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Asia Resilience Monitoring, Evaluation and Learning (MEL) Workshop

Participant Manual

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Acronyms

CARE	Cooperative for Assistance and Relief Everywhere, International
CCA	climate change adaption
C4R	Center for Resilience
CLA	Collaborating, Learning, & Adapting
CPAN	Chronic Poverty Advisory Network
DRR	Disaster risk reduction
FAO	United Nations Food and Agriculture Organization
FSIN	Food Security Information Network
FtF	Feed the Future
GFFS	Global Food Security Strategy
IDS	International Development Studies
IE	Impact Evaluation
ICF	ICF International
IFPRI	International Food Policy Research Institute
IMS	Interim Monitoring Studies
IPs	Implementing Partners
MEL	Monitoring, Evaluation and Learning
ODI	Overseas Development Institution
OFDA	Office of Foreign Disaster Assistance
OU	Operational Unit
PBS	Population based survey
PCA	Principal Component Analysis
PPL	Policy, Planning and Learning
RDMA	Regional Development Mission for Asia
REAL	Resilience, Evaluation, Analysis and Learning
RMS	Recurrent Monitoring Surveys
RM-TWG	Resilience Measurement Technical Working Group
RQs	Research questions
SAPLING	Sustainable Agricultural and Production Linked to Improved Nutrition Status, Resilience and Gender Equity
SHOUHARDO	Strengthening Household Ability to Respond to Development Opportunities
STRESS	Strategic Resilience Assessment
TANGO	Technical Assistance for Non-Governmental Organizations, International
TOPS	Technical and Operational Performance Support
USAID	United States Agency for International Development
WFP	United Nations World Food Programme
WV	World Vision

Introduction

The Asia Resilience Monitoring, Evaluation and Learning (MEL) Workshop, supported by the USAID Center for Resilience (C4R) through the Resilience Evaluation, Analysis and Learning (REAL) Award, is intended to provide practical M&E training to participants and facilitate exchange of context-specific learning among USAID staff, implementing agencies and technical specialists in the field of resilience analysis, with a focus on the Asia region. Increasingly, practitioners and researchers recognize the need to better integrate resilience measurement and analysis with programs and policy decision making. This workshop contributes to global efforts to strengthen capacities to use resilience data to inform and improve programs and adaptively manage development and emergency activities.

In 2016, The TOPS Program with USAID held resilience M&E learning events in Cambodia and the Philippines, facilitated by TANGO International and Mercy Corps. These workshops advanced understanding of resilience capacity assessment and measurement concepts among implementing partners and USAID staff, and helped set a foundation for expanding the evidence base for resilience-focused efforts. This July 2017 Asia Resilience MEL Workshop will build on these previous resilience measurement training events in Asia. It will provide a forum to review learning from recent resilience measurement and analysis activities in the region and discuss how this learning can be applied in programs and policy making. Specific objectives are to:

- Provide a brief review of/refresher on basic resilience measurement "boot camp" events held in Cambodia and Philippines;
- Review and discuss findings from recent resilience analysis of FFP programs;
- Review and discuss findings from recent analysis of resilience and poverty dynamics;
- Review ongoing learning from resilience measurement in urban contexts: what we know and what we need to know;
- Discuss opportunities for and means of informing policy and programming related to USAID's Collaborating, Learning and Adapting (CLA) agenda for Asia; and
- Identify and prioritize existing knowledge gaps and opportunities to address these gaps.

The Asia MEL Workshop will be highly participatory – involving participants as "co-presenters" – by drawing heavily on case studies and lessons learned from USAID Mission staff and Implementing Partner representatives. In this way, the workshop is intended to strengthen regional networks and the resilience analysis community of practice in Asia. The workshop also aims to generate valuable inputs for future development of a USAID Asia Resilience Support Plan.

Workshop participants primarily include regional USAID Mission staff and Implementing Partner staff who have had some previous exposure to principles of resilience analysis and measurement and are involved in resilience-oriented programming in Asia.

The workshop will be structured around a series of modules as follows:

Module 1 – July 11: Participants will review resilience concepts, including USAID and TANGO's resilience framework and resilience monitoring, as well as evaluation principles and skills introduced in previous

training events. Module 1 will also review country-specific key issues and analyses from data generated in Nepal and Bangladesh. Participants will have an opportunity to reflect on how their current programming supports factors that contribute to resilience programming areas, focused on how to ensure feedback loops.

Module 2 – July 12: Participants will review approaches to resilience assessment, including guidance on using secondary data for resilience analysis. Module 2 will review Mercy Corps' STRESS Framework and offer a refresher on recurrent monitoring systems (RMS), with a more detailed look into the use of secondary data analysis in Shouhardo II, CARE Bangladesh and RMS in Shouhardo III, CARE Bangladesh. Project-level monitoring and evaluations will also be addressed.

Module 3 – July 13: Participants will consider how to "ensure escapes from poverty", with an evaluation of resilience in the Global Food Security Strategy and a review of ODI Poverty Backsliding Research from the Bangladeshi context. Module 3 will also provide an overview of resilience measurement models in urban contexts and guidance for using Collaborating, Learning and Adapting (CLA) and Shock Responsive Programming. Finally, participants will identify and prioritize knowledge gaps and opportunities to address them.

Module 4 – July 14: USAID Resilience Coordinator/Director of Center for Resilience Greg Collins will present on Regional resilience in Asia. The workshop will close with a facilitated discussion of key takeaways and next steps for resilience initiatives in the region.

This participant manual presents an overview of the modules described above and background information for specific sessions.

Module 1: Review of Resilience Framework, Measurement and Evaluation. Key Findings from Nepal and Bangladesh.

Session 1.1: Resilience Measurement Principles and Framework

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."*

The Food Security Information Network (FSIN) Resilience Measurement Technical Working Group (RM-TWG)[1] has defined resilience as:

> *The capacity that ensures adverse stressors and shocks do not have long-lasting adverse development consequences.*[2]

Using a "resilience lens", we can improve our understanding of shock dynamics and resilience capacities, which are indexed to well-being outcomes. As explained by the RM-TWG, "an optimal

[1] The Resilience Measurement Technical Working Group is co-sponsored by the European Union and USAID and is comprised of 20 individuals from government and non-governmental organizations.
[2] Please see http://www.fsincop.net/topics/resilience-measurement/en/?page=4&ipp=7&no_cache=1

combination of resilience capacities can only be identified by measuring shocks."[3] Key resilience principles include:

- Resilience is a capacity that is exercised both in preparation for and in response to a disturbance or shock;
- Resilience capacity draws on a wide array of resources including human, social, economic, physical, programmatic (e.g., safety nets), and ecological;
- Resilience capacity should be indexed to a given well-being outcome;
- Resilience capacity is often observed at a given level (e.g., household, community), but is conceived as a multi-level construct; and
- Resilience analysis and programs are systems-based and feature interventions that are sensitive to nested dependencies among households, communities, systems and regions.

Strengthening resilience requires an integrated approach and a long-term commitment to improving the three **resilience capacities: absorptive, adaptive and transformative**. Absorptive capacity relates to disaster risk management, as it is the ability of households and communities to minimize exposure to shocks if possible and to recover quickly after exposure. Adaptive capacity is the ability of households and communities to make active and informed choices about their lives and their diversified livelihood strategies based on changing conditions. Transformative capacity relates to system-level changes that ensure sustained resilience.

Conceptual framework components and principles

The conceptual framework for resilience integrates four types of frameworks/approaches: Disaster risk reduction (DRR), climate change adaption (CCA), livelihoods, and ecosystems. Figure 1 presents the resilience conceptual framework referenced during this workshop. Key components of the framework include:

The **context**, namely environmental, political, social, economic, historical, demographic, religious, conflict, and policy conditions. Context influences and is impacted by absorptive and adaptive capacities.

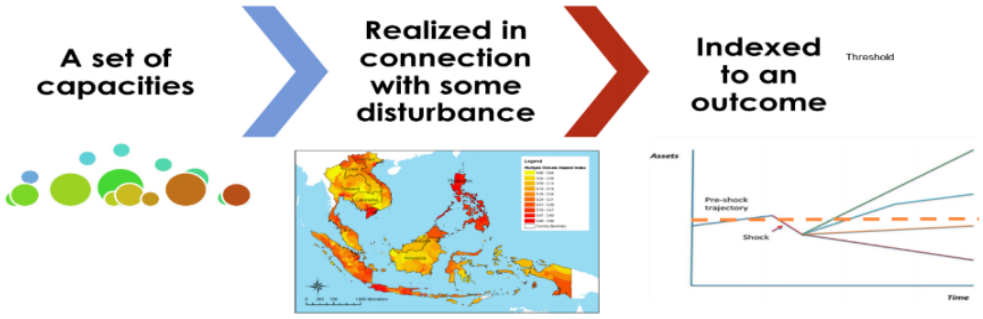
The **level of aggregation**, or unit of analysis (i.e., individual, household or community levels), for building resilience capacities should be determined with the following questions in mind, beginning with: "*resilience to what?"* and *"resilience for whom?"* The **capacities** represent a nested hierarchy that should be considered when determining the target unit. Resilient individuals and households are the foundation for resilient communities. However, resilience at one level does not automatically result in resilience at higher levels. Notably, resilience and vulnerability are not outcomes—they are processes, and the resilience capacities are not linear.

The **type and level of disturbance** are also important to understand, resilience to one type of shock does not ensure resilience to others. This is the point where risk reduction and absorptive capacity are crucial. Resilience can be measured before, during and after shocks to further understand resilience and vulnerability pathways.

Finally, resilience should not be considered an outcome or program goal but instead a determinant of well-being and **livelihood outcomes**, such as food security, poverty, and nutritional status. These

[3] FSIN, 2014 (please see the participation guide for a complete list of references).

outcomes affect future vulnerability to risk. Overall, baseline and endline analysis of well-being and livelihood outcomes, basic conditions, shock exposure and resilience capacity indicators will enable the program—based on the comprehensive assessment and sound problem analysis/theory of change—to determine changes over time in resilience capacities.



Humanitarian and development coordination

Strengthening resilience requires humanitarian and development coordination. To be effective, a resilience approach needs to identify opportunities for **layering**, **integrating**, and **sequencing** programming, described in the box below.[4,5]

