



CASE STUDY

EXAMPLES OF EFFECTIVE RESILIENCE PROGRAMMING

Global Resilience Partnership
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**GLOBAL
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Images

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Contents

| | |
|--|----|
| 1. Introduction..... | 1 |
| 1.1 The Global Resilience Partnership | 1 |
| 1.2 About this case study | 4 |
| 2. Programs reviewed..... | 10 |
| 3. Lessons from effective programs | 19 |
| 3.1 Inclusion into resilience pathways | 19 |
| 3.2 Designing for use and sustainability | 23 |
| 3.3 Strengthening supportive systems | 29 |
| 4. Conclusions and recommendations | 36 |
| 5. References | 37 |
| Appendix: Programs reviewed..... | 39 |

List of tables and figures

| | |
|---|----|
| Table 1: Strength of the evidence | 5 |
| Table 2: Types of evidence included | 7 |
| Figure 1: Reasons for commitment to share and sustain agricultural practices..... | 25 |

1. Introduction

1.1 The Global Resilience Partnership

The Global Resilience Partnership (GRP) is a partnership of public and private organizations joining forces toward a resilient, sustainable and prosperous future for vulnerable people and places. The partnership considers resilience to be a prerequisite for understanding the drivers and impacts of complex issues to help communities, governments, development and humanitarian organizations, and the private sector to identify and enable novel solutions to global problems. GRP defines resilience as having the capacity to persist, adapt, and transform in the face of change.

GRP is founded on knowledge excellence, inclusive decision-making and a commitment to finding new ways of dealing with intractable issues. Stability and assumptions of linear, incremental change are history. Our future will be defined by three drivers: increasing complexity, global inter-connectivity, and surprise.

The year 2019 is a critical moment in terms of harvesting evidence from resilience interventions and influencing related discourse and political processes. There remains a challenge to increase the attention and investment in resilience, and to further our knowledge of what policies, practices and innovations are needed to build resilience. This is the gap GRP aims to fill. This case study represents part of that effort, and contributes to a larger flagship report drawing together evidence generated from across the partnership, including results from GRP's two Challenge Funds. This forms the basis for GRP's direct contribution to the global evidence base.

Resilience is seen as a unifying concept that can bring together development and humanitarian sectors, helping to move from protracted crises to longer-term development for the world's poorest and most vulnerable people. But what is it about resilience programs that means they go beyond good, holistic development or timely humanitarian response? To address this, GRP developed a set of guiding principles for resilience:

- 1) **Embrace complexity.** Working to identify the root causes of complex development challenges, and how these can be addressed within the political, economic, ecological and social systems in which they exist.
- 2) **Recognize constant change.** Risks and stresses are becoming increasingly unpredictable, uncertain and unavoidable. Systems that have the capacity to navigate dynamic and uncertain futures are required.
- 3) **Enable inclusive decision making.** Putting people and communities, especially women and marginalized groups, at the center of decisions and empowering them to help develop equitable and sustainable solutions.
- 4) **Enhance ecosystems integrity.** Approaches to development must ensure a good life for all while maintaining the integrity of the Earth's ecosystems.
- 5) **Promote flexibility and learning.** A rigid or fixed solution will not build resilience for change; approaches need to be adaptive and responsive, constantly learning from what does and does not work.
- 6) **Leverage innovation and opportunity.** Developing new solutions and innovations that engage with the complexity of development challenges will not only help build resilience but will be essential to transforming to sustainable and just development.

Another helpful and complementary source is the UN common guidance on resilience (see Box 1).

Box 1 United Nations Shared principles for resilience-building

The resilience-building efforts of the United Nations are guided by several common principles that will inform assessment, planning and implementation:

1. Leave no one behind and focus on the most vulnerable and at-risk populations.

Resilience-building needs to benefit all people and to leave no one behind by reaching out to those most in need, wherever they are, in a gender-responsive manner that targets their specific challenges and vulnerabilities.

2. Ensure equality, non-discrimination and a human rights-based approach. Without full respect for human rights, resilience cannot be achieved. Resilience must be built on active, free and meaningful participation from all stakeholders; comply with international and legal human rights norms and standards; be transparent; and promote equality and non-discrimination.

3. Be accountable for pursuing inclusive partnerships. No single actor can deliver comprehensive approaches to resilience-building. It is crucial that all stakeholders be engaged and jointly explore and reconcile a broad range of perspectives so that the resilience of the most vulnerable individuals and systems can be strengthened.

4. Do No Harm. Resilience-building is politically, socially, environmentally and culturally sensitive. Therefore, development, humanitarian and peacebuilding organizations must minimize the harm that they may be inadvertently doing by being present and providing assistance. This includes ensuring that assistance does not increase risk, vulnerability and exposure and that building resilience in one community, ecosystem or country does not compromise resilience in another.

5. Engage and commit over the long term in a flexible, yet strategic approach.

Resilience-building requires a multi-year approach that addresses immediate needs and the root causes of poverty, vulnerability and human suffering. Resilience approaches must be flexible and sustained through well-calibrated short-, medium-, and long-term actions so that actions can be adjusted as new impacts, risks, hazards and disturbances manifest themselves.

6. Pursue context-specific and tailor-made approaches. States and societies are built around complex and unique interdependencies among political and security actors, institutions, the private sector, civil society, communities, individuals, the environment and the economy, among others. Resilience-building will need to start from a broad and contextualized analysis of capacities, vulnerabilities and risks to anticipate how a system will respond when it comes under pressure.

7. Act early to prevent. Emphasis on prevention includes sharing risk analyses and acting before events materialize as well as looking beyond quick-fix solutions to address the root causes of people's vulnerability and poverty and reducing their risks. Acting early may also prevent one type of emergency or protracted crisis from igniting another.

8. Build on local and national capacities for ownership and leadership. Resilience is primarily about the capacity and agency of the people, communities and systems that are at risk. The success and sustainability of resilience-promoting support depends on the degree of ownership and leadership roles that the affected people, national and local governments and institutions, or systems assume.

Adapted from: UN (2018) Common Guidance on Helping Build Resilient Societies

The need for knowledge on resilience

Knowledge generated about what works in strengthening resilience can be promoted to amplify positive impact across geographies. By identifying and filling resilience learning and knowledge gaps, GRP aims to provide decision makers with compelling, actionable evidence and knowledge to influence policy change. Measuring resilience is intended to enhance the accountability of funding as well as offer a way of assessing progress. Three purposes for resilience measurement can be defined:¹

¹ ODI 2016

- **Diagnostic:** gauging the degree to which a system (household, community, city, etc.) is resilient to diverse shocks and stresses, i.e. measuring/quantifying resilience.
- **Evaluative:** gauging the degree to which resilience initiatives/projects/programs are successful in achieving their objectives, i.e. assessing impact.
- **Planning:** articulating the intended outcomes of the resilience approach, and understanding how the proposed design fits into the context of the intervention, i.e. assessing relevance.

There is an urgent need for robust, verifiable, and credible evidence on what works in resilience building and what does not.² A focus is therefore on generating evidence of what works, what does not work and, critically, why.³ The challenge is to demonstrate that the work we do has the desired impact.⁴ To demonstrate the impact of resilience building interventions, resilience has to be measured first.

But how can resilience building initiatives be measured? This is no easy task. Methods and even the ability to measure resilience have been contested. What counts as an indicator of resilience has been defined and redefined in somewhat chaotic fashion according to different interpretations of what the concept means, as well as how best to go about measuring it.⁵ This does not only refer to variations in how the definition is worded or framed, but also to the multitude of ‘principles’, ‘qualities’, ‘dimensions’ and ‘characteristics’ that go beyond a simple definition and aim to describe what resilience is about.⁶

Though universal indicators may not exist, some kind of universal principles of resilience are necessary to ensure that there is accountability, and, above all, that it is truly resilience that is being measured. Delineating what is meant by resilience is therefore necessary to determine how resilience can be measured.

How to measure resilience

The field of resilience measurement is exciting and highly dynamic. Considerable progress has been made in measuring a concept that is widely recognized to be powerful yet somewhat nebulous.⁷ Despite the numerous differences between approaches to resilience measurement, there are also a surprising number of similarities among them. The emerging field of resilience measurement could build on these, in order to develop an evidence base for resilience interventions. To measure improvements in resilience, empirical evidence is needed on what factors contribute to it, in which contexts, and for what types of shocks.

Practically, resilience measurement needs to include attention to the following:

- **Shocks/stresses:** These should be captured to measure resilience and its returns. Though shocks/stresses are unpredictable, they can be captured through a range of methodologies, from self-reporting to the use of meteorological data.
- **Measuring resilience capacities:** Resilience is an intermediary outcome that can be proxied by resilience abilities, capitals or capacities, e.g., absorptive, adaptive and transformative capacities. GRP does not prescribe how resilience should be operationalized and supports grantees and partners in generating evidence through a range of methods.
- **Impacts and outcomes of resilience building:** GRP aims to transform risks into opportunities so that vulnerable people can thrive in the face of shocks and stresses. The impact of resilience building can be measured by observing relevant well-being

² Ibid ODI 2016

³ IDS 2017

⁴ Keating et al 2017

⁵ ODI 2015

⁶ Ibid ODI 2015

⁷ Ibid ODI 2016

indicators (food security, health, income, poverty, empowerment, etc.) before and after shocks/stresses, and comparing this to a counterfactual.

- **Navigating complexity:** The interaction between various scales/dimensions, potential trade-offs, and unintended consequences should be explored. These issues are often underrepresented in resilience measurement framework. Yet to be able to unpack resilience and learn from both success and failure, it is important to get a clear idea of the context (gender, power dynamics) and real problems resilience projects aim to address. This needs to be explored through various participatory and qualitative approaches as part of a mixed methods design.

1.2 About this case study

Purpose and focus

In line with GRP's role as a curator of resilience evidence and lessons from and beyond its own programming and managed investments, this case study explores the design of GRP partner resilience programs and the elements that contributed to their success (or otherwise). We assess the relative advantages and disadvantages of using different program designs, and attempt to identify key aspects for resilience programming. Where possible, we have distilled lessons that may be replicable across contexts, and made recommendations for future resilience programming. The case study is intended to be useful to those funding, designing, and implementing resilience programs.

Scope

The case study considers evaluation and research material submitted by GRP partners to the Secretariat in response to a call for evidence in May 2019. Organizations close to GRP's network also submitted materials, which have been included. As proffering evidence was voluntary, the case study uses only examples and is not based on full coverage of GRP-funded programs.

In total 42 programs were reviewed, although the lessons from at least four of these are based on multiple sub-projects operating in 2–15 countries. A further 2 studies focusing on resilience components but not assessing a specific program intervention were included, bringing the total reviewed to 44 (see Appendix for a full list). The materials cover examples from Africa, Asia, Latin America, and Polynesia. The programs reviewed were (or still are) operational from 2013.

Process

In order to identify 'effective' resilience programming, we first sought to identify and classify their discernible effects. For each program, we identified at least one (and in nearly all cases more) '**resilience contribution**', made or attempted, from their evaluations or associated research. A few programs presented their contribution within a resilience conceptual framework covering Adaptive, Absorptive, Anticipatory and Transformational capacities. However, within this group there was variability in the definitions used. Therefore, we focused on the assets, capacities, or connections promoted to support the ability to deal with shocks and stresses.⁸ We also sought out unintended positive and negative contributions as well as unsuccessful attempts to support resilience.

Our second focus is on the **program design characteristics** that led to the resilience contribution, either via direct impacts (e.g. interventions improving a resilience capacity or well-being in the face of shocks and stresses) or indirectly, by improving either the relevance, effectiveness, efficiency, or sustainability⁹ of the interventions.

⁸ To avoid a broad reflection on good development practice, we have not included programs where there is no discernible link to the ability to deal with shocks and stresses.

⁹ OECD 1991

For a typology of design characteristics, we were led by the content of the partner material, but approached the review with the following aspects in mind: **Engagement**: Who is involved in resilience design? How is **context** understood and incorporated? **Institutional position**: What is the 'home' for the design? How should the design connect to other initiatives, especially government and regional initiatives? What **time frames** are factored into the design? What **interventions/activities** are chosen and how?, and **Design composition**: Layering, linking, sequencing, redundancy.

Finally, we reviewed the program documents for the **contextual factors** that were found to have supported, inhibited, or modified the resilience contribution in some way.

Evidence included

The study draws on all materials submitted to the GRP Secretariat, with the exception of two pieces that present the program's objectives or activities without evidence of resilience contribution. Prominence has been given to programs in which the contribution has been evidenced using robust evidence (see Table 1). We have included (and labeled) programs where the contribution is only theorized or intended where they present an interesting progression to the field of resilience programming and are based on a body of work or thought.

Beyond the information submitted, the case study also draws on other publicly available academic and evaluative evidence on resilience where relevant to the programs reviewed.

Table 1: Strength of the evidence

| Test type | Strong | Moderate | Weak | No evidence |
|------------------------|--|---|--|--|
| Methodological | Evidence collected using recognizable, robust, and transparent methods which could include experimental (counterfactual designs) or rigorous and large qualitative studies | Some evidence collected as in 'Strong' or methods do not use counterfactuals or sufficiently address the question of attribution but are recognizable techniques for assessing outcomes | Methods used are not considered to be sufficiently robust or clearly presented | Methods are either <u>not presented</u> or considered too weak to have faith in the results produced |
| Number reviewed | 22 | 19 | 0 | 3 (methods not presented) |

GRP specifically asked its partners to share their best and most robust resilience assessment evidence. Various methodologies may be applied to measure improvements in resilience; however, there are certain mandatory and preferred requirements for robust impact assessments which were used to prioritize studies for review:

- Mandatory: Evaluation of resilience intervention impacts
- Mandatory: Counterfactual analysis performed (control group)
- Mandatory: Shocks/stresses are monitored and measured
- Mandatory: Resilience is operationalized (e.g. capacities) and/or well-being variables (e.g. poverty, nutrition, empowerment) are measured in relation to shocks/stresses
- Preferred: Base and endline data collected
- Preferred: Randomized allocation of treatments (RCT)
- Preferred: External/independent (peer-reviewed) evaluation

The majority of evidence submitted met most of the mandatory requirements for resilience measurement, although the measurement of capacities operationalized in relation to a shock was the most variably applied (if at all). Where it is not used, evaluations hypothesize the contribution the capacities will make based on their program frameworks; however, a number of studies that assess how people deal with a shock demonstrate that the relationship between Intervention – Capacity – Strategy is often not predictable and, beyond emergency response interventions, is difficult to isolate with precision.

More than half of the evaluations reviewed included used some form of longitudinal study capturing information from at least two points in time. The majority appear also to have been conducted by an actor external to the program. However, the independence of some evaluations is sometimes difficult to identify or non-existent (i.e. it was conducted by the program or organization). No Randomized Control Trials were submitted.

Table 2 below provides detail on the evidence reviewed, including the assessment methodologies, the form of resilience measurement applied, the shock context, and the study sample size.

Limitations

The review is based entirely on extant secondary data submitted to the GRP Secretariat and Itad. The material was submitted in its original form, meaning the case study is dependent on the content and quality of the existing evidence base. As demonstrated above, all material received was generated via evaluative methods involving the collection of primary quantitative and qualitative data, and often using control groups and a baseline for comparison.

Partners were requested to send rigorous impact evaluations where possible, and those received are prioritized in the case study. Some impact evaluations focused mainly on the effect of the interventions, and less on the other aspects of program designs in which we were interested. For these, broader program evaluations were useful, although the link to effects was in many instances under-described.

Overall, the quality of evidence received was sufficient for inclusion in the case study, to **highlight examples and explore lessons**.

Table 2: Types of evidence included

| Organization | Impact assessment methodology: Counterfactual analysis | Resilience measurement | Shocks | Sample size |
|--|--|---------------------------|--|-------------|
| <i>Impact assessments (with counterfactual)</i> | | | | |
| Building Resilience in the Arid and Semi-Arid Lands of Northern Kenya, Oxfam, | Ex post (endline) with control-treatment groups (no baseline) and matching | Capacities and well-being | Drought/water shortage; flooding | n > 720 |
| Building the Resilience of Vulnerable Coastal Communities against Floods in Sri Lanka, Seacology | Ex post (endline) with control-treatment groups (no baseline) and matching | Capacities and well-being | Flooding, coastal erosion | n > 223 |
| CPACC, Oxfam, Zambia | Ex post (endline) with control-treatment groups (no baseline) and matching | Capacities and well-being | Drought/water shortage; flooding | n > 827 |
| CRLESP, Heifer International, Zambia | 6 rounds of panel data collection, control groups | Assets and capacities | Combined | n > 178 |
| FarmerLink, Grameen, Philippines | Difference-in-difference, no matching | Capacities | Combined | n > 830 |
| Graduation with Resilience to Achieve Sustainable Development (GRAD) Project, CARE, Ethiopia | Ex post (endline) with control-treatment groups (no baseline), no matching | Capacities and well-being | Drought/water shortage | Unclear |
| Mahila Housing Trust, India | Difference-in-difference, no matching | Vulnerability index | Heat stress, water & vector-borne diseases | n > 1250 |
| MRED, Mercy Corps, Nepal | Post-shock survey during and after shock (no baseline) and matching | Capacities and well-being | Flooding | n > 764 |
| Myanmar Alliance | Ex post (endline) with control-treatment groups (no baseline) and matching | Capacities and well-being | Drought/water shortage | n > 1,498 |
| Nampula Adaptation to Climate Change (NACC) Project, CARE, Mozambique | Difference-in-difference, no matching | Capacities and well-being | Combined | n > 543 |
| Practical Action, Agriculture and Water Resilience in Coastal Areas of Bangladesh | Difference-in-difference, no matching | Capacities and well-being | Flooding | n > 403 |
| PRIME, Mercy Corps, Ethiopia | Ex post (endline) with control-treatment groups (no baseline) and matching | Capacities and well-being | Drought/water shortage | n > 1,500 |
| Projet de Résilience, Sécurité Alimentaire et Nutritionnelle, PRSAN, Burkina Faso | Ex post (endline) with control-treatment groups (no baseline) and matching | Capacities and well-being | Drought/water shortage | n > 700 |

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|--|--|--|--|-----------|
| R4 Rural Resilience project, Oxfam, Ethiopia | Difference-in-difference, matching | Capacities and well-being | Drought/water shortage | n > 459 |
| R4 Rural Resilience project, Oxfam, Senegal | Difference-in-difference, no matching | Assets and capacities | Drought/water shortage | n > 1,618 |
| Strengthening the Dairy Value Chain (SDVC), CARE, Bangladesh | Longitudinal panel data collection; treatment and control groups, matching | Assets and capacities | Combined | Unclear |
| SUR1M, Niger | Difference-in-difference (DiD), no matching. | Capacities and well-being | Drought/water shortage | n > 2,300 |
| TRANSFORM, Mercy Corps Indonesia | Comparing baseline to endline for up and downstream households, no control, no matching | Assets and capacities | Flooding | n> 870 |
| <i>Other studies</i> | | | | |
| 100 Resilient Cities | Midline study: purposive sample of cities involved in program, 3 rounds of data collection, retrospective baseline data collection | Capacities of institutions and systems | Combined | n >22 |
| ACCRA [Africa Climate Change Resilience Alliance] - Mozambique, Ethiopia, Uganda | Qualitative endline study (no baseline) | Capacities of institutions and systems | Combined | n > 110 |
| Adaptation Learning Programme, CARE, Kenya | Cost-benefit analysis, allowing for construction of a systems dynamics model to model future climate change impacts | Capacities and well-being | Combined | n > 65 |
| African Development Bank's Sustainable Land & Water Resources Management Project (SLWRMP), Mozambique | Midline study: comparing differences between participating smallholders and larger landholders | Assets and capacities | Combined | Unclear |
| Central America-Melanesia (CA-MEL) Resilience Building Project - Guatemala, El Salvador, Solomon Islands | Endline study: secondary data review, primary data collection | Capacities and well-being | Combined | n > 287 |
| Climate Investment Fund | Theory-based approach: contribution analysis and comparison across cases | Capacities | Combined | Unclear |
| Food for Peace, SHOUHARDO3, Nobo Jatra, and SAPLING programs, USAID, Bangladesh | Baseline study with multivariate regression analysis | Capacities and well-being | Flooding, deforestation, landslides, water shortages | n > 2,776 |

| | | | | |
|--|---|---|--------------------------|-----------|
| MAR, Ethiopia | Small-scale, focused qualitative study | Capacities and well-being | Drought / water shortage | n > 50 |
| Mercy Corps - Nepal | Panel survey. Counterfactual analysis unclear. | Capacities and well-being | Earthquake | n > 750 |
| Nepal-India Transboundary Resilience Project | Endline study: baseline taken (though not consistently utilized in findings), no control | Capacities and well-being | Flooding | n > 590 |
| Resilience in the Sahel Enhanced, USAID, Burkina Faso, Niger | Midline evaluation: baseline and midline, treatment and control groups, PPS sampling | Capacities and well-being | Drought/water shortage | n > 2,492 |
| Zaman Lebidi - Burkina Faso - Christian Aid | Realist evaluation: progress measured against baseline, no control groups, stratified sampling of project beneficiaries | Capacities and household resilience scoring | Drought/water shortage | n > 70 |
| Zimbabwe Development Food Security Activities, USAID | Comparison of impacts of different types of programming: secondary data analysis, different treatment groups | Capacities and well-being | Drought/water shortage | n > 2,364 |

2. Programs reviewed

This section provides an overview of how and where programs attempted to contribute to resilience, along with a summary of the major results attributed to them in their evaluations. The programs are grouped within broad geographies, where there may be covariate shocks; although there are a number of national overlaps within them, and a number of common interventions, the evaluations indicate that the impact of the programs is often linked to their relevance to the idiosyncratic shock context. In the next section, the lessons across the programs are analyzed thematically.

East Africa

| Project, region | Intervention summary / typology | Resilience capacity and/or well-being impacts |
|--|--|--|
| PRIME - Mercy Corps - Ethiopia | PRIME's interventions aimed to increase livestock production and improve market linkages for pastoralist communities by improving livestock production and competitiveness; enhancing households' resilience and ability to adapt to climate change; increasing livelihood diversification and long-term market opportunities; innovation, learning and knowledge management; improving the nutritional status of children and mothers. | Overall, results show positive impact on dietary diversity, poverty status, and livestock ownership and management. These overall positive food security, economic, and livestock management outcomes are particularly remarkable given the sheer intensity of drought faced in 2015. This study found evidence that suggests there may be complex, non-linear interactions between project impact and shock severity. Depending on the intervention and shock type, project impact may be negligible at low severity and overwhelmed completely at high severity. |
| Oxfam, Building Resilience in the Arid and Semi-Arid Lands of Northern Kenya | The project's interventions included a Community-Managed Disaster Risk Reduction (CMDRR) approach, working with local communities to set up Community Disaster Management Committees (CDMCs), which were then assisted with training and in writing contingency plans to better deal with crises. The project also sought to integrate community-level plans and committees into the work of the county government. Finally, the project tried to improve the flow of information across the county, both in terms of livestock health and early- warning systems. | Data suggest that the project improved the resilience of project households. Project households scored positively on average in 44% of the resilience indicators identified for the Effectiveness Review, compared with 38% for the comparison group. Regardless of the weighting method used, the project had positive effects on the resilience index. The base resilience index was a little over 5% higher in the project households than the non-project households in the sample. |
| CARE, Adaptation Learning Programme, Kenya | ALP used participatory, community-led methods to find solutions to problems caused by the changing climate. This involved facilitating analyses of vulnerability, climate risks, and current adaptive capacity, in order to create community-based strategies that take into | This study is a cost-benefit analysis of the community model used, so does not directly consider resilience impacts for beneficiaries. The analysis, however, found that \$1 invested in adaptation generates between \$1.45 and \$3.03 of wealth accruing to the communities, suggesting the methods have potential to boost absorptive capacities. |

| | | |
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| | account the broader regional and national contexts. | |
| CARE, Graduation with Resilience to Achieve Sustainable Development (GRAD) Project, Ethiopia | The GRAD Project sought to empower individuals and communities through a range of interventions including improving aspects of dietary practices, animal husbandry techniques, and facilitating access to financial facilities and institutions. Training was provided, and a group platform created to allow members to make informed and proactive choices about livelihood activities. | Overall, the analysis found that GRAD participants were better prepared and less vulnerable to the effects of the drought than similar households in the same regions. However, a period of severe drought caused significant asset loss in GRAD households, showing the limitations of some value chain options chosen at the onset of the project. As these activities were not fully successful, households are engaging in non-guided, short-term or potentially environmentally destructive activities such as charcoal making. |
| ACCRA: Africa Climate Change Resilience Alliance | The project objectives were to implement national level advocacy and capacity-building strategies in Ethiopia, Uganda and Mozambique, and develop the evidence base around interventions that contribute to climate-resilient development. Activities included developing a national advocacy strategy for adaptation through civil society engagement; creating capacity-building plans and partnerships based on a needs assessment; disseminating climate change information and encouraging engagement; and building systems for communicating results. | <p>ACCRA has shaped consortium partners' programming, while at the same time supporting the development of relationships of trust between the partners, government, other CSOs and communities in pilot sites in the three countries as well as beyond.</p> <p>ACCRA has played a significant role in co-developing or facilitating the co-development of tools and frameworks for adaptive capacity assessments (LAC framework, CVCA tools and TAMD manuals) and participatory adaptation planning (e.g. DRR guidelines, LAP guidelines, contingency planning) and review tools and frameworks (e.g. national climate change indicators).</p> |

West Africa

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| SUR1M, Niger | SUR1M delivered a package of interventions including support to climate-smart agricultural practices and natural resource management, adaptive livestock production, access to financial services, entrepreneurship and health and nutrition training, early warning and disaster response systems, policy advocacy and women's inclusion. | While those benefiting from the project are more exposed to potential climate shocks, they were found to fare better than those who do not receive support. In particular, project beneficiaries were not only likely to deploy more positive or adaptive coping strategies, but they are less likely to deploy negative ones and, when they do so, for a shorter period. However, these positive results have not yet translated to observable or measurable changes in food security as a higher-order well-being indicator. |
|--------------|--|--|

| | | |
|--|---|--|
| R4 Rural Resilience Initiative Senegal | <p>The R4 Rural Resilience Initiative aimed to respond to the challenges faced by food-insecure communities in the context of climate disasters and other shocks. Main interventions included improving resource management through asset creation (risk reduction); provision of insurance (risk transfer); support to livelihood diversification and microcredit (prudent risk taking); and improved access to savings groups (risk reserves).</p> | <p>The survey found that both participants and non-participants report improved food production and consumption compared to last year. However, program participants reported much larger improvements compared to non-participants. For all three locations, program participants saw larger increases in production of cereals and staple foods. A higher number of program participants also indicate that they cultivate a vegetable garden. Additionally, the increase in the Food Consumption Score (FCS) is more than three times higher for participants compared to non-participants, indicating that participants have made stronger progress in improving their food security. Driven by their increases in food production and food assistance from the program, 61% of participants now have an acceptable FCS, compared to 36% of non-participants. At the same time, program participants experienced a reduction in the Coping Strategy Index (CSI) of minus 7 compared to a minus 2.1 reduction among non-participants.</p> |
| PRSAN: Projet de Résilience, Sécurité Alimentaire et Nutritionnelle [Resilience, Food Security and Nutrition Project] Burkina Faso | <p>The project was aimed at enabling particularly vulnerable households to increase their resilience and improve their food security and nutritional situation. Project activities included supporting households in crop production, market gardening, processing and household businesses, providing awareness-raising on good nutritional practices, carrying out community-level disaster assessments and establishing early warning committees, and distributing livestock and cash transfers.</p> | <p>Project participants scored positively in terms of 33 percent of the indicators [of household resilience] on average. This is four percentage points greater than among the comparison households, a difference that is statistically significantly different from zero. The result in the North is not statistically significant when examined in isolation, but it is consistent in size with the overall result. This suggests that the overall result applies in each of the two regions. Put another way, the average project participant household met the thresholds to score positively in terms of approximately 6.8 of the 21 indicators, against 6.0 for the average comparison household. It appears, then, that the project households have significantly greater resilience, according to this measure, than the comparison households.</p> |
| Zaman Lebidi Burkina Faso | <p>The project worked in four main areas: 1) promoting climate information sharing mechanisms for community use to transmit regular, reliable and comprehensible information on climate change, seasonal forecasting, and early warning; 2) appropriate and sustainable livelihoods interventions to reduce vulnerability to variability, climate extremes, and disasters; 3) strengthening the capacity of local</p> | <p>The ZL project was successful in contributing to incremental changes in the situation of many vulnerable households and communities. Indeed, progress was observed through all priority activities packages within scope of this evaluation. While none of these activities in themselves made a major contribution of significantly improving the situation of individual households and their respective communities, where multiple activities were present, a greater degree of change was observed. The</p> |

| | | |
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| | actors to respond to variability, climate extremes, and disasters; 4) improve understanding of what is working in building resilience to climate extremes and disasters and what constitutes progressive and transformational change, including the factors affecting them. | project also succeeded in involving local government extension workers in assisting communities to implement project activity. |
| African Development Bank's (AfDB) Gazetted Forests Participatory Management Project for REDD+ - Payment for Ecosystems Services (PES) in Burkina Faso | The project instituted Payments for Ecosystem Services (PES) which involve inviting communities near selected forests to participate in forestation campaigns, wherein they plant new trees and are offered a monetary reward, conditional on the survival of those trees. Different payment modalities were trialed to discover the most effective type of cash transfer in this context. | