



Gloria Mercy (right), a student from Kyambogo University, Uganda, listens as farmer Opio Benson shares his story and self-interprets it. *Photo by Gabriel Mbokothe/CRS*

Understanding and Assessing Resilience

A SENSEMAKER-BASED METHODOLOGY

EXECUTIVE SUMMARY

CRS developed its Pathway to Prosperity approach in 2013 to guide its agriculture and livelihoods programming. Its aim is to “push” farmers recovering from shocks and stressors along this pathway by building and growing their assets, and to “pull” them by working and partnering with better-off farmers and other value chain actors (See Figure 1). CRS also works to develop farmers’ resilience to different types of shocks and stressors that periodically put their lives and livelihoods at risk.

As this approach began to be implemented, questions emerged on how to measure progress along the pathway and how to assess resilience capabilities, posing methodological challenges. After trying various approaches with mixed results, a complexity-aware method called SenseMaker was used to develop a tool for this purpose, and tested interactively in nine case studies in Latin America, East Africa and Southeast Asia.

This method recognizes that respondents’ stories may allow better access to contextualized knowledge and interpretation, by enabling respondents to analyze and give meaning to their own experiences. Thus, it enables the gathering and analysis of large numbers of stories, transferring the power of interpretation to the narrators, and away from the experts, to inform more meaningful and impactful programming. This methodological brief explains how this tool works, with examples of the type of findings that have been generated, followed by the lessons learned from iterative cycles of testing, making sense and adjusting the tool from 2015 to 2017.



THE METHOD

Given the complexity of the contexts in which CRS projects are implemented and previous methodological challenges in assessing advancement along the Pathway to Prosperity and resilience, the option of conducting a survey to develop a prosperity and/or resilience index was discarded. Based on CRS field experience and relevant literature, the survey methodology posed five limitations:

1. **Researcher bias:** Data collected to construct such an index is based on researcher or evaluator perceptions of what prosperity and resilience look like, which may be different to the respondent's actual experiences.
2. **Missed adaptation opportunity:** Multi-year panel studies are needed to show progression (or not) along the pathway, not allowing for opportune information for adaptive project management.
3. **Relativity of prosperity and resilience concepts:** Prosperity and resilience are relative experiences, so it is difficult to determine in absolute terms when an individual, household or community can be considered prosperous or resilient.
4. **Poor understanding of causation:** Composite indices veil different elements that contribute to prosperity or resilience that may move in different directions.
5. **Limited learning:** In-depth analysis of contributing factors for certain levels of prosperity or resilience, and the role of external interventions, is difficult, yet essential for fostering learning needed for adaptive management of interventions.

Recognizing the need to overcome these methodological limitations, CRS wanted to find alternative ways to assess and analyze prosperity and resilience dynamics, and the role of external intervention in promoting and building them. Thus, a decision was made to test a complexity-aware methodology called SenseMaker (Snowden & Boone 2010; Guijt 2016).

This narrative-based method, aided by software of the same name, recognizes that narratives may allow better access to contextualized knowledge and interpretation by enabling respondents to analyze and give meaning to their own narratives (Snowden & Boone, 2010). It is one of a few emerging M&E options to better deal with complex situations and interventions essential for development processes—such as resilience—that are non-linear, multi-actor, unpredictable and long-term.

THE DESIGN TO ASSESS RESILIENCE

A SenseMaker study requires designing a signification framework that consists of (1) a prompt question asked of all respondents, and (2) a predefined series of questions, or signifiers, to enable respondents to give additional layers of meaning to their narrative (Guijt 2016). Thus, an open-ended prompt question was developed, and field tested to elicit stories about processes of change that could be positive or negative, and may or may not be related to a challenging situation. Preliminary prompts were tested with intended respondents at study sites to ensure that the prompt question generated narratives that illustrated the processes of change and its outcomes. Fine-tuning the prompt question is one of the most important steps in the implementation of a SenseMaker study. If the prompt question is too broad, the stories will be very general, and if the prompt question is too narrow, it may inhibit the type of open-ended inquiry necessary.

The prompt question

The specific question, developed to assess advances along the Pathway to Prosperity and resilience, asked respondents to share an experience related to a process of change (positive or negative) that had significantly influenced the well-being of their family, and was then captured as a narrative. Below is the prompt question—proposed to prompt these type of experiences—which can be slightly adjusted depending on whether the study is done as an assessment, baseline, evaluation or impact study; and/or the context in which it is conducted.

