REAL Short Course in Resilience Measurement

Session 3:
Measuring Shocks, Stresses, and Resilience Capacities & Analyzing Resilience

Agenda
• Introduction
• Presentations
• Breakout Session
• Report Back
• Q & A

Presenters

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Introduction

THE USAID RESILIENCE MEASUREMENT PRACTICAL GUIDANCE NOTE SERIES

Tiffany M. Griffin, PhD
Adviser, Monitoring, Evaluation, and Strategic Analysis
USAID Center for Resilience
Shock and Resilience Capacity Measurement

Brad Sagara
Deputy Director, Research and Learning, Mercy Corps
Three things to know about measuring shocks

1. Shock measurement is fundamental to resilience analysis

2. While new(ish) to us, many indicators and databases already exist – huge opportunity for innovative applications of existing tools & cross-learning

3. Every shock is different and experienced differently – metrics need to capture nuance
<table>
<thead>
<tr>
<th>Regional/National</th>
<th>Household/Community</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Integrated Phase Classification (IPC)</td>
<td>• Emergency Market Mapping and Analysis</td>
<td>• Household quantitative surveys</td>
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<tr>
<td>• Famine Early Warning Systems Network (FEWSNET)</td>
<td>• Community early warning systems</td>
<td>• Key informant interviews</td>
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<tr>
<td>• Armed Conflict Location and Event Data Project (ACLED)</td>
<td>• Community health surveillance systems</td>
<td>• Focus group discussions</td>
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<tr>
<td>• Agricultural Market Information System</td>
<td>• Household quantitative surveys</td>
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<tr>
<td>• African Flood and Drought Monitor (AFDM)</td>
<td>• Community quantitative surveys</td>
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Appreciating shock complexity

Appreciating Shock Measurement/Complexity:
What do you see in this picture?
Appreciating Shock Measurement/ Complexity

1. Objective measures are great, but only part of the story, we also need to understand subjective experiences

2. Metrics need to take into account variation over scale (idiosyncratic or covariate) and time (acute and chronic)
Three things to know about measuring capacities

1. Resilience capacities are highly contextual, complex, inter-related and multi-level

2. Like shocks, capacity measurement often requires diverse metrics and data sources measured over time

3. Good news! You are probably already be measuring resilience capacities! But are you viewing them through a resilience lens?
Resilience capacity components

Measurement Framework

Absorptive
- Bonding social capital
- Informal safety nets
- Shock preparedness & mitigation
- Hazard insurance (where applicable)
- Household savings
- Asset ownership
- Conflict mitigation

Adaptive
- Bridging social capital
- Linking social capital
- Human capital
- Access to financial services
- Livelihood diversity
- Exposure to information
- Asset ownership
- Aspirations & confidence to adapt

Transformative
- Bridging social capital
- Linking social capital
- Formal safety nets
- Access to markets
- Access to infrastructure
- Access to basic services
- Communal natural resources
Identifying context-relevant resilience capacities

ID important responses

- How people & groups at different levels USE resilience capacities to deal with shocks & stressors
- Responses serve three functions:
  1. Prevent or reduce exposure to a shock / stress evacuation or relocation, annual health checks
  2. Prepare for an anticipated shock / stress disaster preparedness, investments in new livelihoods or inputs,
  3. Act when shocks and stresses occur disaster response, use of credit, asset sales

ID capacities needed to elicit these responses
Resilience applied to a Theory of Change framework

- Program Activities Implemented
- Resilience Capacity Strengthened
- Effective Resilience Response Adopted
- Individual and Household Wellbeing Improved (or Maintained)

ACTIVITIES  OUTPUTS  OUTCOMES  IMPACT
Defining indicators and data sources

One way to track changes in resilience is to organize capacities in a framework

### PRIME example of M&E framework

<table>
<thead>
<tr>
<th>Absorptive</th>
<th>Adaptive</th>
<th>Transformative</th>
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</thead>
<tbody>
<tr>
<td>Informal Safety Nets (e.g., savings group, zakat, women’s group)</td>
<td>Livelihood diversity (e.g., crop production, livestock production, wage labor, salaried work)</td>
<td>Basic services (e.g., schools, health center, vet services)</td>
</tr>
<tr>
<td>Asset Ownership</td>
<td>Human Capital</td>
<td>Formal safety nets</td>
</tr>
<tr>
<td>Bonding Social Capital</td>
<td>Bridging Social Capital</td>
<td>Bridging Social Capital</td>
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<td>Linking Social Capital</td>
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Resilience Analysis

Tim Frankenberger
President, TANGO International
Overview

How is Resilience Analysis distinct from traditional M&E?

- Defining analysis objectives
- Analytical approaches
- Interpreting and synthesizing data
Takeaways!

• Have well-defined purpose and objectives of the research – without this, it’s impossible to effectively conduct a study

• Mixed methods are invaluable for resilience analysis, provided they are well designed, executed, and integrated

• At minimum, data on shocks/stresses, capacities, and wellbeing are fundamental to any resilience analysis
How is Resilience Analysis distinct from traditional M&E?