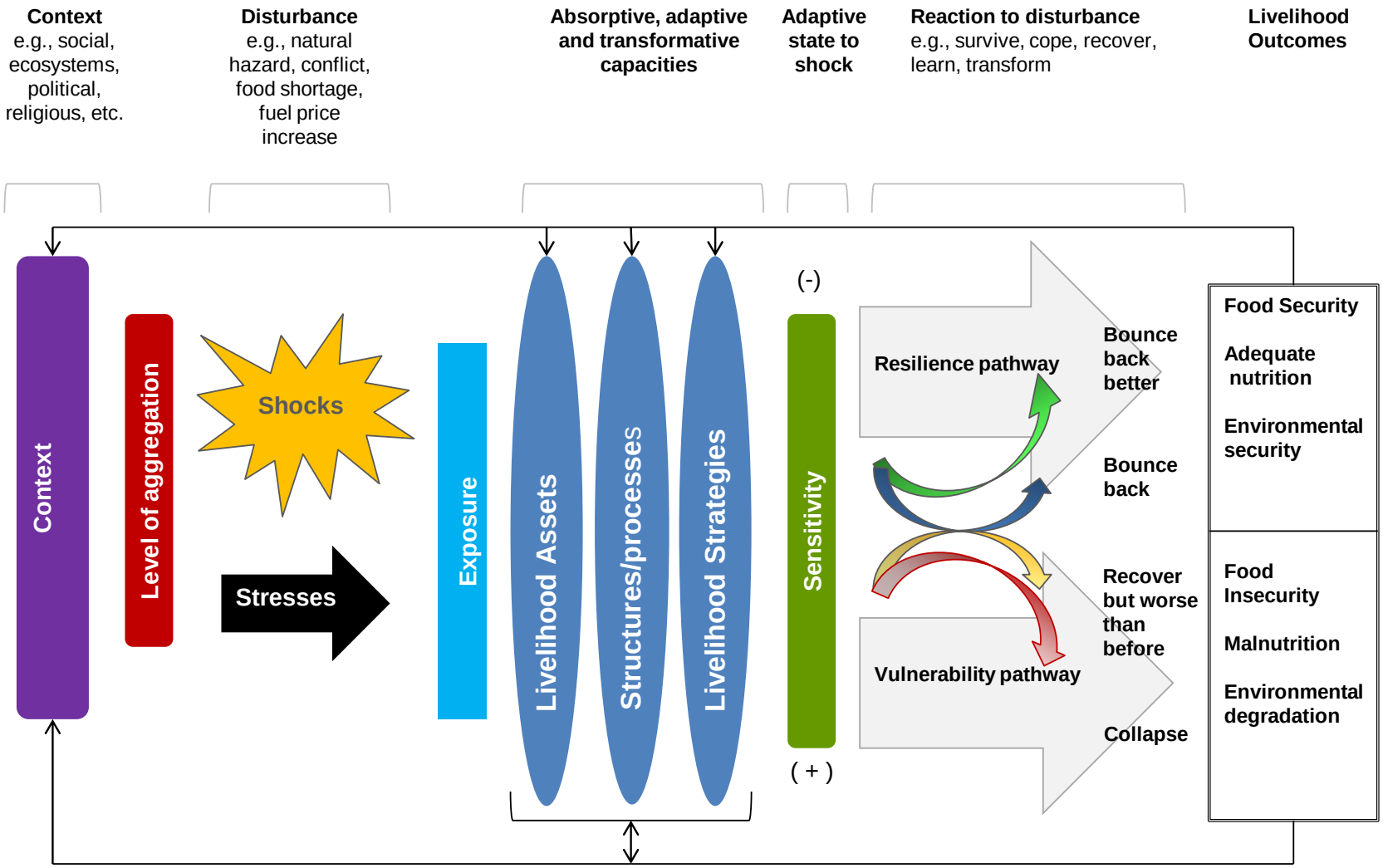
Actively working toward a common goal includes coordination throughout planning, project design, procurement, and learning to help ensure a coherent strategy that strengthens host country systems and institutions. In this context, development programs need to be designed with flexibility to allow for changes that occur on the ground to manage and adjust to crisis modifiers through embedded humanitarian responses. Humanitarian assistance programs need to establish a platform upon which development investments can build to protect development gains.

Layering, integrating, and sequencing humanitarian and development programs for building resilience

Layering: Layering programs involves targeting the same geographic area and demographic population with both humanitarian and development assistance. This allows humanitarian actors a means of protecting development gains, primarily through early and appropriate response to early warnings.
Int*egrating:* When program objectives are integrated, objectives set forth in humanitarian work strengthen development assistance through reinforcing means. Similarly, investments in development assistance can be used as a means of reducing recurrent humanitarian assistance needs and building greater resilience capacities.
Sequencing: Strategic and logical sequencing of programs allows development assistance to transition smoothly from humanitarian work in a way which builds upon the successes of humanitarian programming, both in response and recovery. In this manner, strengthening humanitarian work enhances the existing opportunities towards long-term development work and resilience.

[4] USAID. 2012.
[5] USAID. N.D. Principles of Sequencing, Layering, and Integrating.

Figure 1. Resilience conceptual framework



Frankenberger, T. R., M. A. Constas, S. Nelson and L. Starr. 2014. "Current Approaches to Resilience Programming among Nongovernmental organizations." Building Resilience for Food & Nutrition Security. Paper prepared for the 2020 Conference. Paper No. 7. May.

Session 1.2: Review Resilience Measurement Principles to Guide Programming Decisions

The indicators in Table 1 have been identified for each resilience capacity. These can be single or composite indices that represent some level or state of well-being/condition and can be measured at the household, inter-household, community and higher systems levels.[6] These same indicators may be part of a performance monitoring system and measured at baseline and endline along with changes in risk exposure and resilience capacities. Data may come from surveys, interviews/focus groups, monitoring activities and other secondary sources.

Table 1. Resilience capacity indicators

Absorptive capacity	
Bonding social capital[7]	Conflict mitigation
Preparedness (early warning, response planning)	Low coping strategy Index
Informal safety nets (saving groups, other self-help groups)	Mitigation measures (seed banks, livestock offtake)
Hazard insurance	Ability to recover
Adaptive capacity	
Bridging social capital[8]	Human capital
Diversity of livelihoods in different risk profiles	Asset ownership and use
Aspirations/attitudes/confidence/risk tolerance (psycho-social measures)	Access to financial services
	Access to natural capital/resource flows
Transformative capacity*	
Linking social capital[9]	Policies and regulations
Formal safety nets	Governance mechanisms
Communication networks	High quality basic services
Functioning and well-governed markets	Well-managed and sufficient natural resources
Sufficient quality and quantity of infrastructure	Security

*Transformative capacity building requires a systems perspective to construct measures that reflect the highly interconnected relationships at the systems level.

Analytical framework

Analytical frameworks are useful because they focus measurement activities and because they provide a potential link between the logic of interventions and the organization of data analysis that follows measurement. The resilience analytical framework shown in Figure 1 provides an organizational scheme in which the task of developing resilience measures can be conceptualized and implemented. The components include the:

[6] Please note: The Absorptive, Adaptive, and Transformative Capacities presented are measured on a normalized scale estimated using the Principal Component Analysis (PCA) scale with a mean of zero and a Standard Deviation of one.

[7] Bonding social capital is seen as the bond between community members. Bridging social capital connects members of one community or group to other communities/groups. Linking social capital is seen in trusted social networks between individuals and groups interacting across explicit, institutionalized and formal boundaries in society.

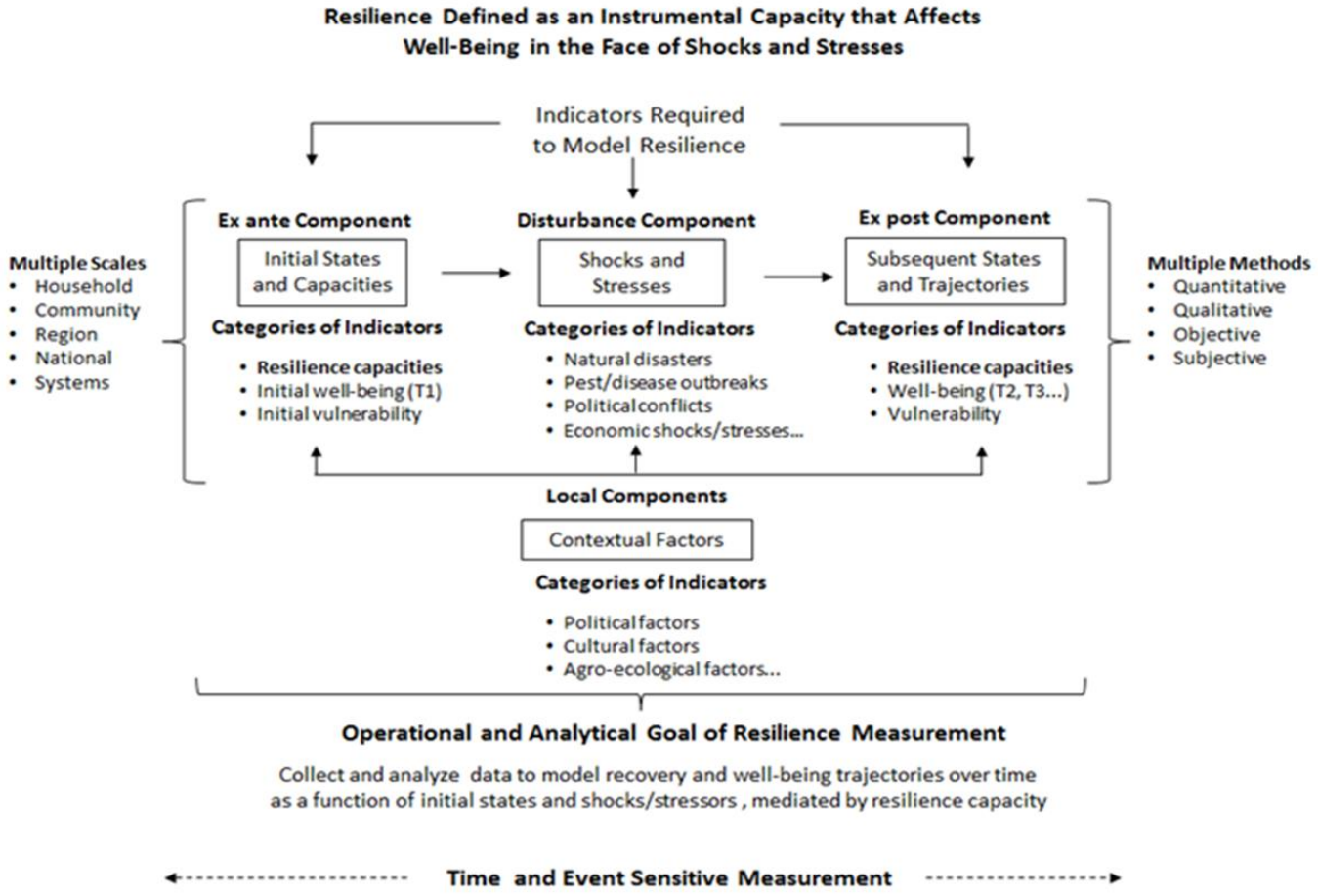
[8] Ibid.

[9] Ibid.

- *Ex ante component* – generates data to describe the initial state at time one (t1), before the occurrence of a shock;
- *Disturbance component* - generates data to describe the intensity and effects of various types of shocks and stressors; and
- *Ex post component* - generates data to describe the end state at time one (t2). There are important considerations for the timing of ex post data collection, such as administering the survey at more than one point in time to ensure that observed patterns of adaptation and transformation are not short-lived.

The added value of using a resilience measurement framework can be further explained on its ability to explain well-being in the face of shocks by providing the "presentation of measurement as a sequence of ordered and observable attributes, events, and conditions" in which cause-and-effect relationships can be tested.[10]

Figure 1. Resilience analytical framework



Source: FSIN, 2014, Series No. 2. The resilience measurement framework was developed by the Food Security Information Network (FSIN) to conceptualize and develop resilience measurements for implementation, which is facilitated through USAID. See also USAID's technical note on "The Resilience Agenda" listed in the references box at the end of this module.

[10] FSIN, 2014, Series No. 2.

Session 1.3: Key Findings from Resilience Studies - Nepal

Nepal Resilience Research Report, 2017

Background. In fiscal year 2015, Food for Peace (FFP) awarded funding for two development food assistance projects (DFAPs) in Nepal: (1) the SABAL project, implemented by Save the Children and its partners; and (2) the PAHAL Project, implemented by Mercy Corps and its partners. The goal of SABAL is to build a more resilient population in targeted areas of the Eastern and Central Hills regions of Nepal. PAHAL's project goal is to build resilience among vulnerable populations to the stressors and shocks that impede local food security in the Mid-Western Hills, Far-Western Hills and Far-Western Mountains regions of Nepal.

Methods and objectives. Quantitative data collection took place from December 2015 to February 2016 as part of a baseline study of the SABAL and PAHAL development food assistance projects. The study, implemented by ICF International (ICF), utilized a population-based household survey (PBS) to collect information on project indicators. The PBS included data collection on contextualized indicators to measure resilience capacities in the project areas. The original sample size was 6,840 households, divided equally between the two project areas and 114 enumeration areas (EAs) drawn from each of the project areas.

This research examines factors that can serve as the foundation for an evidence base for improving resilience programming in the SABAL and PAHAL project areas and provides implementing partners, FFP and USAID with insights into strengthening household and community resilience in Nepal.

Results.

*Household exposure to shocks***.** Households in the survey area experienced an average of three shocks in the 12 months prior to the survey. Earthquake was the most common shock for the entire area (91.7 percent of all households), and nearly universal for SABAL (99.6 percent). This was followed by drought/insufficient rainfall at 64.5 percent in SABAL and 80.2 in PAHAL and market price fluctuations at 76.3 percent in SABAL and 79.3 percent in PAHAL. While nearly all households reported experiencing earthquake, almost half reported experiencing no direct negative impacts from the event. This could in part be explained by the greater distance of the PAHAL region from the epi-center to the earthquake than to the SABAL region. However, compared with households not experiencing earthquakes, these households (earthquake w/o impact) were more likely to experience downstream shocks, namely market price fluctuations and floods/landslides. Additionally, households that reported experiencing negative impacts from shocks, specifically from the earthquake, more often reported a household member falling seriously ill. Other notable shocks experienced in the regions were hailstorms (14.4%), land/forest degradation (4.6%) and crop disease/pests (39.2%).