“Think about an important experience (positive or negative) that significantly influenced your or your household’s livelihoods or wellbeing. What would you tell your best friend about what happened, why it happened, what it meant for you, what did you do about it, and what it led to?”

The narrative below is from a respondent who self-signified their experience as one that led to a **prosperous pathway**:

The biggest change in my life was when I decided to become a member of the cooperative and, through it, I started to benefit from the ACORDAR [Alliance to Create Opportunities for Rural Development through Agro-Enterprise Relationships] project and ADDAC [Asociación para la Diversificación y el Desarrollo Agrícola Comunal]. They taught me to care for the environment, to work with other producers, and especially to know how to work with credit. I call this my school of life. In addition to the support they gave us to work with credit, we are marketing our products through the cooperative and I am getting a better price for my products (Nicaragua, 2015).

The narrative below is from a respondent who self-signified their experience as one that led to a **resilient pathway**:

I started maize production in 2011. For 2 years, it was the source of my livelihood and I took a loan to start maize production on a large scale on rented land. However, in 2014, my maize was affected severely by an unknown disease that to date has no remedy. I was frustrated because this was my main investment. I decided with my husband to start sweet potato production on the portion of land that was used to produce maize. Alongside sweet potato production I also ventured into finger millet production. This was a real success that helped me also venture into vegetable and banana production. In the same year, I started poultry farming with five chickens, which then increased to a population of forty. I could sell eggs and chicken, which helped me to pay school fees for my children. Because I really loved diversification in farming, I also started rabbit production with 12 animals but I was disappointed because there was no market, forcing me to quit. However, these rabbits provided manure and their urine is believed to act as a pesticide. In 2016, I decided to venture fully into vegetables, finger millet and banana

production as my main activities, which have been a success; however, disease is the main challenge. If I could get a market for rabbits, I would reconsider starting again, but I will never go back to maize (Kenya, 2017).

And the narrative below is from a respondent who self-signified their experience as one that led to a **vulnerable pathway**:

Ever since we started receiving training on the type of crop we could produce in our area, we have seen positive changes in the amount of yields we get. I adopted these new techniques and it was good. However, about 2 years ago, I experienced a huge loss. I did all the routine practices, but the rains were very little. I had taken a small loan to cultivate my land and plant pigeon peas. I was planning to pay back the loan by selling the produce, but I couldn't. The little produce I got was used for home consumption. I also was not able to increase the number of livestock I had. Instead, I was forced to sell some of my goats to pay back the loan. I also experienced challenges in paying fees as I had no harvest to sell. I then started planting some green grams as they required less water and the prices were better. I also started keeping some chickens to help in tough times (Kenya, 2017).

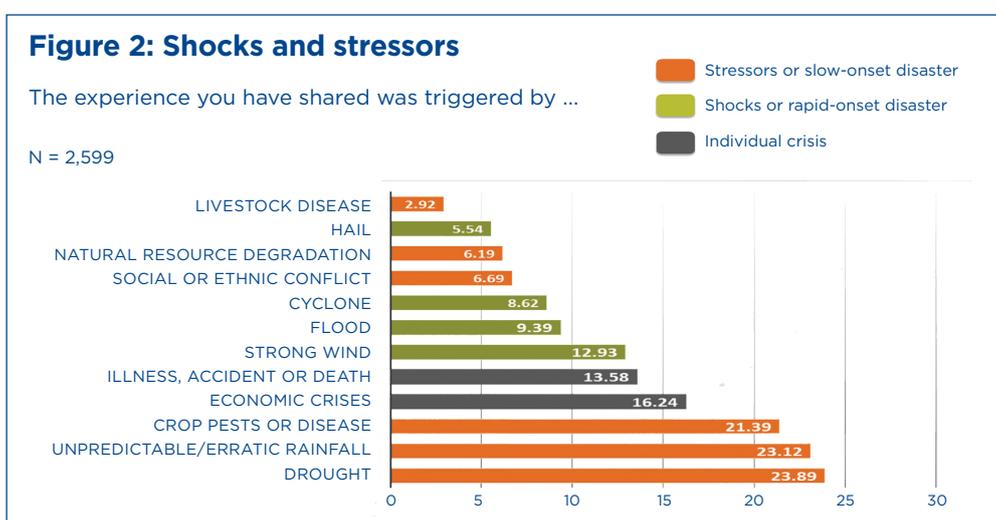
The signifiers

Respondents were then asked to add meaning to (signify) their stories by responding to follow-up closed-ended questions, called “signifiers”.