1. From thresholds and point estimates to relationships and analysis

2. Risks, shocks, and stresses

3. Dynamics
From thresholds and point estimates to relationships and analysis

- Resilience capacities
- Well-being/development outcomes
- Shocks and Stresses
Constructing Indices

Constructing indices simplifies complex, multi-faceted concepts – but in summarizing multiple variables, the underlying drivers may be muted.
Dynamics

- Related to relationships
- Panel data
- “Real”-time
Define Analysis Objectives

1. Define research purpose

**This step is critical to forming researchable questions**

*Two broad purposes of resilience analysis:*

1. Understand resilience dynamics in a specific context to set investment/programming strategies

2. ID intervention(s) that build resilience
Defining Research Purpose and Objectives

Three categories of research objectives apply to both research purposes:

1. Determining existing resilience levels
2. Understanding trends over time
3. Exploring relationships
Determining Existing Levels and Trends

• Determining existing levels of various resilience capacities, household coping strategies, shock exposure and wellbeing outcomes to gain a **descriptive understanding** of the context.

• Resilience analysis will look at trends over time in order to better understand temporal patterns (e.g. stability, volatility, growth, decline) in resilience capacities, shock exposure, coping strategies, and wellbeing.
Understanding Trends

Types of research questions examining trends over time include:

• How are levels of resilience capacities changing over time?
• How is shock exposure evolving over time?
• Is household wellbeing being maintained, improving or worsening over time?
Define Research Questions by Exploring Relationships

A common research objective in resilience analysis is exploring relationships between shocks, resilience capacities, and well-being through a series of three research questions:

1. What is the relationship between shocks and household wellbeing?
2. Which resilience capacities are associated with maintained or improved wellbeing outcomes?
3. Which capacities serve to reduce the negative effect of shocks on household wellbeing?
Other Important Research Questions

1. Which resilience capacities are associated with using positive coping strategies and preventing the use of negative coping strategies?

2. What is the relationship between household and community resilience capacities?

3. Which interventions serve to build households’ resilience capacities?
Developing Estimation Models

- What types of analyses are required? What indicators are needed?
- After defining objectives and specifying the research Qs, next begin developing formal estimation models that explicitly detail what relationships are of interest for the study.
Developing Estimation Models

The research Qs and estimation models form the basis for identifying both the quantitative and qualitative data needs – such as:

- What are the outcomes of interest?
- What resilience capacities are of interest? Including both objective, easily measured characteristics and more subjective, psychosocial characteristics?
- What are the main shocks we should consider?
Selecting Appropriate Method(s)

Select appropriate method(s) based on:

- Ability to respond to questions effectively and rigorously
- Data requirements
- Financial, time, and personnel constraints, etc.
Mixed Methods Approaches

Quantitative analyses
• Descriptive and trend Analyses
• Regression analysis
• Factor Analysis and Principal Component Analysis (PCA)

Qualitative analyses
• Positive Deviance Analysis
• Life History Analysis
• Social Network Analysis
Illustrative Quantitative Analysis Approaches

Descriptive and Trend Analysis:

- Descriptive statistics are simply averages (e.g. average household size, per capita income, etc.) or percentages (e.g. percent of households under the poverty line, etc.)

- Trend analysis is an effective tool to describe how factors vary over time, e.g. food security trends, poverty trends, shock exposure, etc.

- Trend analysis is merely reporting the same descriptive statistics over time.
Illustrative Quantitative Analysis Approaches

Regression Analysis:

• Regression is a type of statistical analysis that estimates the relationship between a dependent variable and one or more independent variables.

• However, to enable a causal interpretation of regression results, we must use an experimental or quasi-experimental research design or specialized regression techniques.
Interpret and Synthesize Data

Changes in resilience: findings after Bangladesh flood of 2014

Research questions:
1. Do resilience capacities boost HH ability to maintain FS?
2. Which capacities matter the most?

Analysis:
Factor analysis used to construct resilience capacity indices
Interpret and Synthesize Data

Findings:
Regression analyses found that resilience capacity:
• Increased # of months of adequate food
• Reduced the likelihood that a HH would experience hunger

Strongest evidence for capacities that increase resilience to shocks include:
• bonding & bridging social capital, access to services
• exposure to information, women’s empowerment
• village governance, informal safety nets
Qualitative Analytical Tools

Positive Deviance Analysis (PD) – PD analysis seeks to identify and describe individuals and HHs that have effectively demonstrated their resilience.

Life History Analysis – Used to better understand why some HHs are able to escape poverty, while others are not.

Social Network Analysis (SNA) – Measures the patterns, connections, strength, and proximity over the various relationships present between individuals, households, communities and governments.
Q & A
What’s next...

REAL Short Course Survey
Your feedback will inform our next steps for the Resilience Measurement Practical Guidance Notes!

RMEL Conference in New Orleans
The Resilience Measurement, Evidence and Learning (RMEL) CoP is organizing a conference for researchers, practitioners, programmers, influencers, and others.

November 13-15, 2018

Main themes include:
1. RMEL in Different Contexts
2. RMEL across Sectors, Disciplines and Scales
3. Innovations in RMEL Methods and Theory
4. Building the Knowledge Base for Resilience
5. From Evidence to Action in Resilience

Submit a proposal to share your research and learning, by July 30, 2018.

www.measuringresilience.org/

Upcoming REAL Publications

- Resilience in Action Series:
  - Gender Equity & Social Inclusion
  - Financial Services
  - Ecosystems-based DRR
  - And more

- Resilience Measurement Modules

Regional Knowledge Sharing Meeting in Bangkok
The USAID/Food for Peace funded TOPS Program is organizing a large knowledge sharing meeting for food security implementers.

Food Security Resilience at the Intersection of Development & Emergency

October 2-4, 2018 in Bangkok

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Thank You

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