Empowering Vulnerable Populations to Build Resilience

Concept Note and Project-Based Applications

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Introduction

Risk—real or perceived—affects most decisions made by individuals, households, and communities around the world. Although risk varies by nature (physical, financial, climate-related, etc.) and severity across continents, all risk carries with it the potential to push vulnerable populations below a threshold from under which recovery is impossible, or at least unlikely in the short or medium terms. Unmitigated risk and its effects are some of the main reasons that vulnerable households fall into poverty, and they underlay the inability to sustainably leave it. In addition, the deeper a household gets into poverty, the less able it is to handle the marginal risks which might enable exit. As a result, decision-making priorities focus increasingly on triage and short-term survival. The development and implementation of resilience strategies is therefore at most a prerequisite for, and at least an important element, of successful human development programs.

Although it is not a new concept, resilience has recently come into sharper focus. In the international development sphere, for example, it was identified as the top “buzzword” in 2012.1 Buzzwords, however, do not necessarily carry conceptual clarity and specific programmatic implications, which makes them more likely to be replaced by the next buzzword before they have had a chance to influence practitioners’ thinking and affect programs on the ground.

The purposes of this paper are to propose a simple framework to analyze resilience and to guide the development of programs to strengthen it across the domestic and international spheres. The paper is guided and illustrated by Abt Associates’ experience with almost 50 years of research and implementation programs in areas as diverse as social and economic policy, health, food security, and climate change.

Vulnerability and Risk

A risk-based approach to vulnerability recognizes that individuals and households are especially vulnerable when they face a combination of three compounding factors: living in high-risk environments; limited access to a sufficient number of affordable risk management strategies; and the potential of small shocks or crises to quickly wipe out any buffers. These three factors are described in more detail below.

High-risk environments. Because of historical circumstances, previous shocks or choices made by earlier generations, vulnerable households live in environments that are likely to further increase their vulnerability. Rainfall levels, local epidemiological profiles, cultural norms, regulatory environments and their enforcement (or lack thereof), political instability, socio-economic systems, and health care infrastructure are all factors that can keep households locked at a high level of vulnerability.

Limited access to affordable risk management strategies. Day after day, most vulnerable households around the world demonstrate remarkable resourcefulness as they protect themselves against the long list of risks that threaten their lives, health, livelihoods, and human development. Yet the accessible strategies usually provide very limited protection and are cumbersome, expensive, and demanding in terms of social or time commitments.

Beyond arguing for the broad applicability of the concept of resilience across these areas, the paper also sets out to identify four resilience-enhancing strategies that, when combined, significantly increase the effectiveness of risk management efforts. Finally, the paper underscores the potential for cross-fertilization between the domestic and international applications of resilience.

In other words, even if these households are aware of the behaviors needed to lower their risk exposure, they lack a portfolio of flexible and affordable strategies to do it better:

- Families in India may rely on informal networks of reciprocal solidarity to limit financial exposure from illness—but unless they have access to large pools of health insurance, their participation in these networks may provide limited benefits and be ineffective in case of epidemics.
- Young people in America may be aware of the health risks of obesity—but without access to the right behavior change messages or outlets to purchase healthier food, they may not be able to improve their diet.
- Farmers may know about the nutritional and commercial value of high yield seeds—but unless they decide to face cultural preconceptions about the products grown from these seeds, they may choose to eat less nutritious food.
- Veterans may know about the dangers of homelessness—but without strong support networks, they may fall through the cracks and find themselves on the street.
- African families may know that mosquitoes carry the malaria parasite—but unless most families in an area agree to have their house sprayed with insecticide, the mosquito population will remain strong and infection levels high.

At-risk individuals may know about the effects of HIV/AIDS—but if they don’t have access to condoms and to information on how to use them effectively, they and their partners remain vulnerable to infection.

Poor families everywhere know that not having savings puts them at risk of falling deeper into poverty every time they face a crisis—but they often lack the behaviors and financial products to save enough to cover the costs of everyday emergencies.

Vulnerability of buffers to crises. Because vulnerable households have limited and imperfect access to coping strategies, even relatively small shocks or crises can quickly wipe out any buffer that they may have accumulated, pushing them further into poverty. According to a World Health Organization report, at least 135 million people in low-income countries suffer health-related financial catastrophe—and more than 90 million of them fall under the poverty line every year—because of health care costs, even relatively small ones. In the United States, several hundred thousand people file for bankruptcy annually because of debt incurred from a medical emergency.