Multiple choice questions

These are not unique to SenseMaker, but how the responses are used in the analysis may be different. They are used to learn more about the experiences shared by respondents or to filter the analysis to compare different groups of respondents. An important one used for understanding resilience is a follow-up question on the shocks and stressors respondents faced in the experience shared.

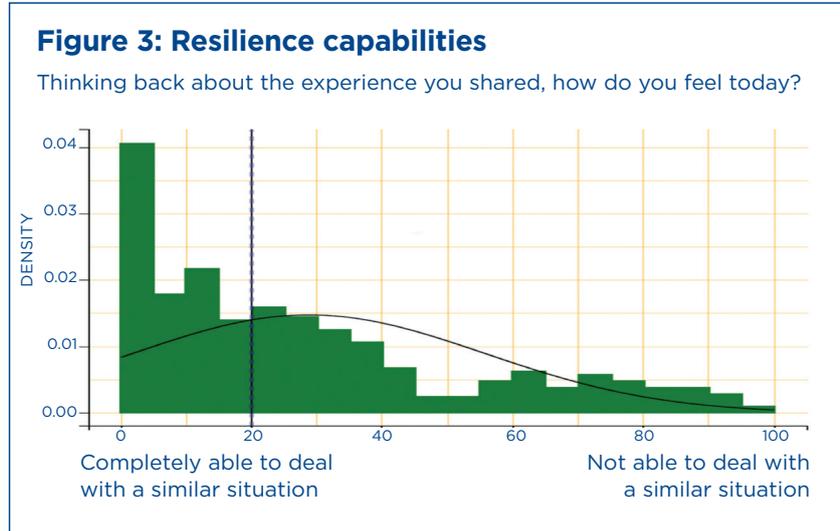
Figure 2 shows the responses to this question from a multi-country resilience study conducted in 2016. This result showed that climate-related factors were the main stressors affecting the possibility of households moving along the Pathway to Prosperity. These, along with economic and health-related individual crises, created the need for a multi-sectoral approach to resilience.



Sliders

One kind of signifier or follow-up question is known as a slider, in which respondents are asked to signify the experience shared by indicating the balance between two extremes. Thus, respondents are not asked to choose one of the extremes as in a multiple-choice question, but to provide a nuanced answer between the two extremes, generating a continuous variable that ranges from 0 to 1.

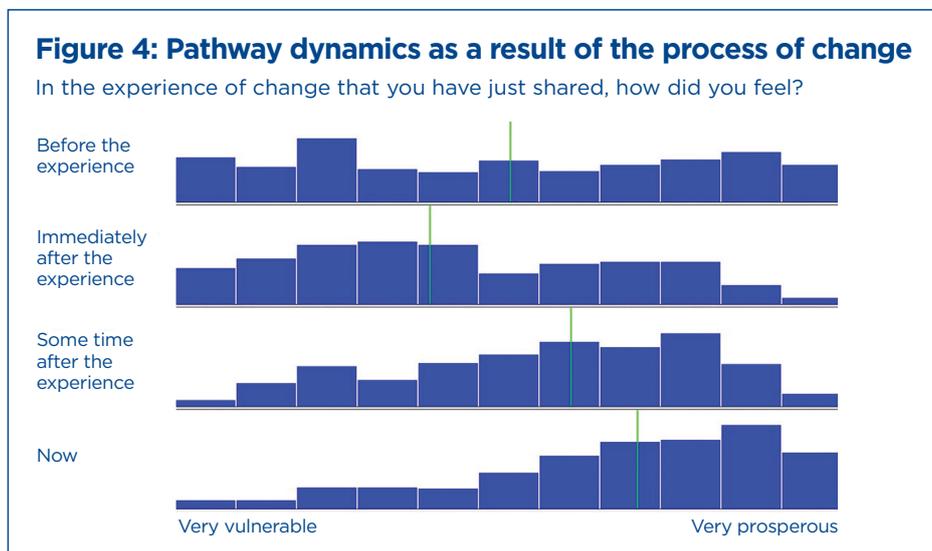
Figure 3 shows one slider used to assess resilience capabilities by asking respondents the extent to which they feel capable today of dealing with a similar situation in the future. This slider can be used as an indicator of resilience capabilities to the similar types of shocks and stressors experienced in the narrative shared by the respondent.