Coping Strategies. Across the board, coping strategies between the two project areas was different in statistically significant ways. This could, in part, be explained by the proximity the epi-center of the earthquake to the project areas. In general SABAL required more post-recovery relief and received greater formal assistance (68.7%) than PAHAL (1%). This assistance appears to have been targeted appropriately, as only 7 percent of households reporting earthquake but with no negative impact, reported receiving assistance. Comparatively, 74.4 percent of households that reported some form of negative impact from the earthquake received aid. Complicating matters was physical access to the

PAHAL region, where mountainous terrain and poor infrastructure were extremely challenging. In addition to formal assistance, other coping strategies consisted of drawing down savings, reliance on social networks, and increased reliance on remittances. However, these other strategies were generally low across the combined project areas. Overall, SABAL households were able to rely on savings and social networks more frequently than PAHAL households and less than 10 percent of households in the project areas reported using remittances as a means of recovering from shock.

Household Well-being Outcomes. Income, Nutrition and Food security outcome measures were employed in the both SABAL and PAHAL monitoring and evaluation systems and disaggregated by caste. Overall, Newar households measured higher than all other caste groups, across all measured well-being outcomes: income proxy, nutrition, and food security. The Newar households encountered in the project areas suffer zero household hunger, are nearly universally above the poverty line, high dietary diversity, and low childhood wasting.

Alternatively, Dalit households report the poorest performance across all outcome measures, suffering from disproportionally high rates of poverty. This result can likely be attributed to limited economic opportunities based in the historic and ongoing discrimination this caste groups receives. Additionally, while the overall prevalence of hunger was low, Dalit households experienced higher rates (6%) of severe or moderate hunger at the time of the household survey compared to just two percent or less for all other castes. As a reflection of the low prevalence of hunger and high availability of staple foods, utilization of negative food coping strategy usage is extremely low. Prevalence of child wasting was also generally low; Dalit households (8.1 percent) have the highest rate, followed by 6.6 percent of Brahmin/Chettri households, 4.0 percent of Janajati households, and only 2.3 percent of Newar households.

Household Resilience Capacities.

Absorptive Capacity. Analysis indicates that Newar households have the highest levels of absorptive capacity and Dalit household the lowest, 39.0 and 30.1 respectively, out of a possible 100. Higher levels of absorptive capacity for Newar households appear to be driven by high levels of cash savings (80.2 percent) and higher asset levels (4.2 assets out of 15). In contrast, the remaining castes report much lower cash savings and assets, and consequently lower absorptive capacity. Only two-thirds of Brahmin/Chhettri (65.6 percent), Janajati (61.7 percent) and Dalit (60.0 percent) households report saving cash. Additionally, Newar households report a owing on average 4.2 assets, while Brahmin/Chhettri (3.0) and Janajati (2.9) indicating having 1.2 fewer assets, with Dalit (2.5) reporting even less at 1.7 fewer assets than Newar households. Absorptive capacity was calculated at 32.9 percent for Brahmin/Chhetri and 30.2 percent for Janajati households. While informal safety nets, a key component of absorptive capacity, were reported at high levels, formal safety nets generally low across castes and the sample overall. Additionally, household participation and access to shock preparedness and mitigation activities is low, averaging 0.3 to 0.4 on a scale of 3 potential activities. This may reflect a lull following a flurry of formal relief activity happening in the previous year in response to the April 2015 earthquake. However, this could also reflect a structural deficiency in community and social service infrastructure that support shock preparedness.

Adaptive Capacity. Both Newar and Brahmin/Chhetri households demonstrated higher adaptive capacity with an average value of 43.1 percent and 40.7 percent, respectively. However, both Janajati (36.7 percent) and Dalit (35.1 percent) households, once again scored on average lower. Driving the differences in adaptive capacity scores could be the disparities in education, linking social capital, and asset levels. Over three quarters of Newar (76.9 percent) and Brahmin/Chhetri (76.7 percent) households report a household adult with primary education or higher, while Janajati and Dalit reported only 66.1 percent and 59.1 percent respectively. Higher education levels may reflect the disparity observed between the level of assets owned in Newar households and less educated Dalit households. Meanwhile, Brahmin/Chhetri households might be receiving a boost from stronger linking capital scores, reporting on average higher at 1.4 out of a potential 6. Overall, access to broader social networks (linking and bridging social capital) was relatively low, demonstrating a strong reliance existing networks within the communities.

Transformative Capacity. Newar households, on average, are score a slightly higher (38.7 percent) levels on the transformative index. The other castes fall in a lower range from 31.7 percent in Janajati households to 34.0 percent in Brahmin/Chhetri households. There were few differences in the underlying components in the transformative index across castes. However, nearly one-third of Newar households (29 percent) benefit from access to agricultural extension, compared to rates ranging between 16 percent (Janajati) and 20 percent (Dalit) for other castes. Access to markets is relatively low for all households in the project areas, with roughly one-third of households reporting an existing market within 10 km.

Livelihoods. Farming and livestock production and sales are the predominant livelihoods across both project areas. Nearly all households engaged in crop production and sales while 78 percent of all households engage in livestock production. Agricultural wage labor within the respondent's community is also reported as an important source of income and food across the two project areas with an average 15 percent of households practicing this livelihood. Additionally, both non-agricultural wage labor (34.5 percent of PAHAL and 27.5 percent of SABAL households) and remittances also play a role. Notably, households whose only livelihood activity stems from agriculture have generally lower levels of absorptive, adaptive, and transformative capacities than households that engage in at least one non-agricultural livelihood activity, have access to remittances, or have access to a livelihood activity outside their respective community.

Resilience capacities and outcomes.

Probability of poverty. Households with higher absorptive or adaptive capacity are less likely to be poor. A movement from the bottom quarter to the top quarter of absorptive and adaptive capacity predicts a (minimum) 7 to 9 percent absolute reduction in the level of poverty.

Expenditures. Households with higher absorptive, adaptive, or transformative capacity are more likely to earn higher income. A movement from the bottom quarter to the top quarter of absorptive and adaptive capacity predicts a (minimum) 6 percent increase in income. A similar movement in transformative capacity predicts a 2.5 percent increase.

Household dietary diversity. Households with higher absorptive, adaptive, or transformative capacity are more likely to have more diverse diets. A movement from the bottom quarter to the top quarter of

absorptive and adaptive capacity predicts an increase of 0.5 food groups on average. A similar movement in transformative capacity predicts a 0.1 increase.

Hunger. Households with higher absorptive or adaptive capacity are less likely to have moderate or severe hunger, although the influence is not very strong. A movement from the bottom quarter to the top quarter of absorptive and adaptive capacity predicts roughly 2 percent decrease in household hunger.

Recovery from shocks. Households with higher absorptive or adaptive capacity are more likely to recover from shock. A movement from the bottom quarter to the top quarter of absorptive and adaptive capacity predicts a (minimum) 5 to 7 percent better chance of recovery from shock.

Absorptive, adaptive, and transformative capacities: The strongest relationships

This section focuses on how changes in components of the resilience capacity indexes are predicted to affect different outcomes; particularly components that have the strongest effects, both in terms of statistical significance and magnitude. The intent of this approach is to examine the extent to which a combination of variables (i.e., as defined by a given index) has a stronger (or weaker) effect on an outcome than any individual variable. Key findings are:

- Access to markets and increases in household assets are strong enablers of household recovery from shock.
- Multiple components of resilience capacity have a direct influence on reducing hunger, however absorptive and adaptive capacity reduce hunger more than any of these single other measures alone.
- Similarly, there are several components of resilience capacity have a direct influence on reducing poverty. However, absorptive and adaptive capacity reduce poverty more than any single other measure alone. Reductions in poverty predicted by higher absorptive or adaptive capacities are quite strong.

Shock coping strategies, resilience capacity, and outcomes. The results presented in this section demonstrate the relationships between well-being outcomes and household response to shock. Key findings are:

- Households that relied on savings and remittances as coping strategies for shock had better recovery outcomes. Alternatively, households that received any type of formal assistance or relied on informal help were less likely to recover.
- Households relying on savings and household that used remittances to help recover from shock were 6- 7 percent more likely to recover. Conversely, households that received formal assistance were 7-8 percent less likely to have recovered at the time of the survey; households that relied on others were 9 percent less likely to recover.

Utilization of anticipated project-promoted practices.

Agricultural practices. Overall, utilization of agricultural financial services and adoption of improved agricultural practices is relatively widespread across the combined project areas.

- Utilization of agricultural financial services is high, 59.3 percent of PAHAL households and 74.1 percent of SABAL households.
- Just over 50 percent of households in the project areas have adopted a value chain activity at the time of the baseline survey.

- Adoption of improved storage practices in the PAHAL households (50.5 percent) is nearly double of households in the SABAL project-area (27.5 percent). Additionally, nearly 60 percent of households in the PAHAL area report adoption of at least 3 sustainable crop, livestock, or NRM practices and over one-third of SABAL households (36.1 percent) report adopting 5 or more of these practices.

WASH practices. Most households in the combined project areas have improved sanitation (69.6 percent), access to an improved water source (59.2 percent), and a reasonable commute to a water source (87.6 percent). Consistent with the relatively high access to improved sanitation, rates of open defecation are low; However, only half of SABAL households (51 percent) and one-third of PAHAL households (35.7 percent) practice proper handwashing techniques. Additionally, rates of application of correct water treatment practices are very low across both areas, 12.8 percent in the SABAL project area and 6.7 percent in the PAHAL project area.

WASH/sanitation/agricultural practices, resilience capacity, and recovery. The analysis in this section seeks to determine the influence adoption of improved agricultural practices, better WASH behaviors, and improved sanitation have on recovery outcomes. Key findings are:

- Improved WASH, sanitation, and agricultural practices do not directly support household recovery from shock; but alternatively, these outputs lead to an intermediate outcome of higher household resilience capacity, and subsequently, improved recovery from shock.
- Evidence supports that WASH, sanitation, and agricultural practices exhibit little to no direct relationship with recovery from shock. Alternatively, these behaviors, practices, and characteristics strongly support adaptive and absorptive capacities.
- Statistical evidence does link improved WASH, sanitation, and agricultural practices to increases in adaptive and absorptive capacity and, consequently, better recovery outcomes.
- Households that utilize an agricultural financial service, use correct water treatment practices, practice a portfolio of agricultural practices, and do no openly defecate have notable higher levels of expected absorptive and adaptive capacity.

Session 1.4: Key Findings from Resilience Studies: Bangladesh

Bangladesh Resilience Research Report, 2017

Background.[11] The 2016 Bangladesh Baseline Study is part of a series of USAID FFP baseline studies of DFAPs awarded during FY 2015. The FFP program in Bangladesh aims to reduce chronic and acute malnutrition and food insecurity and improve resilience to disasters among vulnerable populations. In conforming to its overall goal, FFP awarded funding to implementing partners to implement three multiyear DFAPs in 11 districts of Bangladesh.

- CARE implements the Strengthening Household Ability to Respond to Development Opportunities 3 (SHOUHARDO 3) in 8 districts in North Char, Mid-Char and the Haor region. The goal of *SHOUHARDO3* is to build a more resilient population in targeted areas of the Char and Haor regions of Bangladesh by precipitating or causing three primary changes: empowerment, governance, and engagement.
- World Vision and its partners implements Nobo Jatra Project to improve gender-equitable food security, nutrition and resilience, which targets four upazilas in southern coastal areas of Khulna

[11] USAID Baseline Study of Food for Peace Development Food Assistance Projects in Bangladesh.

and Satkhira districts. Nobo Jatra's project targets households in the Southern Coastal areas of Khulna and Satkhira districts. The project aims to address the underlying causes of chronic food insecurity by improving knowledge, capacity, and links to food production and income generation and facilitate improvements in household assets and savings.