The mere existence of risk leads vulnerable households to make choices that limit their long-term prospects. Uninsured risk leads households to choose low-risk/low-return investments—even in the presence of a high-return investment opportunities. For example, although farmers may be fully aware of the existence of a high-value seed and its market potential, they may choose instead to grow low-risk but low-profit staple food because their risk tolerance is not boosted by affordable resilience strategies.

“Because of the long-term impact of depleting productive assets, households’ inability to manage risk and increase resilience can have long-term, lifelong, or even inter-generational impact on assets, income, health, and general well-being.”

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3 Although its methodology has been criticized, a 2009 study suggests that at least 62% of bankruptcies in the US in 2007 were due to medical debt (D. Himmelstein, D. Thorne, E. Warren, and S. Woolhandler, “Medical Bankruptcy in the United States, 2007: Results of a National Study,” The American Journal of Medicine 22 (8), 2009, 741–746.)
As a result, these households’ incomes are lower on average than they would have been if the households had better access to resilience strategies, leading in turn to narrower options in terms of food, health, and education expenditures. Because of the long-term impact of depleting productive assets, households’ inability to manage risk and increase resilience can have long-term, lifelong, or even inter-generational impact on assets, income, health, and general well-being. Well-designed and -priced risk transfer products can reverse this situation, as when farmers in Malawi gained access to credit because their crops were insured against drought—even when drought does not strike.4

How to Define and Assess Resilience?

For the purposes of this paper, I propose to define resilience as the capacity of individuals, households and communities to decrease the negative impacts of crises or shocks on their health, economic well-being, and human development.5,6,7 This capacity manifests itself through two sets of potential actions:

- Lowering the likelihood of crises and shocks (which I call preparedness), and/or
- Reducing the consequences of crises and shocks when they do happen (called response).

The “resilience triangle” presented in Figure 1 offers a visual representation of the concept. It was first conceived of by infrastructure engineers borrowing from early structural and materials engineering definitions of resilient materials with the intention of applying those definitions to communities facing natural disasters.8 Accordingly, the early triangle depicts the quality of infrastructure as measured on a percentage scale as a function of time, with \( t_0 \) being a natural disaster event and \( t_1 \) the point at which a community has restored its infrastructure to pre-\( t_0 \) levels. Resilience is, according to this simple framework, the area within the approximate triangle formed during the recovery timeframe \( t_1 - t_0 \) (approximately, \( \frac{1}{2} * (Q_0 - Q_1) * (t_1 - t_0) \))—where \( Q \) represents the quality of infrastructure (in this example, \( Q_0 \) takes the value of 100 and \( Q_1 \) takes the value of 50). In essence, the triangle visualizes both the depth of damage and the time required to recover after a disaster.

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5 This definition is largely in line with—albeit somewhat narrower in its scope than—that used by leading funders in this space. USAID defines resilience as “the ability of people, households, communities, countries, and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth.” For the Rockefeller Foundation, “[b]uilding resilience is helping people, communities and institutions prepare for, withstand and emerge stronger from acute shocks and chronic stresses.” The World Bank’s definition appears to be limited to the response element of the definition proposed here, and at a more macro level: “Resilience is characterized by the ability of people, societies, and countries to recover from negative shocks, while retaining or improving their ability to function.”

6 The terms “crisis” and “shock” are used to reflect the fact that some negative events can unfold over relatively long periods of time (such as the effects of climate change), while others can happen quickly (such as an accident or a hurricane). For clarity, we henceforth use the term crisis to represent shocks of any duration.

7 The terms “resilience” and “risk management” are often used interchangeably. Resilience, as defined here, is a capacity, whereas risk management can be distinguished as a manifestation of that capacity.


