems is the purpose of the proposed multi-dimensional resilience index.

Social capital: Two schools of thought on social capital continue to inform current discussions on the links between health and social capital: Robert Putnam's *communitarian* political perspective and Pierre Bourdieu's social theory of *forms of capital,* which underlies James Coleman's exposition of *family social capital.* Social capital is assessed using composite measures of trust and reciprocity, civic participation, and informal social control reflecting shared norms and values. The relevance of one or more of these may vary according to different life stages. For example, informal social control may be critical for neighborhoods where ensuring the safety and security of families with young children or the elderly is paramount. Young adults without children may thrive in urban centers where parents of young children and the elderly may feel vulnerable. However, urban areas with high levels of social capital can also sustain multi-generational communities where both young and old meaningfully participate in protecting their neighborhoods from crime and lawlessness.

Civic participation, normally measured by voter registration and turnout in local and national elections, may not be an appropriate measure of civic engagement in settings of current armed conflict or chronic political instability. Established processes of community organization and participation in collective decision-making and action may be more reliable indicators of institutional resilience, and these can be gleaned from narratives of resilience such as those documented as part of community-driven processes of problem solving. (See Nayr et al., 2009 for an example of community organizing processes resulting in solving the problem of prolonged internal displacement in post-war Eritrea.)

Box 2: A Composite Resilience Index

Proposed Core Sets of Indicators

- Social support: type; timing; level
- Social capital: trust, shared norms and values; reciprocity; civic participation
- Sense of Coherence: manageability, comprehensibility and meaningfulness of engaging with adversity
- Context: ecological, historical, geo-political, and economic resilience narratives
- Institutional/organizational innovation: flexibility; adaptability to change — managing critical transitions without fundamental loss of identity

Broadly speaking, social support may be nested within the rubric of social capital and vice versa as the two are closely interwoven into the fabric of resilience, and operate at multiple scales. Two types of social capital, bonding (that which helps people *get by*) and bridging (that which helps people *get ahead*), can be assessed in terms of their two components: *structural* and *cognitive.* Social institutions and networks, and the types and levels of trust, reciprocity, and informal social control (sanctions) that govern them at micro, meso, and macro levels are primary contextual indicators used in the resilience index (Box 2).

Adaptive governance and accountability: In the process of adapting to turbulent change, people and the (formal and informal) institutions that govern their lives either succeed or fail in different ways and at different times. Adaptive governance and accountability are characterized by active learning from failures and strengths, respectively, of the weak and strong components of a given system.

In the context of systems of health care provision, emergency response teams are routinely exposed to situations of extreme distress and suffering while assisting victim-survivors. Some of these care providers are humanitarian agency personnel, both local and international. Unless there are mechanisms whereby they can access and use "institutional memory" (often personified by senior colleagues who train and support them by sharing their knowledge and experiences on the job), humanitarian assistance workers will repeat mistakes already made by their predecessors (see for instance, Terry, 2002). Such mistakes can threaten the emotional and social integrity of emergency response teams, if not the institutions they represent. Power struggles and competing interests among health and social/humanitarian workers or their institutions may undermine the resilience of their primary constituents — the communities they assist.

" ...existing indices of state effectiveness and accountability that rely merely on media reporting in the English-language are open to the weaknesses of subjective premises ..."

Efforts to instill accountability and adaptive governance in assistance organizations are increasingly framed in terms of risk reduction, disaster mitigation, and resilience-building. The United Nations' International Disaster Reduction Strategy (UNISDR), which adopted the Hyogo Framework of Action (HFA, 2005-2015) as well as the activities of Humanitarian Accountability Partnership – International, and the Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP), are all promising examples, albeit limited by inadequate bridging social capital between North and South.

Accountability and adaptive governance in Africa need to be assessed using contextualized measures of community organization and grass-root participation in monitoring, evaluations, and policy formulations. For example, international organizations — including branches of the UN — have to practice what they preach by enforcing accountability and governance in peace-keeping interventions. Grievances over UN peace keeping troops' sexual misconduct, including rape of minors, are among the outstanding issues plaguing health and social systems in several African countries (BBC News, 2006; IRIN, 2004), eroding the credibility and potential for building and maintaining bridging social capital.

In most sub-Saharan African countries, the political identity and integrity of nation states continues to be compromised if not totally undermined by corruption from within and without. Unfortunately, existing indices of state effectiveness and accountability that rely merely on media reporting in the English-language are open to the weaknesses of subjective premises and measurement tools that perpetuate negative perceptions of Africa and its people. For instance, the widely disseminated "Failed States Index" (FSI) and "Corruption Perception Index" (CPI) both remain limited in their approach to data collection, analysis and interpretation. The development of a composite and multi-dimensional resilience index could address such limitations by drawing on primary evidence from multiple sources including non-English language reports published for diverse audiences.

There is also a chronic problem of misinformation due to the poor quality of data generated to inform health and social policy in most African countries. Some African countries do invest time, human, and material resources to conduct meticulous demographic health surveys (DHS) periodically. Unfortunately, policy makers and practitioners who rely on international database centers sometimes do not perceive such surveys as authoritative. For example, there is a marked discrepancy between the population data for Eritrea and that generated by the U.S. Census Bureau international database, even though the Eritrean government's DHS data were themselves gathered by a reputable American firm using appropriate methodologies. Identifying measurable indicators of resilience and appropriate, reliable, and valid instruments for conducting data analysis is therefore a serious (but not insurmountable) challenge for those relying only on the US international database.