- Helen Keller International and it local partner implements the Sustainable Agricultural and Production Linked to Improved Nutrition Status, Resilience and Gender Equity (SAPLING) project in five upazilas in Thanchi, Ruma, Lama, Rawangchari and Bandarban Sadar districts in the Chittagong Hill Tracts. *SAPLING's* project goal is to build resilience among vulnerable populations by using a multi-sectoral approach that includes increased homestead production, consumption of diverse, nutritious foods, and improved capacity to mitigate and adapt to disasters.

Objective. The objective of this research is to provide implementing partners, FFP and USAID with insights into factors that strengthen household and community resilience in Bangladesh. This report complements the Baseline Study implemented by ICF International in Fiscal Year 2016. The research examines factors, in the context of resilience and mitigation of the negative effects of shocks and stresses on well-being, which can serve as the foundation for an evidence base for improving resilience programming in the *SHOUHARDO3*, *Nobo Jatra*, and SAPLING program areas.

Methodology. Quantitative data collection took place in two phases from April 12 to June 5 2016 as part of a baseline study of the *SHOUHARDO3, Nobo Jatra*, and SAPLING development food assistant projects funded by USAID and FFP. The study, implemented by ICF International, utilized a population-based household survey to collect information needed to report project indicators, including those measuring resilience capacities of households in the program areas. The original sample size of households that responded to the resilience module of the survey was 3,438 households overall, divided fairly equally among the three program areas. The quantitative data analysis was conducted with Stata SE version 13.1. Both descriptive and multivariate results incorporate sample weights and techniques necessary (i.e., complex sample corrected standard errors) to account for the clustering and stratification used as part of the sample design. Resilience capacity indexes are generated using (exploratory) factor analysis methods and are consistent with the methods employed by ICF as part of their baseline analysis of the *SHOUHARDO3, Nobo Jatra*, and SAPLING projects (ICF 2016).

Results.

Exposure to Shock. The types of shocks experienced in the previous 12 months differed widely across the three program areas. For example, more than twice the number of households in the *SHOUHARDO3* experienced flashflood and deforestation compared to the other two program areas; conversely, more than twice the number of households in SAPLING versus either *SHOUHARDO3* or *Nobo Jatra* suffered water scarcity, landslide and flooding from excessive rainfall. Serious illness was the one consistent shock across all program areas. Overall, households reported experiencing an average of 2 shocks over the course of the previous 12 months. Finally, despite the variation of shocks across program areas, there was no difference in the level of severity.

Coping Strategies. Utilization of negative food coping strategies, in particular, reducing food consumed, changing the types of foods consumed and spending less money on food, were more common than not

across all program areas. Between half to three-quarter of the households in the three program areas reduced or changed their patterns of food consumption, reduced expenditures and/or borrowed money as a means of coping with shock in the previous 12 months. Of those households that utilized these coping strategies, a majority consumed less meat, spent less on housing expenditures, and relied on friends/relatives for money.

Well-being outcomes. At the time of the ICF Baseline Study household survey from April to June of 2015, well-being as measured by food security (i.e., hunger, dietary diversity, and food consumption) indicate that many households were recovering from any negative food security impacts of shocks experienced in the past year. The prevalence of severe to moderate hunger ranged between 6.8 and 7.2 percent (across program areas), household diets were relatively diversified, ranging from 6.5 to 7.3 on the household dietary diversity scale, and food consumption scores ranged from 55.5 to 63.4. However, Additionally, although the percent of households with a wasted child was 14.5 percent across the program areas, twice as were seen in *Nobo Jatra* compared to the other two program areas (21.0 percent vs 12.8 and 9.5).

While poverty appears to be a persistent problem across all program areas (31.0 percent), this is accounted for primarily by the nearly twice as many households in *SHOUHARDO3* (40.3 percent) living in poverty relative to those in *Nobo Jatra* (16.7 percent) and SAPLING (19.2 percent) program areas. Correspondingly, *SHOURHARDO3* households had the least amount of daily spending money ($2.13USD) compared to either *Nobo Jatra* or SAPLING households ($2.94USD and $3.07USD, respectively). Mirroring the pattern seen in food security, more *Nobo Jatra* households had recovered from shocks (34.8 percent) relative to their counterparts in *SHOUHARDO3* (24.5 percent) and SAPLING (23.7 percent) program areas

There is an unexpected pattern of outcomes among the *Nobo Jatra* households; even though they have the lowest rates of poverty and highest degree of dietary diversity and recovery among the three program areas, child wasting is twice as high.

Household Resilience Capacities: Levels of household resilience capacity, namely absorptive and adaptive capacity, differ significantly across program areas. In particular, *Nobo Jatra* households have higher levels of absorptive capacity (20.6 out of 100) compared to the other two program areas (14.0 in SAPLING households and 16.0 in *SHOUHARDO3* households).

Adaptive Capacity. Differences in absorptive capacity are mainly driven by differential rates of household savings and accumulation of household assets, which represent a proxy for wealth. *Nobo Jatra* households own more assets (4.5 versus 2.6 to 3.4) and are more likely to report households savings (28.8 percent vs. 19.0 22.9 percent) compared to other program areas.

Adaptive Capacity. *Nobo Jatra* households also have higher levels of adaptive capacity (53.2 out of 100) than SAPLING (36.0) and *SHOUHARDO3* households (42.9). Education, wealth (assets), and livelihood diversity explain this differential across program areas. Nearly all *Nobo Jatra* households (93.2 percent) report a household adult with primary education or higher. In contrast, the percentages of *SHOUHARDO3* and SAPLING households with an educated adult are 77.1 percent and 71.1percent, respectively. Livelihood diversity is highest in *Nobo Jatra* (3.0) compared to 2.6 and 2.3 in the other two

program areas. As noted above, *Nobo Jatra* households, on average, have higher household assets than other program areas, helping to contribute to both higher absorptive and adaptive capacities.

Transformative capacity. Transformative capacity levels are low across all three program areas (6.8 out of 100). Average levels of transformative capacity of households range from 6.4 in *Nobo Jatra* to 7.6 in SAPLING. While there are no statistical differences, the variation in transformative capacity levels is accounted for primarily in access to agricultural extension services, where SAPLING households had the highest degree of access (14.2 percent) compared to 12.5 and 12.8 among *SHOUHARDO3* and SAPLING households.

KEY FINDINGS

Households with higher absorptive and/or adaptive capacity are less likely to be poor, are more likely to earn higher incomes, have diets that are more diverse, and are less likely to be hungry. This is true (controlling) for any level of shock. However, of the two resilience capacities, absorptive capacity has the greatest impact on reducing poverty, increasing incomes, improving dietary diversity, and decreasing household hunger.

Transformative capacity, as measured in this study, does not have as strong of an influence on improvements in well-being. In particular, transformative capacity is weakly, but positively associated with higher dietary diversity and increased likelihood of utilizing coping strategies. Households with more transformative capacity also tend to have a decreased ability to recover from shock and higher levels of childhood wasting. The weak relationship between transformative capacity and outcomes could be a reflection of the inability to capture salient dimensions of transformative capacity, such as quality of infrastructure and services and equitable distribution of services.

In the context of resilience capacity, there are several underlying components of resilience capacity that directly support improvements in poverty and hunger, independent of their influence on absorptive, adaptive, or transformative capacities. Increases in household assets and bonding social capital, consistently and directly, are associated with better outcomes. Increased adoption of improved agricultural practices and greater access to formal safety nets directly support reduced hunger; while greater access to remittances, access to financial resources, higher education levels and greater livelihood diversity directly support reduced poverty.

Module 2: Approaches to Resilience Assessment, Secondary Data for Resilience Analysis, RMS in Resilience Projects

Session 2.1: Findings and Lessons Learned - *STRESS 101 Refresher*

What is Mercy Corps' STRESS Approach?[12,13]

Over the past five years, Mercy Corps has developed and refined the Strategic Resilience Assessment, or STRESS to have a process that uses a systems approach to model the complex and dynamic relationships between risks, people and the socio-ecological systems in which they inhabit in order to design and effectively implement resilience-building strategies. While STRESS is not the only approach to conducting a resilience assessment, it may be the most refined and formalized process based on experiences from nine countries across South-East Asia and Sub-Saharan Africa where Mercy Corps has significant investments focused on building resilience.

There are three major tangible outputs of the STRESS process (or, in theory, any assessment applying a resilience lens), including: 1) a risk profile, 2) identification and understanding of critical resilience capacities, and 3) a theory of change (ToC) for resilience-building strategies grounded in a comprehensive contextual analysis. By developing a theory of change based on an understanding of the complex operating environment and how households and communities manage prevalent shocks and stresses, the STRESS process is also useful for identifying key measures to monitor and evaluate against. Finally, the participatory and iterative nature of a STRESS also increases awareness and understanding of stakeholders of the value and process of operationalizing a resilience approach.

How is a STRESS Conducted?

This section provides a very brief overview of the STRESS process and additional guidance on conducting resilience assessments is available from the REAL initiative website and Mercy Corps.[14] The STRESS process is guided by four guiding resilience questions that frame how resilience programming is designed and implemented. The questions seek to identify those who are vulnerable and the root causes of their vulnerability through an integrated systems approach.[15]

1. **Resilience of what?** *(What are we hoping to build the resilience of?)*
   This question delineates the geographic boundaries as well as the social, economic, and ecological systems that bind the target area– including formal/informal institutions, infrastructure, social, ecological, and economic factors that affect the population's ability to anticipate, absorb and adapt to shocks and stresses. Elements of the social systems include the relationships, networks, and

[12] The following sections are adapted from: Vaughan, E. and Henly-Shepard, S. (2017) Resilience Measurement Practical Guidance Series: Guidance Note No.1 – Risk & Resilience Assessments. Available from: http://www.fsnnetwork.org/resilience-measurement-practical-guidance-series-guidance-note-no1-%E2%80%93-risk-resilience-assessments
And: Petryniak, O. (2016) Urban Resilience Measurement: An Approach Guide and Training Curriculum. Available from: https://www.mercycorps.org/sites/default/files/Urban%20Resilience%20Measurement_Training%20Guide_FINAL.pdf

[13] Source unless otherwise noted: Mercy Corps. 2015. The STRESS Process at Mercy Corps.

[14] See here: http://www.fsnnetwork.org/resilience-measurement-practical-guidance-series-guidance-note-no1-%E2%80%93-risk-resilience-assessments
And here: https://www.mercycorps.org/sites/default/files/STRESS_Doc_R7%20%281%29.pdf

[14] Mercy Corps. 2015. Our Resilience Approach

norms between individuals, households, and communities. Elements of the ecological systems include the ecosystem and the natural environment that support the principal livelihood strategies of the target area while elements of the economic systems include the production and consumption activities.

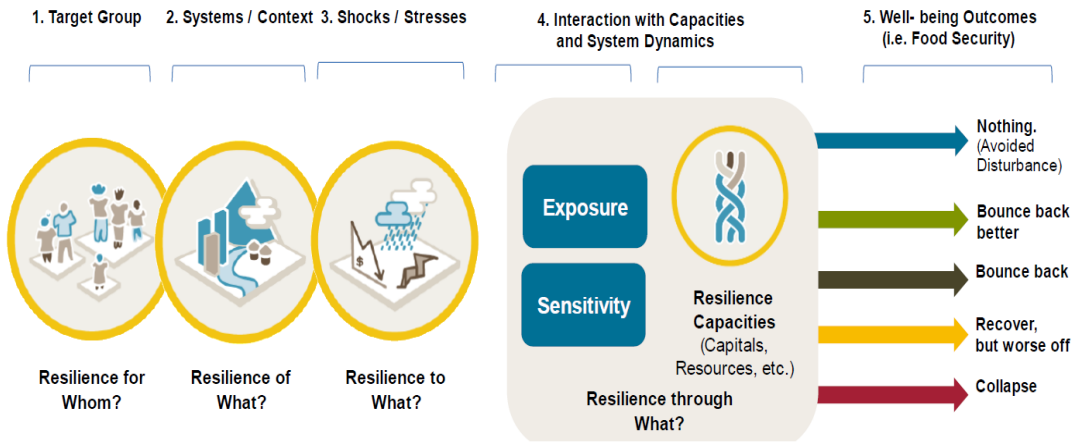
2. **Resilience for whom?** *(Whose resilience are we trying to build? Who are we building resilience for?)*
   This question investigates who is your target population by seeking the social and geographic drivers of vulnerability for different social groups. By investigating varying degrees of vulnerability across social groups, program design can better target those households and communities who may be more exposed to shocks and to stresses and who may have a more difficult time recovering. When identifying your target population, also consider their key attributes like location (urban, rural, inland, coastal, etc.), demographic factors (sex, age, ethnicity, etc.), and livelihood strategies.

3. **Resilience to what?** *(What are the main shocks/stresses that affect the population? In what ways?)*
   This question helps to identify and prioritize which shocks and stresses plague a target population by identifying the threats that can destabilize households and communities. This allows for resilience programming to refine how to address risk across different systems and temporal scales.

4. **Resilience through what?** *(What are the key capacities that make the target population resilient to shocks and stresses?)*
   This question in the STRESS approach addresses the need to strengthen the three resilience capacities (absorptive, adaptive, and transformative) in order to better equip individuals, households, communities, and systems to prepare for and deal with risk over time.

These four questions can be conceptualized as a framework (Figure 2) to focus the STRESS process; otherwise, assessing resilience can easily become too broad and unwieldy. This framework also supports a sector-neutral analysis process, which is necessary because resilience contributes to a wide array of development outcomes across sectors, and multiple sectors are needed to effectively build resilience and lead to potentially transformational change.

Figure 2. STRESS conceptual framework



To answer these key questions, a systematic and iterative process is used which is comprised of four phases:

1. **Scope:** Review team and expert knowledge through participatory workshops and identify knowledge gaps to define and refine the purpose, scope and scale of the STRESS
2. **Inform:** Conduct secondary literature review; complement with qualitative field methods
3. **Analyze:** develop risk profiles and evaluate resilience capacities
4. **Strategize:** develop a resilience-focused, measurable theory of change

Using the four guiding questions, the STRESS approach frames the design and subsequent facilitation of a resilience programming TOC. This is accomplished as a learning process in which preliminary information is gathered to understand the situation and then built upon and adapted throughout the life of the assessment.

Through the STRESS assessment, the TOC becomes the description through which a resilience program is operationalized. It is through the TOC that a measurable path from interventions to a desired outcome is described using a written or illustrated diagram. Through individual programs, a TOC is tested and adapted for future programming, making the TOC flexible enough to different circumstances as lessons area incorporated.

It is through this adaptive management approach that the design, planning, and implementation of a resilience program are guided. This allows for actions to guide advancements through a refinement of practices following continual monitoring. This provides an evidence-based learning process that incorporates scientific and local knowledge that shapes resilience programming and can be shared across different stakeholders and partners for effective interventions and meaningful impacts.

The four objectives of STRESS are to:

1. Identify and analyze the ways in which shocks and stresses impact development outcomes at various levels (local, regional, national);
2. Define the ways in which shocks and stresses impact certain subgroups or geographies in different ways as well as defining underlying factors that worsen these impacts;
3. Understand capacities and opportunities in the face of shocks and stresses through the resilience capacities (absorptive, adaptive, transformative); and
4. Develop capacity-building for a resilience programming team to understand complexity for future resilience work.

Session 2.2: Findings and Lessons Learned (Cont.) – *Using secondary data to conduct a resilience assessment data: Informing USAID Bangladesh's strategy*

Report: USAID/Bangladesh Comprehensive Risk and Resilience Assessment

Background. The last two decades in Bangladesh have seen progress in poverty reduction. Individual projects have demonstrated positive results in core areas of development in the country such as agriculture, health, and emergency planning. However, these positive outcomes have been insufficient in terms of geographic coverage, impact on different economic groups, effects on men versus women, and effects on different vulnerable groups. Moreover, the sustainability of impacts is continually

threatened given Bangladesh's increasingly complex risk environment. Population growth, climate change, fluctuating global markets, political instability, inadequate governance mechanisms and human resource capacity to manage these risks are major challenges and merit a reexamination of current development strategies. Given Bangladesh's topography, long and complex coastline, high population, and increasing urbanization, of particular concern are climate projections of more frequent and intense drought, rainfall, sea-level rise, and cyclones over at least the next 20 years. These recurring shocks and stresses, already a substantial part of Bangladesh's risk profile, will demand significant resilience from Bangladeshi households, communities, and systems to prevent declines in development outcomes such as backsliding into poverty. 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."

Objective. This risk and resilience capacity assessment seeks to inform the USAID Bangladesh Country Development and Cooperation Strategy, future program design, and current program implementation. The intended audience is USAID Bangladesh, its partners, and other stakeholders. Using a resilience framework, the assessment aims to provide a comprehensive understanding of Bangladesh's complex risk environment and the capacities of people, households, and communities to mitigate, adapt to, and recover from the shocks and stresses they face.

Method. This approach assesses contextual factors such as social, political, ecological, and economic systems and identifies vulnerabilities in the local context. The assessment draws on literature provided by USAID; qualitative risk and resilience capacities data and narrative from the Food for Peace endline surveys; assessments and evaluations pertaining to risk and resilience in the Feed the Future (FTF) Zone of Influence (ZOI); IFPRI data on movements into and out of poverty; a study by the Overseas Development Institute on sustainable poverty escapes and backsliding in Bangladesh; maps developed by GeoCenter on the impacts of specific shocks and stresses; and other relevant reports and papers identified in online searches. The report covers areas considered most vulnerable to prevalent shocks and stresses, including but not limited to the FTF ZOI in the Khulna and Barisal divisions in southwest Bangladesh.

The main limitation to this review is the scope of academic and grey literature that is written from a resilience perspective in the Bangladesh context. There is a particular gap in terms of resilience-oriented impact evaluations of development projects. To mitigate this challenge, we have brought in more recent analyses conducted using resilience measurement methodology on existing data from select USAID-supported projects.

Results.

*Main findings: Shocks and Stresses***.** Bangladesh's geographic features and location between the Himalayas and the Bay of Bengal leave it exposed to numerous natural shocks, particularly floods, flash floods, drought, salinity and cyclones. River and urban flooding have increased the spread of vector- and waterborne illness, especially as improper waste management clogs drain channels and water run-off, contributing to freshwater contamination. Increasing water salinity and drought are compounding the freshwater crisis. Other major impacts of flooding and drought are large crop and asset losses that can stress food security and strain income and job opportunities in impoverished rural and disaster-prone regions.

Climate change aggravates Bangladesh's vulnerability to these extreme weather events: higher temperatures and melting glaciers are intensifying the occurrence and severity of cyclones, floods, and drought. Rising sea levels, increasing temperatures and melting glaciers are creating more erratic and

unpredictable natural hazards that contribute to overall vulnerability. Large climate shocks create massive damage and loss of assets that can place stress on household incomes and on national economic growth and stability. In addition, natural shocks have downstream health and economic consequences, forcing significant livelihood changes. For example, climate-related shocks are driving migration to urban centers. This rapid urbanization is poorly planned, taxing the urban infrastructure and environment. Slum dwellings are densely populated, without the necessary public services to prevent the spread of disease.

Growing political uncertainty and security risks are contributing to a weaker governance structure, placing economic and civil stability in question while potentially interfering with Bangladesh's ability to court future international investment and aid to help reduce poverty and build resilience.

Main findings: Vulnerable Groups. Chronically vulnerable groups in Bangladesh include people who are exposed to physical hazards such as natural disasters, the chronically poor, the rural poor, women and children, street children, people with disabilities, and Rohingya refugees. The poor are especially vulnerable to natural disasters due to their higher level of exposure, both physically and in terms of ecosystem- and climate-dependent livelihoods such as agriculture and fishing. Low levels of empowerment and cultural norms, such as those restricting women's mobility, increase women's vulnerability to disasters. Children are particularly vulnerable to food insecurity and the effects of malnutrition. Poverty escapes – and, conversely, poverty backsliding – are each correlated with different sets household characteristics and conditions.

Main findings: Well-being Outcomes. Resilience is linked to development outcomes, and both are influenced by absorptive, adaptive, and transformative capacity at individual, household, and community levels. Outcomes related to resilience include food security, poverty, and health and nutrition. Food security and nutrition outcomes have been shown to be improving in the FTF ZOI, as evidence from USAID Title II projects indicates; this may be attributed to program interventions but also to national trends. Systems-level outcomes have also seen progress, though enhanced attention is needed on building the capacities to support these outcomes, such as governance work and improvement and expansion of critical infrastructure (e.g., roads, water resource management infrastructure, the electric power grid, and emergency response infrastructure).

Main findings: Resilience Capacities.

Absorptive capacity is the ability to minimize exposure to shocks and recover quickly. Interventions in building and strengthening absorptive capacity have made strong contributions to resilience at the household and community levels. Analysis of data from both PROSHAR and SHOUHARDO II shows a strong correlation between absorptive capacity and improved food security outcomes in the face of shocks. Interventions to strengthen disaster risk reduction and response capacity have reduced loss of lives and assets. Strengthening absorptive capacity through disaster risk reduction interventions is critical, especially in an area as disaster-prone as Bangladesh.

Adaptive capacity is the ability to make informed choices about alternative livelihood strategies based on changing conditions. Access to information, such as information about climate trends and work availability, contributes to adaptive capacity, and has been weak in some areas. For example, studies have shown that farmers tend to receive inadequate weather and climate information, which would otherwise help them make short- and long-term decisions about what crops to plant and when. Research on SHOUHARDO II provided strong evidence that to suggest that adaptive capacity – specifically in the form of bridging social capital, asset ownership, livelihood diversification, human capital, and aspirations and confidence to adapt – was a significant factor in helping households to mitigate the impacts of severe flooding in 2014.

Based on the IFPRI studies in the FTF ZOI, another important factor shown to strengthen adaptive capacity is having higher-value assets such as land, and savings, both of which help households avoid falling into poverty and increase household diet diversity. In addition, those who have access to commercial loans are better able to invest in ways that will increase their future ability to adapt. For example, investments in mechanized irrigation can improve production and income level, which in turn can enable further beneficial practices such as fertilizer use, and open doors for more investment in human capital (education).

Transformative capacity is comprised of system-level enabling conditions such as governance mechanisms, policies/regulations, infrastructure, community networks, and formal and informal social protection mechanisms that create an enabling environment for systemic change. Women's empowerment contributes to transformative capacity and has improved dramatically in the FTF ZOI between 2011 and 2015. However, uneven power relationships related to gender and other social dynamics negatively influence the distribution of relief aid. Bridging and linking social capital are important and contribute to transformative capacity but need to be balanced with increased institutional accountability to protect the most vulnerable. In SHOUHARDO II, the most robust evidence was found for the following factors as supporting resilience: bridging social capital, access to services, exposure to information, women's empowerment, village governance, and informal safety nets.

Recommended investments: Evidence from the academic literature and from USAID Title II projects suggests several sectors where past development investments have had a positive impact on resilience capacities. There is also evidence from post-shock monitoring and studies that these capacities supported households to cope with and recover from actual shocks. A multi-pronged strategy including simultaneous, coordinated interventions in several sectors – and at multiple levels – is recommended, as this is likely to have a more powerful and longer-lasting impact on resilience than single-sector interventions. Key Investments are:

- Investments that enhance **absorptive capacity** have given the strongest positive results in terms of households' abilities to prepare for and cope with shocks. This validates further investment in areas such as emergency awareness and preparedness. Establishing, maintaining, and updating early warning systems is critical in this regard.
- Investments that build **adaptive capacity should include educating** people about how to plan for future scenarios and help prepare them to modify their practices and behaviours in response to those scenarios
- Investments in **transformative capacity** are critical to building systems that can prepare for, respond, and govern in response to current and future shocks and in an inclusive way. Governance is an overarching area for investment, given the need to improve local institutions' capacity to respond to recurring shocks and stresses and plan for the future effectively. This involves supporting technical and managerial knowledge and skill-building in institutions (traditional, village/local, district and national levels) in key sectors, as well as ensuring accountability mechanisms are in place and designed to ensure inclusiveness and participatory processes.

Session 2.3: Using Secondary Data for Resilience Analysis

RMS 101: Refresher

Overview: Resilience is the ability to respond to adversity and change without compromising future well-being[16]. From a measurement perspective, capturing changes in resilience over time requires one to simultaneously track resilience *capacities* (sources of resilience), shocks and stresses, and well-being outcomes[17]. These three components—shocks, capacities, and outcomes—can either be measured retrospectively, by identifying households' reflections on the experiences of previous shocks, or in real-time, as households are *actually* experiencing the shock. The latter—real-time approaches—are often optimal, as they are less susceptible to recall biases, and enable adaptive management of resilience activities. To respond to the push for more real-time data, and to capture the *dynamic nature* of resilience in the face of shocks and stresses, USAID and TANGO have partnered to develop the Resilience Recurrent Monitoring Survey (RMS).

The RMS, typically embedded in the design of an impact evaluation, is characterized by three main features: [18]

1. ***Real-time data collection following a predetermined shock trigger:*** Once trigger indicators confirm the occurrence of a shock, RMS data collection should begin promptly. The research design for the RMS employs mixed methods, using quantitative data and community qualitative surveys. For
2. ***High-frequency, panel data collections of short durations:***
   <u>*Quantitative survey:*</u> Preferably a *panel* survey done at regular intervals (for instance, every two months for a year, producing 6 rounds of data).[19] Repeat, panel data collected over time captures real-time impacts and changes in how people are coping at different points after a shock, as well as their rate of recovery. Specific techniques employed for analysis of quantitative data depend on the research questions posed. In all cases, basic descriptive analysis includes trends over the survey rounds in shock exposure, the use of coping strategies, well-being outcomes, and resilience capacities (if data are collected on the latter).
   <u>*Qualitative survey:*</u> The data collected during Key Informant Interviews and Focus Group Discussions are transferred into topically-structured matrices and then analyzed to identify patterns in responses and contextual information to better understand and help explain the quantitative findings. Responses from participants from all survey rounds were used to interpret and supplement findings from quantitative data analysis and to identify differences in perceptions between groups, including gender, as well as over time.

[16] 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.

[17] Resilience capacities mediate the effect of shocks and stresses on well-being outcomes.

[18] RMS data collection need not be tied to an impact evaluation.

[19] Note that an RMS can still be conducted if it is not planned at baseline as long as households that will be included in the RMS sample can be located. This requires that GPS coordinates of each household be collected at baseline. It is also important to test and, if necessary, account for any attrition bias, for example due to migration.

3. ***Small sample sizes.*** RMS would, ideally be done with a *panel survey* subsample drawn from the baseline sample to monitor a small number of households (~400-800)[20]

Together, RMSs capture different household trajectories in the face of shocks, and because data are collected and analyzed quickly, RMSs can inform whether project interventions are building resilience, and can illuminate optimal points for launching early action responses, crisis modifiers, and other shock responsive actions. A RMS is not a substitute for baseline, interim and end line designs; instead, a RMS is a complement to this design that both elucidates what happens between these spaced data collections and in the face of shock events.

RMS Trigger Indicators: RMS data collection activities are launched after "trigger indicators" being monitored from the outset of an evaluation reach shock thresholds established during the evaluation's design phase. Examples of such shocks could include droughts, floods, and conflict. The data source for trigger indicators depends on the specific shocks or stresses that the RMS is being built around, and ideally would include both objective and subjective metrics. Objective data sources for climatic shocks for instance, include FEWS NET Food Security Outlook publications, project early warning trigger indicator data, rainfall classifications provided by the government, and satellite remote sensing data from the African Flood and Drought Monitor (AFDM). Useful sources of secondary data on conflict include the Uppsala Conflict Data Program Georeferenced Event Dataset[13] and the Social Conflict in Africa Database.[21] Subjective shock and stresses data can be collected from project beneficiary households themselves as a part of regular project monitoring[22].

Shouhardo II, Care Bangladesh Report: Does resilience capacity reduce the negative impact of shocks on household food security? Evidence from the 2014 floods in Northern Bangladesh

Background: CARE Bangladesh's "Strengthening Household Ability to Respond to Development Opportunities II" (SHOUHARDO II) program, is a FFP Title II funded program at nearly US$130 million, making it one of the largest non-emergency food security programs in the world. Its overall objective was to "transform the lives of women and men in 370,000 poor and extreme poor households in eleven of the poorest and most marginalized districts in Bangladesh". SHOUHARDO II's main goals were to 1) enhance household food security; and 2) improve the health and nutritional status of children under two. However, following on its predecessor, SHOUHARDO I (Smith et al. 2013), it also addressed some systemic causes of food insecurity and malnutrition in a cross-sectoral manner, having additional goals to 3) empower women; 4) promote improved governance among local elected bodies and government service providers; and 5) assist households to prepare for, mitigate, and respond to disasters and adapt

[20] Typically, the sample size is chosen based on available resources, with an ideal size being as close as possible to N=1,000 or more and no less than 400. The choice of sample households should be based on a stratified random sampling design, with the strata reflecting the geographic breakdown of the baseline strata, and sampling weights calculated to reflect the population of baseline households.

[21] See: https://www.strausscenter.org/scad.html

[22] Frankenberger, Timothy and Lisa C. Smith. Ethiopia Pastoralist Areas Resilience Improvement and Market Expansion (PRIME) Project Impact Evaluation Report of the Interim Monitoring Survey 2014-2015. November 2015. Prepared for the Feed the Future FEEDBACK project of the United States Agency for International Development.

to climate change. The program was implemented in the most shock-prone areas of Bangladesh—the Chars, the Haors, and the Coastal flood plains—from 2010 through 2015.

Using data collected before and after the catastrophic flooding that impacted the northern Bangladesh, including the SHOUHARDO II program area, in 2014, this paper contributes to the growing evidence on the factors enhancing households' resilience to shocks, or their "resilience capacities". The analysis takes into account all three dimensions of resilience capacity—absorptive, adaptive, and transformative—as well as a broad range of specific capacities supporting them.

Objective: This paper investigates the impact of the abnormally high flooding in northern Bangladesh during the 2014 monsoons on households' food security. Its main objective is to determine whether the degree of households' resilience to the shock—their ability to maintain their food security in its wake—was boosted by their resilience *capacities* prior to its onset, and which capacities are likely to matter the most in future shocks of this type.

Methods: This paper uses primary data used for this paper's analysis were collected as part of the SHOUHARDO II program's mid-term and endline surveys. Cross-sectional surveys werw collected using a two-stage, random sampling design,[23] data were incidentally collected from a sub-sample of 358 panel households included in both surveys. Data sets representative of the households residing in program villages collected shortly after the flooding ended (in December 2014) and two years earlier (December 2012) are a rich source of information on households' food security, the extent to which they were exposed to the flooding, and their resilience capacities. In additional to primary data, two secondary sources of data are employed. The first is the Princeton University Global Flood and Drought Monitor (GFDM), a real-time, satellite-based, flood/drought monitoring and seasonal forecast system, and the "Village Grading Dataset" collected in 2014 as part of the SHOUHARDO II program's Monitoring and Evaluation (M&E) activities.

Findings: In addition to disaster preparedness and mitigation, this paper finds suggestive evidence that the following capacities reduced the negative impact of the flooding on household food security: social capital, human capital, exposure to information, asset holdings, livelihood diversity, safety nets, access to markets and services, women's empowerment, governance, and psycho-social capabilities such as aspirations and confidence to adapt. The paper highlights the importance of taking a comprehensive approach to understanding the determinants of resilience in future research, one that accounts for the full range of potential capacities. It also points to the value of taking a cross-sectoral, multi-intervention approach to on-the-ground resilience programming in Bangladesh and other developing-country areas that are increasingly vulnerable to climate shocks.

[23] Two levels of stratification were employed. The first was a division of the SHOUHARDO II operational area into its four program areas, described in Section 2. The second level of stratification was into intervention arms defining a randomized controlled trial embedded into the project's design to evaluate the effectiveness of two approaches to targeting Maternal and Child Health and Nutrition interventions: (1) an approach whereby only designated poor households are included as participants in the interventions; and (2) an approach whereby all eligible women (pregnant and lactating) and children (under two) in project villages participate, regardless of socio-economic status. Within each of the resulting eight strata, program villages served as primary sampling units. Forty-five households were randomly selected in each village to make up the final sample (Smith 2015). All descriptive statistics presented in this report are calculated using sampling weights reflective of this sampling design.

Although all three dimensions of resilience capacity—absorptive capacity, adaptive capacity and transformative capacity—were found to be important, the evidence for absorptive capacity is the most robust. A strong role for absorptive capacity would be expected in this situation of a rapid-onset climate shock as households gave priority to minimizing their exposure to the flood and recovering in its immediate aftermath.

Notably the study finds that the roles of two elements of transformative capacity were shown to have likely mitigated the impacts of the flooding have not been investigated in a quantitative manner for specific shocks women's empowerment and the quality of village governance. Building on the growing conceptual and case-study literatures on these subjects, future studies should explore fully:

- *Women's Empowerment:* What are the specific roles of the different aspects of empowerment, such as: relative decision-making power within households, control over assets, freedom of movement, freedom from violence, women's education, and women's participation in political and civic life. Also, gender differences in vulnerabilities, exposure to risk, and impacts of shocks should be taken in consideration.
- *Governance:* There are still some key questions:
    1. Which aspects matter the most when it comes to shock recovery: representativeness, responsiveness, transparency, accountability?
    2. How specifically does governance serve to increase households' resilience, that is, which more proximate factors supporting resilience are enhanced by governance?
    3. What are the drivers of resilience-enhancing good governance?

Session 2.4: Using Recurrent Monitoring Surveys (RMS) in resilience projects

CARE SHOUHARDO III – Bangladesh

As part of their project monitoring and evaluation system, the SHOUHARDO III project plans to put into place a longitudinal study of project beneficiaries. The integrated panel survey is designed to measure the longitudinal effects on adoption of agriculture practices and productivity, health and nutrition practices, and improvements in women's empowerment of SHOHARDO III beneficiary households, and in particular the rates at which exposure to information and other supports provided by the project lead to changes in practices and behaviors over time. This panel survey will also measure changes in household resilience capacities and other adjustments made by households as they are exposed to shocks over the course of three years, the patterns of changes in food security outcomes after exposure to shocks, and how resilience capacities and responses to shocks are influenced by adoption of practices promoted by the project. The core research objectives of the panel survey are to:

1. Increase understanding of which resilience capacities, in what form and where, have the greatest ability to help households mitigate shocks and stresses and achieve greater food security.
2. Determine if program interventions are effectively contributing to the resilience capacities, and inform program decisions on how to adjust interventions accordingly.

3. Provide evidence that allows the program to test and review its theory of change, and make adaptive management decisions within the program.

The focus of this longitudinal study will be to track the rate at which beneficiaries adopt changes in practices promoted by the project over time, and reasons for why recommended practices are not adopted by beneficiaries. This information will be particularly useful for project management, to identify areas where changes in implantation strategies may be required in order to enhance the rate of adoption of new practices by beneficiaries.

Women's empowerment is a major cross-cutting focus of SHOUHARDO III. The panel survey will also collect information to measure changes in women's empowerment, to be able to measure the extent to which this factor affects household food security outcomes and recovery from shocks, and the rate of adoption of specific livelihood and nutrition practices.

In addition, this study will capture in real time the relationships between adoption of practices supported by the project and increases in household resilience capacities, and ultimately how adoption of recommended practices enhance households' abilities to mitigate the negative impacts and recover from shocks that they experience over time.

A sample of 680 beneficiary households will be initially selected randomly from SHOHARDO III MIS database during the baseline and then will be followed up in every six months for three years. The panel sample households will be selected from the two major sampling frames of registered agriculture (including on-farm IGA) and nutrition beneficiaries. The baseline of the panel survey is proposed to take place in July 2017. There will then be three rounds of follow-up monitoring of the households, conducted on 6-month intervals (January '18, July '18, and January '19) and the end line in July 2019. Agriculture, childhood illness and nutrition practices have seasonal variations. Data collection in July and January will be appropriate times to capture major seasonal effects in the project implementation areas.

This longitudinal study will be complemented by a shock-initiated RMS that is designed to measure how household are able to respond to large covariate shocks, and how resilience capacities of households affect their recovery patterns. Recently, SHOUHARDO III working areas (Char and Haor regions) are heavily affected by flash flood. Consequently, it is recommended to start the RMS in July 2017.