In order to capture the concept in more dynamic and probably more realistic terms, I expand the original triangle into the framework presented in Figure 2. In this framework, two individuals (X and Y) engage in preparedness (P) and response (R) activities before and after two crises (C1 and C2). Individual X actively engages in preparedness before Crisis 1 (trajectory P_{X1}) while individual Y foregoes that opportunity (P_{Y1}). When Crisis 1 occurs, both individuals have the choice to activate a response behavior (depicted respectively by lines R_{X1A} or R_{Y1A}) or decide not to (R_{X1B} or R_{Y1B}). Depending on these choices, the two individuals find themselves at points L or O (individual X) or Q or V (individual Y) at the end of their response phases.

Risk is traditionally defined as hazard multiplied by uncertainty. In the diagram, hazard represents the impact of the crisis in the absence of resilience strategies (or the length of R_{X1B} or R_{Y1B} lines), while the uncertainty—or the probability, timing, duration and severity of crises—is indicated by the location of the C1 and C2 lines and their “thickness.”

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10 A community may never be able to fully recover from a disaster, especially if another disaster strikes before t1.
The resilience demonstrated by each individual is reflected in the choices they make in terms of preparedness and response—the respective slopes of their P and R lines. The payoffs from individual X’s choice of resilience strategies (shown in green) are measured on the diagram by the size of the area delineated by points KLTSK (the sum of areas KLM and MLTS) if she chooses Response A and by the (smaller) size of KOTS (KON + NOTS) if she chooses Response B. Thus the difference in payoff resulting from her choice of response is denoted by the triangle KLO. Similarly, individual Y’s alternative payoffs (shown in blue) are measured by PQTSP (PQR + RQT) if he chooses Response A and, if he chooses Response B, by the difference between PVU and STVU—which takes a negative value if the former is smaller than the latter. The difference between his two response choices is indicated by the triangle PQV.

The graphical identification of each individual’s payoff after Crisis 1 can be repeated after Crisis 2 (not shown on the graph) and subsequent crises, with the similar result that individuals who invest less in pre-crisis preparedness and activate weaker responses after each crisis find themselves with increasingly lower payoffs at the end of each response period.

We introduce an element of learning in the model as the two individuals consider their preparedness and response strategies for future crises. If the experience of coping with Crisis 1 leads both individuals to engage in more active preparedness before Crisis 2, then their individual preparedness lines (P_X2A or P_X2B and P_Y2A or P_Y2B) are steeper than before Crisis 1; similarly, to the extent that both X and Y choose to react more aggressively when Crisis 2 happens, their response lines (R_X2 and R_Y2) are flatter than after Crisis 1. This learning element will similarly affect the slopes of the preparedness and response lines before and after all subsequent crises (not shown in diagram).

**Broad Applicability of the Concept across the Domestic and International Development Landscapes**

The concept of resilience has traditionally been associated with two inter-related areas of development: climate change and natural disasters. The framework and the program expertise presented in this paper, however, suggest that the concept has the potential to strengthen programs across a much wider portfolio of development areas, in both the domestic and international spheres, such as physical and mental health, food security, toxic waste management, staying in school, and homelessness prevention, among others.

Provided that the definition of crisis is sufficiently broad, both conceptually and temporally, it can refer to any triggering event that results in welfare reductions at the individual, household, or community level. The framework presented in Figure 2, then, allows for the analysis of preparedness and response strategies against a wide variety of crises.

For example, Abt Associates’ work in 13 African countries to protect more than 13 million people against malaria by spraying the inside of homes with insecticide represents a preparedness path such as P_X1 in Figure 2. Because the process is so effective at killing malaria-carrying mosquitoes and takes place entirely before the most intense mosquito season, the action does not necessitate a response strategy, so that any impact of infection will be limited or none (and may resemble a flatter path like R_X1A).

Similarly, Abt’s homelessness prevention work supports community-based programming to help both prevent homelessness (preparedness; path P_X1 vs. P_Y1) and quickly rehouse individuals and families after they become homeless (response; path R_X1A vs. R_Y1B).

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11 Dotted lines indicate alternative choice options.

12 It is unclear whether an individual whose resilience is negative (such as individual Y at point V) would have the resources to invest in a positively sloped preparedness phase such as PY2B’, or whether he would engage in a downward spiral as depicted by PY2B.”

13 As its name indicates, the World Bank-housed Global Facility for Disaster Reduction and Recovery publishes a steady stream of research dissemination documents about approaches to resilience from a disaster perspective.

The latter strategy seeks to reduce the negative impacts of homelessness on families’ well-being by shortening the duration of homelessness.\textsuperscript{15}

Abt’s National Flood Risk Characterization Tool provides flood risk information to help the U.S. Federal government better allocate flood risk management investments, including infrastructure and preparedness investments. In an effort to strengthen preparedness (path $P_{X_1}$ vs. $P_{Y_1}$) and response (path $R_{X_1A}$ vs. $R_{Y_1B}$) against floods, Abt’s web-based tool presents potential flood water levels for regions, broken down by watershed.\textsuperscript{16}

**Four Resilience Strategies**

I propose a four-part classification of the strategies that can affect preparedness and response trajectories in Figure 2. These are behaviors, networks, policies, and products.

**Behaviors.** Decisions and actions by individuals, households, and communities can help build—or damage—their resilience. These behaviors are usually put in place before crises—indeed they can actually prevent these crises from happening at all, such as in the case of engaging in a diet that prevents a heart attack.

**Networks.** Mutual support practices (such as culturally expected reciprocity arrangements among neighbors and relatives) play an important role in protecting households against idiosyncratic risks.\textsuperscript{17}

**Policies.** Governments can engage directly in the provision of risk protection (via US Environmental Protection Agency guidelines, for example), or indirectly through legal and regulatory measures directed at strengthening resilience-building tools (such as setting up and enforcing the regulatory environment for savings mobilization or regulating the interest and terms of U.S. payday lending activities.)

**Products.** Products (physical or financial) that draw on resources and technologies not generally available at the community level—such as commercially underwritten insurance policies—are a critical complement to resilience behaviors, networks, and policies.


\textsuperscript{17} To the extent that networks embody personal attitudes of their members, this element closely mirrors the structural/cognitive dichotomy of the concept of social capital, as described in C. Grootaert and T. van Bastelaer, eds., *The Role of Social Capital in Development*, Cambridge University Press, 2002.

<table>
<thead>
<tr>
<th>Table 1: Examples of Pre- and Post-Crisis Resilience Strategies</th>
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<tr>
<td><strong>Behaviors</strong></td>
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<tr>
<td>Sexual abstinence and contraceptive services, pre-exposure prophylaxis for HIV, diet, preventive medical care, crop rotation practices, hand washing, correct use of bed nets, breastfeeding, antenatal care, saving habits</td>
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<tr>
<td>Social capital, HIV referral networks, farmer cooperatives</td>
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<tr>
<td>Insurance regulatory framework, social safety nets, chemical product regulation, agricultural price policies, Clean Water Act, reduced asset limits for public benefits recipients</td>
</tr>
<tr>
<td>Contraceptives, insurance products, savings accounts, insecticide, high-yield seed varieties, HIV testing kits, vaccines, insecticide-treated bed nets, anti-aflatoxin ground treatment</td>
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* Some of these behaviors depend on the availability of products, underlining the interconnectivity between the strategies.
Examples of these strategies, based on Abt Associates’ work and classified according to the resilience components (preparedness and response) described on page 3, can be found in Table 1.

**The Cumulative Power of the Resilience Strategies**

Taken individually, the above strategies rarely provide the levels of resilience necessary to deal with the variety and severity of risks faced on a daily basis by vulnerable individuals, households, and communities. Behavior-based strategies and networks generally fail when shocks are catastrophic (medical emergency) or affect all households in a community (drought). The effectiveness of behavioral strategies is also limited when policies and products do not support individual behaviors; for example a person who seeks to save cannot do so if she risks losing public benefits—not to mention not having access to affordable savings accounts. Products that build on pre-existing networks and social constructs, such as anti-mosquito chemicals that work best if every household in a community agrees to have his/her house sprayed, are more likely to succeed than tools that ignore local social dimensions. Similarly, products are best sustained when they operate within a supportive policy and regulatory environment, as is the case with health insurance.

The Abt Associates’ experience suggests, therefore, that the success of programs intent on increasing the pre- or post-shock resilience of individuals, households, and communities are likely to increase in proportion to the number of strategies that they incorporate.