Slider with stones

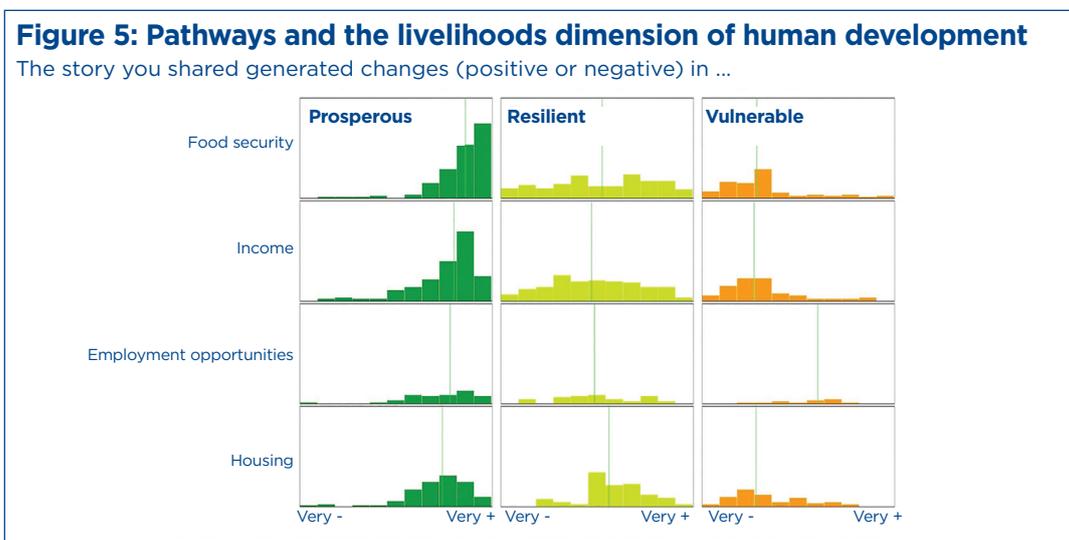
This is a type of signifier or follow-up question in which respondents are asked to signify the experience shared by selecting options, called “stones”, and indicating the balance between two extremes for each option selected. One of the most important sliders used was meant to assess the pathways that respondents followed in the experience of change shared in their narratives. Respondents were asked how they felt before the experience, immediately after, some time after, and now; and to place these four moments (or stones) along a spectrum from “very vulnerable” to “very prosperous”. Figure 4 shows the responses of 419 participants in the Farmer-to-Farmer Program in Kenya, showing a progression of respondents feeling “neutral” between “vulnerable” and “prosperous”

before the experience of change described in their story occurred, to feeling “somewhat vulnerable” immediately after, and then progressing again, to reach a higher level than where they were before, thus, “bouncing back better”. These responses at the median (green lines) describe a resilient pathway that in this study was followed by 20 percent of respondents. Those who showed a progression from “very vulnerable” to “very prosperous” in their responses from “before” to “immediately after”, “some time after” and “now”, were considered to have followed a prosperous pathway, and made up 40 percent of respondents. In addition, 40 percent were found to be rebounding after facing shocks and stressors, but were still in a worse situation than before.



Another “slider with stones” signifier used to assess changes in three dimensions of human development and filtered by the pathways followed by respondents, showed a strong association between the pathway followed and its three dimensions. (See Figure 5 for the findings related to the livelihoods dimension).