Session 2.5: Activity-Level Monitoring and Evaluation

In this session, Mercy Corps will facilitate a discussion of common challenges and possible solutions for resilience M&E of development activities.

Module 3: Resilience Analysis

Session 3.1: Ensuring Escapes from Poverty

This session will highlight two examples of the broader relevance of resilience:

1. Producing sustainable escapes from extreme poverty: Key points and findings from the ODI study on backsliding in Bangladesh will be reviewed for participants.
2. Sustainably achieving development outcomes, as outlined in the Global Food Security Strategy.

Report: Backsliding in Bangladesh: Ensuring escapes from poverty are sustained to end extreme poverty

Background: Recent analysis of panel data by the Chronic Poverty Advisory Network (CPAN) to examine poverty dynamics in 14 countries reveals a disturbing trend. In Kenya, Uganda, and Tanzania, for

example, a significant proportion of rural households that escaped poverty 'backslid' into poverty during the eight to ten-year period examined. Backsliding rates greater than 40 percent in some countries, highlight that more rural households are descending into poverty than are sustainably escaping poverty over the same period. Even in countries where more households are escaping poverty than those descending into poverty, but the rate of backsliding is still substantial and of concern. For example, in Nepal, between 2003/04 and 2010/11, for every ten households that escaped poverty, seven households either backslide into poverty or became poor (Scott et al. 2014).

Qualitative life histories conducted by the CPAN, hosted at the Overseas Development Institute (ODI), point to the inability of poor and insecure non-poor households to mitigate, adapt to, and recover from shocks and stresses as key drivers of backsliding and impoverishment. To better understand the role of risk and the importance of risk management in relation poverty reduction goals, particularly within USAID's ending extreme poverty agenda, ODI was asked to examine the occurrence (at the household and national levels) of backsliding in three FTF focus countries: ***Bangladesh,*** Ethiopia, and Uganda.

Objective: The objectives of this Bangladesh case study are (i) to highlight the importance of a poverty dynamics perspective for an agenda to end extreme poverty, ensuring that escapes from poverty are sustained, i.e., that 'backsliding' is prevented; (ii) to investigate the drivers of backsliding, or the reasons why some households are able to escape poverty and remain out of it while others escape poverty only to fall back into it; and (iii) to draw-out implications for USAID's ending extreme poverty agenda, and programmatic approaches in Bangladesh.

Methods: In mixed methods research with ODI (quantitative panel data analysis and qualitative life histories), patterns of transitory poverty escapes were explored, as means to better understand what factors enable some households to escape poverty and stay out of poverty, while other households escape poverty only to fall back into poverty over time.

Specifically, this study pulls from**:**

- New analysis of the panel data collected as part of the Chronic Poverty and Long-Term Impact Study in Bangladesh. This impact study was conducted by the International Food Policy Research Institute (IFPRI), in conjunction with the Chronic Poverty Research Centre, and Bangladesh's Data Analysis and Technical Data Ltd and covers individual, household, and community level information.
- Insights from key informant interviews with development stakeholders in Dhaka and Jessore district, in the south-west of the country; a Feed the Future Zone of Influence.
- Information from focus group discussions (FGDs) to undertake participatory wealth ranking in three villages in Jessore district.
- Life history interviews with individuals who took part in the participatory wealth ranking and who were identified during this exercise as being on different poverty trajectories.
- Existing policy and programme assessments and evaluations (see References).
- Wider literature on the extent and nature of impoverishment and backsliding, and the success of antipoverty efforts in Bangladesh (see References)

Findings:

Initial household resource base. Panel data reveals that an increase in the per capita expenditure is associated with a reduced risk of backsliding relative to sustaining a poverty escape, with the result statistically significant at all conventional levels.

- ***Households with greater asset value are more likely to experience a sustained escape from poverty***: Panel data analysis reveals that an increase in household asset value, as well as the presence of a sanitary toilet and electricity are all associated with a reduced likelihood of backsliding relative to experiencing a sustained poverty escape, with all except the electricity variable being significant.
- ***Owning more cultivable land reduces the risk of experiencing a transitory poverty escape relative to a sustained poverty escape****:* As expected, data analysis reveals that an increase in the amount of cultivable land owned is associated with a statistically significant reduced risk of backsliding, though the size of the coefficient is very small. In rural Bangladesh land ownership is not just a marker of economic wealth, but also of social status. Upwards pathways out of poverty frequently involve the accumulation of land assets.
- ***An increase in the number of livestock is associated with a reduced risk of experiencing a transitory poverty escape relative to a sustained poverty escape:*** Households owning livestock numbering higher than the median in the first round of the survey are less likely to backslide and become impoverished, though the results lack statistical significance. This finding is reinforced in the life histories, where livestock is frequently mentioned as a resource from which households derive at least part of their income or production needs.

Household attributes and capacities.

- ***An increase in the share of dependents is associated with a higher risk of a transitory poverty escape:*** In Bangladesh, it is not just an increase in number of household members but specifically whether that increase is due to children or all dependents at large that affects poverty trajectories. While both an increase in the share of children and dependents increase the risk of a household backsliding, children can have a greater effect.
- ***Life histories also highlight dowry payments for girls as being an important driver of re-impoverishment:*** Though dowries are often reframed as "gifts" as opposed to a required payment upon marriage, in principle these marriage-related expenses caused significant hardships for many families. To pay for dowries, these families often had to sell or mortgage their lands, or otherwise take out a loan.
- ***A more educated head of household is tied to a reduced risk of transitory poverty escapes and impoverishment:*** *The level of education is also important*. Households where the head has completed secondary education are less likely to experience a transitory poverty escape than those where the head has completed primary education. Those with primary education, in turn, are less likely to experience a transitory poverty escape than those where the head has no education.
- ***Female-headed households are less likely to experience a transitory poverty escape or become impoverished than to experience a sustained poverty escape:*** This finding should be contextualized for Bangladesh where there are two primary groups of female-headed households: those where the male head of household has migrated (including internationally); and those where the woman has

been abandoned, divorced, or widowed. While the latter are among the poorest households in rural Bangladesh and can have limited prospects for sustained poverty escapes given limited income-generating activities that are accessible to women, the former are among some of the better-off households in rural areas due to their receipt of remittances.

Household Activities

- ***Female-headed households that receive remittances are more likely to experience a sustained escape than a transitory escape:*** An increase in the amount of remittances which a household receives is associated with a statistically significant reduced risk of impoverishment, but an increased, though insignificant, risk of backsliding. However, the risk of backsliding reduces amongst female-headed households that receive remittances. It could be that remittances to rural male-headed households are less likely to indicate migration with the objective of increasing household income, but rather a coping strategy in the face of crisis, possibly indicating done out of desperation.
- ***When the head of household is involved in non-agricultural activities, the household is more likely to experience a sustained escape. Based on the life histories of households that experienced sustained escapes, heads of these households were engaged in both agricultural and non-agricultural work throughout the year:*** That the household head has a job is associated with a reduced risk of backsliding and impoverishment, though the result lacks statistical significance. Having non-agricultural labor as the primary occupation of the household head meanwhile, is, across specifications, associated with a reduced risk of backsliding and impoverishment, though again the results are not significant.

Household Shocks

- ***Experiencing a series of shocks in short succession is associated with transitory poverty escapes. Health shocks emerge as a particularly important driver:*** Life history interviews provided a richer understanding of the role of shocks in poverty trajectories, particularly highlighting the important role which health shocks play in driving backsliding, either in terms of an especially large episode of illness of the primary income earner, as a series of smaller health-shocks or when health-shocks occur in close succession to other types of shock. Part of the problem is that health shocks require an infusion of cash in a relatively short period of time,
  which doesn't allow its victims to apply for an NGO loan (which in principle are mainly designed to be given for households to make productive investments). Moreover, no one has health insurance (which is not available in the fieldwork villages), and as a result, families experiencing health shocks often end up borrowing the required funds from relatives or informal money lenders; the latter incurring extremely high interest rates.

Household Strategies

- ***Households where the man and woman work together are more likely to experience sustained poverty escapes:*** Life histories highlight the importance of a husband and wife working in partnership and together as being important if the household is to experience a sustained escape from poverty.

- ***Households that experience sustained poverty escapes cultivate more than once a year, switch crops regularly depending on market prices, and store crops to sell them when the price is high:*** Respondents, point to the significance of new crop varieties, including *irri ric*e, in enabling sustained poverty escapes through enabling more than one season of crops to be produced on the land. More recently farmers have been complementing paddy cultivation with that of other vegetables. IFPRI points to the current low price of rice which is encouraging some farmers to switch to high value crops. However, cultivation of these crops requires capital and can be risky as they are less hardy in the face of environmental shocks and stresses.

Implications: Global Food Security Strategy

These ODI findings helped prompt the elevation of resilience in the Global Food Security Strategy to a Development Objective (DO2). The thinking is that resilience directly applies to food security. For countries or sub-national areas within countries that are subject to recurrent crisis, resilience will be applied to help build the capacities that will help households and communities better manage, adapt to, and recover from shocks/stresses. Notably, this would also apply to specific populations (i.e., Dalits) subject to chronic shocks/stresses. In light of the ODI findings, for other countries (not characterized by recurrent crisis), resilience will be applied to ensure sustainable escapes from poverty, AND sustainable food security and nutrition gains. The Center for Resilience will be working with countries/Missions on the country implementation plans, and MEL work moving forward.

Session 3.2: Resilience Analysis in Urban Contexts

Conceptualizing Urban Resilience:

Well-being outcomes: Consider the concept of well-being outcomes, their relationship with capacities, and reinforcing causal effects between capacities and outcomes**:**

FIGURE 1: FOUR FRAMING QUESTIONS OF RESILIENCE (MERCY CORPS)

FIGURE 2: EXAMPLE OF A CAUSAL LOOP SHOWING THE REINFORCING EFFECTS OF RESILIENCE CAPACITIES AND WELL-BEING OUTCOMES

These key components of resilience are connected in an analytical resilience framework. The resilience framework illustrates that we start by identifying vulnerable, marginalized populations in a given context, or the population on whom we want to have the ultimate impact through our programming.

We then move to analyze the systems in which those individuals, households and communities are embedded, and the constraints and development challenges within those systems that affect them.

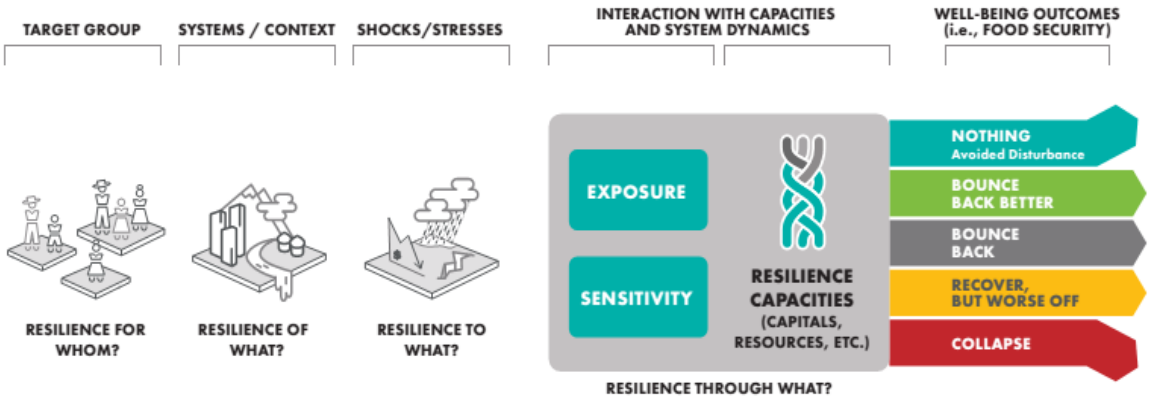


FIGURE 4 MERCY CORPS' RESILIENCE FRAMEWORK

We then analyze shocks and stresses that impact the systems and concerned populations. Finally, the capacities that are embedded or lacking within the context to help populations address shocks and stresses are examined.

Resilience capacities determine the frequency and severity with which a population or system is exposed to a particular shock (exposure), or how badly they can be affected (sensitivity). When shocks and stresses are filtered through resilience capacities, they are indexed to particular well-being outcomes. If resilience capacities are limited, a household's well-being might collapse. For example, household members may have to migrate, or be forced into harmful or illegal sources of income. If resilience capacities are strong, households may over time do even better after the shock, as they learn and adapt to their changing context.

Strengthening resilience requires an integrated approach and a long-term commitment to improving resilience capacities. Importantly, resilience should not be considered an outcome or program goal but instead a determinant of, or pathway to higher-level well-being outcomes, such as secure, safe and productive income sources, nutritional status, and increased rates of individual investment. These outcomes in turn affect future vulnerability to risk. Thus, improved well-being outcomes may also be tied to future resilience.

Urban contexts can be broken down into the major systems required to make a city function. Mercy Corps, for example, often breaks down urban systems into its socioeconomic, governance/enforcement and regulatory, infrastructure, ecological and climatic components, and analyzes what are the core problems within each system that are inhibiting the core well-being outcome. Other approaches to breaking down urban systems have included understanding the role of energy, health, water and sanitation, under the wider system of public services, looking at infrastructure, housing and land and natural resources, and finally analyzing the overall governance contexts. The specific breakdown is not as critical as capturing all of the key elements that compose a city system, and understanding how they are linked and connected.

Shocks and Stresses: In urban contexts, shocks and stresses are often associated with disasters and climate change, and therefore urban resilience is often closely linked with the field of disaster risk reduction and climate change adaptation. But cities can experience shocks emanating from different systems, that in turn have effects on multiple other systems. These can include urban violence, political unrest, market price shock, currency shocks, food supply shortages, or food price shocks, environmental pollution, rapid rates of migration, and disease. These shocks and stresses are also often interrelated, and often connected to shocks and stresses outside the city itself. For example, a poorly performing planting season due to unusual rain patterns in rural areas may leads to a rice shortage and rice price hikes. Farmers who have a modest harvest may not be able to purchase supplemental rice, and thus migrate to urban areas in search of work, putting demographic pressures on cities to provide services. Purchasing power in cities would also be affected, potentially causing tension and frustration among urban citizens. The inability for cities governments to respond to the situation may cause urban violence or political unrest that has the potential to further impact food supply shortages and prices.

These shock and stress dynamics can ultimately be incorporated into the map of urban systems dynamics. However, it is important to identify and analyze shocks and stresses separately as well, to ensure they are not overlooked in what is often a development focused analysis. To build resilience, it is critical to note which shocks and stresses can undermine the development gains a particular program is trying to address.

Resilience Capacities: In urban contexts, it is also useful to understand resilience capacities at a systems, community, household and individual level. Individuals and households within urban areas must access absorptive, adaptive and transformative capacities to adjust to change. At the same time, these groups are embedded within urban neighborhoods or communities, that are further reliant on wider urban systems. When designing urban resilience programs, it is useful to consider at which level resilience capacities can be most effective, and where interventions should target building absorptive, adaptive and transformative capacities, and why.

Resilience Measurement – Indices: In urban contexts, it is useful to think about indices that help measure the overall resilience capacity of a system, or the contribution of a system to resilience. An index can be developed that measures the performance of a water and sanitation system, an energy system, or governance planning capabilities. Wherever system performance contributes to improved well-being in the face of shocks and stresses, the components of this system can be considered resilience capacities.

Resilience Urban Program Design - STRESS: A STRESS process can be a particularly useful methodology for analyzing the complexity of urban systems. In order to apply STRESS to urban areas it is useful to identify and breakdown the core development challenge or problem in an urban area, and the various systems that would impact that problem. One useful framing is provided below:

FIGURE 16 FRAMEWORK FOR BREAKING DOWN CORE DEVELOPMENT CHALLENGES AND SYSTEMIC CONSTRAINTS IN AN URBAN CONTEXT

Session 3.3: Overview of Resilience in Urban Contexts (cont.)

During this session, SURGE will present a case study from the Philippines and Mercy Corps will present a case study from ACCERN Network - Indonesia.

Session 3.4: Using Resilience Data/Evidence

This session aims to familiarize participants with CLA principles as core to Resilience programming and helping explore how resilience MEL can play a critical role.

Overview: Collaborating, Learning, and Adapting (CLA) is a set of practices that help us improve our development effectiveness. CLA is also core to Resilience programming in many ways and most USAID missions and implementing partners are already practicing CLA in some way. This has been reinforced throughout the Resilience coordination approaches including Sequencing, Layering and Integrating (SLI) and shock responsive programming among others. A joint Center for Resilience, OAA and PPL normative guide is in its near final stages of development and help with:

- Options for designing adaptive, shock responsive projects and implementing mechanisms to be able to respond proactively to likely or emergent shocks and/or changes in context (e.g. stressors)
- An understanding of how existing projects and implementing mechanisms that were not designed to be shock responsive can respond to mitigate the impact of shocks, protect development gains, and speed recovery.

According to USAID's Program Cycle guidance (ADS 201.3.5.19), "Strategic collaboration, continuous learning, and adaptive management link together all components of the Program Cycle." Integrating CLA into our work helps to ensure that our programs are coordinated with others, grounded in a strong evidence base, and iteratively adapted to remain relevant throughout implementation. The systematic application of CLA approaches, led by people who have the knowledge and resources to carry them out, enables USAID to be an effective learning organization and thereby a more effective development organization.

Collaborating intentionally happens when USAID and stakeholders identify areas of shared interest and work together where it makes sense, reduce duplication of efforts, and share knowledge across sectoral and institutional boundaries. Collaboration helps break down sectoral and institutional stovepipes; validates USAID programs against experience and local/contextual knowledge; and enhances the ability of partner country governments, organizations, commercial actors, and individuals to define and pursue their development agendas while informing USAID's work.

Learning systematically takes place when USAID and stakeholders utilize a variety of sources of information (including data from monitoring, portfolio reviews, findings of research, evaluations, analyses conducted by USAID or third parties, knowledge gained from experience) and take the time to pause and reflect on implementation. This helps us draw on evidence and experience from many sources and employ participatory development methodologies that catalyse learning for ourselves and our stakeholders.

Adapting effectively happens when USAID and partners apply learning and make adjustments during implementation. This is especially critical as USAID is increasingly working in countries that are unstable or in transition and even in the most stable environments, it is difficult to reliably predict how events or circumstances will evolve and impact programs. Adaptive management helps USAID respond to changes in context and new information to increase the impact of development assistance.

Session 3.5: Frontiers and Future Challenges for Resilience Analysis

Resilience measurement and programming have advanced considerably in recent years. Research findings continue to illuminate gaps in existing knowledge and opportunities to address these gaps. Below, we provide a brief overview of themes that have emerged as priority areas.

Value for Money of Resilience Interventions

An array of complex and interrelated social challenges, economic risks and natural hazards has contributed to an increase in major humanitarian crises. According to the 2016 Global Humanitarian Assistance (GHA) report, 154.7 million people were affected by disasters in 2015.[24] The direct economic losses from natural disaster disasters were estimated to total $92 billion in 2015, and average annual losses have been estimated at more than $300 billion per year.[25]

These trends, combined with continued funding constraints, have contributed to growing interest among donors and implementing organizations in incorporating resilience concepts and metrics into strategic plans. Increasingly, “value for money” and “averted losses” have been cited as compelling rationales for investing in resilience. Current research estimates that investments of $USD 1 in disaster risk reduction activities yields benefits of $USD 4-13. The projected savings in this model are based on only a $USD 1.10 (10%) return on investment.[26] While it can be argued that such investments are more efficient and effective than emergency response for enabling sustainable poverty reduction and development gains, there is a need for further empirical evidence of change in humanitarian case load and averted losses, specifically related to: cost savings on other food and non-food commodities; data on actual changes to household food security and animal losses; and cost-benefit analysis of resilience investments across multiple contexts.

[24] Development Initiatives (2016). *Global Humanitarian Assistance Report 2016*. http://devinit.org/wp-content/uploads/2016/06/Global-Humanitarian-Assistance-Report-2016.pdf

[25] Hallegatte, S., A Vogt-Schlib, M. Banglaore, J. Rozenberg (2017). *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters.* Climate Change and Development Series. Washington, DC, World Bank https://openknowledge.worldbank.org/handle/10986/25335

[26] REAL. 2017. REAL Project Value for Money Technical Meeting. Summary Notes. Washington, DC. March 25.

Assessing Resilience in Fragile Contexts

An increasing proportion of the poorest, most vulnerable households live in fragile contexts characterized by heightened political instability, conflict, and violence. Complex crises in such environments is often compounded by natural hazards such as droughts, floods, and natural resource depletion, as well as socio-economic risks including population growth, displacement, and economic instability. In such environments, it is critical to more fully understand the specific drivers of conflict and instability to effectively and sustainably strengthen resilience at the household, community and system levels.

The diverse and interrelated contributors to fragility increase the complexity of resilience analysis. For instance, common indicators or resilience capacity such as asset holding, gender equity, human capital, and natural resource management must be considered in light of other factors that are much more fluid in the context of fragility such as informal economic opportunity, inclusivity and stability of governance institutions, and latent potential for violent conflict. There is a recognized need to better understand the relationship between resilience and fragility through quantitative and qualitative research on factors including trust and cohesion among diverse social networks; aspirations and positive collective action; and formal and informal conflict mitigation.

Integrating Gender into Resilience Analysis and Programming

Despite advances in the application of resilience concepts and measurement, less attention has been paid to the impacts of shocks and stresses on women and girls, or the distinct capacities they employ at the individual, household and community levels. This is despite mounting evidence confirming that gender directly influences exposure and sensitivity to shocks and stresses; there are gender differences in perceptions of shocks and stresses, and that gender influences the skills, knowledge, and strategies individuals employ to cope with and adapt to shocks and stresses.[27]

In addition to posing questions such as "resilience of what?" and "resilience to what?" most resilience analyses emphasize answering the question of "resilience for whom?". However, these efforts often focus on populations within certain geographic locations, livelihood profiles or income categories without sufficient consideration of gender dynamics within specific populations. This approach may result in "gender blind" resilience analyses that overlook key contributors to extreme poverty and food insecurity, and fail to identify gender-specific capacities that directly influence resilience at multiple levels.[28]

[27] Mercy Corps. (2014). *Rethinking Resilience: Prioritizing Gender Integration to Enhance Household and Community Resilience to Food Insecurity in the Sahel.*

[28] Kumar, Neha and Agnes Quisumbing. (2014). *Gender, Shocks, and Resilience. Building Resilience for Food and Nutrition Security.* 2020 Conference Brief 11 May 2014. http://www.ifpri.org/publication/gender-shocks-and-resilience

Accounting for Social and Cognitive Factors in Resilience Analysis

Most approaches to analyzing resilience have focused on the household and community levels. This is starting to change as researchers and practitioners increasingly acknowledge the importance of strengthening absorptive, adaptive and transformative capacities at the system levels. Relatively few measurement frameworks fully consider factors influencing resilience at the individual level. However, emerging research on subjective and psychological resilience is generating evidence of cognitive factors that influence wellbeing outcomes.[29]

Certain resilience studies have identified important population characteristics and psychosocial factors that influence individual burden, psychosocial behavior, perceptions of risks, aspirations, self-efficacy and cognitive resilience.[30] Together, these efforts provide preliminary but compelling evidence that these factors not only influence resilience capacities at the individual level, but also have profound effects on the extent to which they effect wellbeing outcomes at household, community and higher levels. Issues related to social networks, social relations and social capital are inherently difficult for researchers to understand and accurately measure. Nonetheless, evidence suggests that social and cognitive factors are essential elements to capture to ensure that programming contributes to sustainable improvements in resilience at multiple levels.

[29] Overseas Development Institute (ODI). (2016). *Analysis of Measurement Frameworks and Approaches*. Resilience Measurement, Evidence and Learning Community of Practice (COP). October 2016. http://www.fsnnetwork.org/sites/default/files/analysis_of_resilience_measurement_frameworks_and_approaches.pdf

[30] Cognitive resilience describes the capacity to overcome the negative effects of setbacks and associated stress on cognitive function or performance at the individual level.

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