For example, Abt implemented and evaluated three strategies for reaching and motivating previously undiagnosed 18-64 year old African American men having sex with men to be tested for HIV and access medical care and prevention services. This activity relied heavily on a combination of behavior and network strategies. More specifically, studies have shown that persons who are aware of their HIV infection reduce risky sexual behaviors and are more likely to prevent HIV transmission. The Abt intervention, by increasing testing for HIV, increased awareness of risk status, which led to early care and modified behaviors. In parallel, the Social Network Strategy (SNS) leveraged by the intervention utilized social networks of HIV positive and high risk HIV-negative persons to identify individuals at risk for HIV within their social network and link them to counseling and testing services.18

Abt is an established leader in designing, setting up, and supporting community-based health insurance programs in Africa. These programs, which build on local or traditional solidarity arrangements to provide financial protection against the cost of medical events, constitute an excellent example of how resilience strategies, when combined and implemented correctly, can provide effective response tools against shocks. In this case, the design of the actual risk-pooling instrument (in terms of benefits package, limits, exclusions, medical provider network, cost, etc)—the product—is enhanced by the quality of the interpersonal relationships within the community—the network. In addition, the behavior of the program participants can also affect its success, particularly in terms of contributing premiums to the scheme as expected, joining the scheme when expecting higher than average medical needs (adverse selection), or overutilizing the medical service (moral hazard).19

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Under its Support Services for Green Prosperity Project in Indonesia, Abt addresses climate change-related issues resulting from rapid urbanization and business development in the country. The company offers technical assistance in the development of land use planning and low targeted emission frameworks. On the product side, Abt developed a “District Readiness Assessment” tool profiling the best use of funds for the Government of Indonesia to regulate its climate change programming throughout the country. In addition, district-level guidelines for participatory land use planning activities were created and shared. This activity was leveraged by the use of existing civil society networks to facilitate multi-level stakeholder forums throughout pilot areas to target the economic and environmental hurdles the program is designed to overcome.20

Cross-Fertilization between the Domestic and International Development Spheres

A joint focus on domestic and international dimensions of resilience has the potential to strengthen the development of the multi-strategy approach to resilience in both spheres. US-based and international workstreams are mutually informative, thus widening the space for cross-pollination across domestic and international efforts.

This is particularly noticeable in Abt's work in the area of asset building. According to a recent study, “assets [in the US] are at least as powerful as income in reducing material hardship after an involuntary job loss or other negative event. [...] The ability to borrow $500 in an emergency does as much to reduce hardship as tripling family income. [...] And having assets determines whether, how much, and where you can borrow.”21 The Grameen Bank (launched in Bangladesh) or ACCION (started in Venezuela) both support financial inclusion programs in the United States, helping create a domestic financial marketplace that meets the lending and asset building needs of families not currently served by U.S. mainstream financial institutions. The applicability of resilience strategies for asset building tends to vary geographically (savings behaviors, for example, have been shown to vary widely between cultures and countries, as do the availability and suitability of social networks to serve as collective savings and lending instruments). However, lessons from developing countries on how to design affordable savings and loan products for unbanked families in the absence of a policy environment actively focused on financial inclusion do carry across to the domestic landscape.

As the political and logistical difficulties encountered by the Affordable Care Act in the U.S. amply demonstrate, the types of obstacles to setting up health insurance mechanisms for low-income families are not necessarily very different in advanced economies from those in developing countries. As Abt Associates' experience with health insurance systems over the last twenty years in several African countries suggests, there are numerous similarities in terms of product design, outreach methods, behavioral risks and, most importantly, political commitment across countries at very different stages of economic development.


Conclusion

The international conversation about resilience is rapidly expanding among experts and development partners as they recognize the value and urgency of adopting more robust resilience strategies across the world. This conversation generally builds on the traditional literature on risk, remains largely confined to the disaster and climate change fields, and lacks specific strategic and programmatic implications.

The conceptual framework and program expertise presented in this paper suggest that this conversation could usefully be expanded by the application of the concept to a much larger number of sectors than has traditionally been the case, by the clear identification and joint support of distinct but interlinked resilience-building strategies, and by the cross-fertilization of ideas and programs between the domestic and international fields.

This paper attempts to increase the return of development investments across countries and sectors by offering a common framework to isolate the components of a resilience strategy that improve individuals’, households’, and communities’ abilities to emerge quickly from crises, and maintain—and even strengthen—a trajectory out of vulnerability and poverty.
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