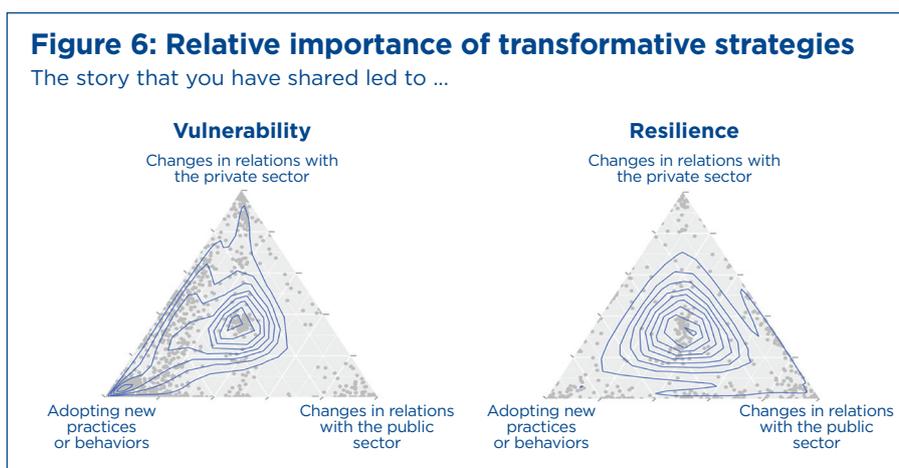
1. **Livelihoods:** Food security, income, employment opportunities and housing.
2. **Access to institutional services:** Basic services, health services and education opportunities.
3. **Empowerment:** Decision-making power, gender equity, influence capacity and resilience capabilities.



Triads

To better understand the actions that respondents took to cope with the shocks and stressors faced in their experience of change, as well as their adaptive responses and transformative strategies, “sliders with stones” were used, as well as another type of signifier called “triads”. Triads ask respondents to show the relative importance of three variables (one at each apex) in the story shared. The apexes are constructed as evenly balanced labels, with the center of the triangle representing where all variables are equally present. The respondent is asked to mark a point in the triangle to indicate how the story

shared relates to the three labels. Figure 6 shows the responses related to transformative strategies taken and their outcomes in terms of changes in individual and collective practices and behaviors, changes in private sector practices, and changes in public sector practices or policies. On the one hand, this shows the relative importance that changes in public sector practices and policies had for those respondents who followed a resilient pathway, in comparison to those who followed a vulnerable one. On the other hand, change in collective behaviors was relatively more important for vulnerable respondents.



Thus, the combination of narratives and signification data provided detailed and insightful information, which was immediately accessible for visualization and analysis. In addition, project and country program staff, partners and beneficiaries were brought together to interpret and discuss the

findings through sensemaking workshops, to identify ways to better support beneficiaries and communities to move along the Pathway to Prosperity and become more resilient to shocks and stressors. Other stakeholders were then invited for broad sharing and to discuss the findings.

PROGRESS TO DATE

Pilot study

The first pilot was conducted in Nicaragua during 2015 with the objective of (1) assessing farming households' progression along CRS' Pathway to Prosperity and resilience after 17 years of agriculture and livelihoods programming in Nicaragua, (2) understanding factors that contributed to (or hindered) any progression, and (3) informing future agricultural livelihoods programming design. For this study, a stratified sample of project participants was used to ensure a significant number of narratives from farmers who had participated in agricultural projects designed and implemented with different approaches, as well as an additional group of non-participants for comparison purposes, leading to the collection of data from 413 respondents. This first experience demonstrated the potential for this methodological approach to complement mainstream M&E tools.

Resilience assessment

The first pilot in Nicaragua led CRS to undertake a resilience baseline assessment in 2016 to better understand and assess resilience. The study was conducted in six countries across three CRS regions:

- East and South Asia (ESA): Bangladesh, Indonesia and Timor-Leste
- Latin America and the Caribbean (LACRO): Guatemala and Nicaragua
- East Africa (EARO): Tanzania

In ESA and LACRO, the assessment was done as the baseline for the Prepared and Resilient (PAR) Project; and in EARO, the assessment was done as part of the Agriculture Landscapes Project design. This study sought to respond to the following questions:

- What actions or combination of actions do households (and communities) take to cope and adapt, or to transform their systems and structures, to respond to shocks and stressors?
- What resilience pathways did households (and individuals) experience and how did these influence development outcomes?
- What are the capabilities or combination of capabilities that make a difference to households (and communities) in responding to different types of shocks and stressors?

Data was collected from 2,599 respondents. As part of the analysis and interpretation, country program staff, partners and beneficiaries were brought together to discuss the findings and ways to better support beneficiaries and communities to become more resilient to shocks and stressors.