Profiling the Proposed Resilience Index for Health and Social Systems in Sub-Saharan Africa

Primary field research in Eritrea over the past eight years has provided both conceptual and empirical insights into the practical need and applications for a possible resilience index. Eritrea is the newest country in Africa, having emerged 18 years ago from one of the longest wars for independence and self-determination. It presented itself as an ideal "natural laboratory" for the study of resilience in 2001 when preliminary discussions with research participants (study populations) in internally displaced person (IDP) camps found they did not want to engage in explorations of trauma and their vulnerabilities. Instead, they suggested the topic of resilience as their preferred alternative.

> "Focusing on the strengths of formal and informal African social institutions so far has served to understand the dynamics of adaptive processes that have sustained lives and livelihoods."

The researchers (comprising a multidisciplinary and inter-sectoral team) designed a study of resilience using participatory methods, first and foremost to define the topic and scope of research. They then adapted the "Sense of Coherence" short form (SOC-13) for use in nine Eritrean languages to measure resilience. The results highlighted the multi-dimensional nature of human resilience that is nested in formal and informal institutions that protect and promote health and social well-being. The most recent follow-up study (Nayr et al., 2009) confirmed that policy and practical solutions to the problem of prolonged displacement resulted from processes of community organizing facilitated and upheld by effective tools of adaptive governance.

The sense of coherence (SOC) scale is at the core of the proposed multi-dimensional, composite resilience index. It was originally designed to operationalize the theory of Salutogenesis (Antonovsky, 1987) and has been widely used in health promotion research, gaining credence in terms of its validity and cross-cultural applications.

Because the SOC is a measure of people's global orientation — the extent to which they find adversity comprehensible, manageable, and meaningful — it speaks to the entirety of disaster coping mechanisms that people and institutions deploy. The SOC scale in its short form consisting of 13 items (SOC-13) has been widely used by bio-medical researchers in Australia, Europe, North America, the Middle East, and Africa. A number of studies using the SOC scale to investigate a wide range of topics confirm the robustness of the scale and its applicability across culture and language boundaries.

A systematic review of empirical studies of the SOC scale conducted by the Nordic School of Public Health's salutogenic project found that the scale has been used in at least 33 languages in 32 countries with at least 15 versions of the scale (Eriksson and Lindström, 2005). Using the SOC scale in nine African languages also revealed that it easily lends itself to multiple dimensions of investigation, generating context-specific data on the historical, social and cultural determinants of human resilience (Almedom et al., 2007).

The Need for a Resilience Index

While we have different ways of measuring and understanding the vulnerabilities that come from adversity, especially in the African context related to social and health crises, we do not have good tools to understand or measure resilience – the ways in which people cope with these crises. We need such measures. In particular, we need a resilience index to better guide us to what communities are capable of doing and to devise ways in which their latent resilience can inform as well as assist policy.

It is anticipated that while not prescriptive in specific terms, a resilience index could provide basic tools for gauging the resilience of health and social systems with particular reference to sub-Saharan Africa. Health systems constitute formal primary health care services whose focus is largely on disease prevention (without discounting secondary health care, which focuses on cure). Informal health systems include traditional, complementary and lay services in disease prevention and care.

The resilience index whose core sets of indicators are outlined in Box 2 could include measures of community organization and participation at all levels, including the capacity to formally train and retain health workers through enlightened, equitable engagement with western counterparts. These reflect both North-South and South-South collaborations. For example, Norway has committed to "reducing its contribution to the 'pull' of health workers from their home countries by pursuing a policy of self-sufficiency for its own needs while also helping to reduce 'push' factors through development assistance to support the strengthening of low-income countries' health systems. Recognizing that no one government sector could develop such a policy alone, Norway further committed to policy coherence across the sectors of health, labor, education, development, and foreign policy in this new strategy" (Robinson and Clark, 2008). This is a promising new model of incentives for western countries to build resilience in African health and social systems by increasing their own systems' self reliance.

In conclusion, while focusing on health and social systems in sub-Saharan Africa, the composite and multi-dimensional resilience index could help unravel North-South inter-connectedness at different levels and scales. Focusing on the strengths of formal and informal African social institutions so far has served to understand the dynamics of adaptive processes that have sustained lives and livelihoods. General as well as context-specific determinants of resilience can be distinguished and gauged across scales.

The strength — and test — of the proposed resilience index is that it is not a single linear scale, but a composite tool that takes into account non-linear and layered processes that either promote and sustain or mask and erode human, institutional, and social-ecological resilience. Identifying the weak (vulnerable) areas in contemporary African health and social systems involves two-way evaluations of North-South exchange of human and material resources. Such evaluations must start with accurate data generated by routine national demographic health surveys complemented by composite measures of sense of coherence, social capital, and current narratives of how meaning is derived from adversity. Thus, a resilience index could possibly inform how we respond to complex catastrophes in Africa and elsewhere.

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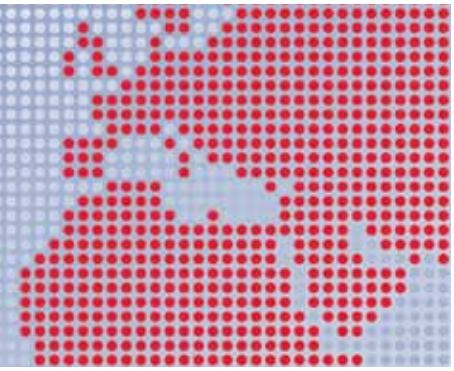

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