Cáritas-Zacapa coordinator David Bardales field tests SenseMaker in Guatemala. *Photo by Rita Muckenhirn*

Farmer-to-Farmer Program evaluation

Informed by these two experiences, another study was conducted in Kenya in 2017 as part of the final evaluation of the CRS Farmer-to-Farmer Program. The study sought to answer these questions:

- What pathways did farmers experience due to the process of change fostered by the program?
- How did the different pathways followed by farmers influence their development outcomes?
- What assets made the difference for progressing along the Pathway to Prosperity and rebounding when faced with shocks or stressors?
- How did the Farmer-to-Farmer Program contribute to accessing these assets?
- What livelihood strategies did farmers pursue and how did they influence their advancement along the pathway and their resilience?

This study is being replicated in Uganda with the same objectives and data collection has been finalized; however, the design was revised based on the lessons learned from the study in Kenya.



Geraldine Lengai (right), a student from the University of Nairobi in Kenya, facilitates the collection of a narrative and its self-signification with Velesi Mwania, a Farmer-to-Farmer Project participant. *Photo by Rita Muckenhirn for CRS*

LESSONS LEARNED

Methodology-related

The SenseMaker-based tool for assessing advancement along the Pathway to Prosperity and resilience capabilities, shared in this brief, was developed through iterative cycles of testing, making sense and adjusting from 2015 to 2017, leading to valid and robust conclusions. This was possible because: (a) the tool designed (signification framework) was anchored in a theoretically sound analytical framework; (b) the sample was properly designed to allow the visualization of patterns, and the conducting of statistical analysis; (c) sufficient time was given for analysis, including the use of complementary analytical software for deeper analysis of the narratives and the self-signification data; and (d) results were interpreted with multiple stakeholders to consider different perspectives, contextualize the analysis, and reflect on what these findings mean for decision-making and taking action.

It also promoted an open inquiry approach that revealed new issues for further inquiry and action. For example, production risk and farm families' vulnerability to climate emerged as topics that required further inquiry and action. Climate problems had often been treated in project design as a critical assumption that project designers chose not to control, but that could endanger success if the assumptions were incorrect. CRS no longer treats climate problems as unlikely events in programming design.

Another example was the realization that shocks and stressors most affect those households that are indebted and have no savings, leading them to a vicious cycle of vulnerability; while households with savings tend to be much more resilient. As a result, CRS decided to incorporate specific activities to promote savings and financial education in their ongoing projects in Southeast Asia.

The use of the SenseMaker-based tool also challenged CRS to examine some of the established development concepts and theory of change assumptions underpinning its programs. At the beginning of the analysis process, it was sobering for the country program team that designed and implemented agricultural projects in Nicaragua to discover that an important percentage of project participants still felt highly dependent on external support. This result led the team to challenge the whole concept of self-sufficiency. This concept needs to be revisited, as processes of change always need social interaction and, most likely, external support.

Content-related

The type of inquiry prompted by the SenseMaker methodology facilitated the post-categorization of data as the analysis process progressed. This was done by observing and further inquiring into five different pathways that households and individuals followed in the experiences shared (progress, rebound better, rebound, rebound worse and collapse) that unpacked the overarching Pathway to Prosperity. This was fundamental to operationalizing the basics of the resilience concept, which were then used as inputs for a second level of post-categorization of farm families into families with prosperous, resilient or vulnerable pathways. This led to the development of a simple resilience indicator that could be aggregated and at the same time used to compare the results from the nine case studies conducted to date.

This was crucial for assessing resilience, but also for generating a further understanding of the causes of vulnerability and the factors that contribute to or hinder it. An important insight was to identify the importance of different shocks and stressors across countries and regions, showing that climate-related factors were the main ones affecting the populations in all case studies. In addition, it was found that different shocks and stressors interrelated in peoples' lives, requiring integral and multi-sectoral responses to build resilience. In terms of human agency, results showed that most respondents were coping by reducing consumption. Coping actions taken by respondents can be beneficial or harmful. For example, having savings as cash or assets is a positive coping mechanism, borrowing money to cope has a less positive result, while a vicious cycle of borrowing and debt is a very negative coping mechanism. Adaptive and transformative interventions (in contrast with coping actions) show stronger relationships with improved outcomes (in terms of human development) and progression along the Pathway to Prosperity.

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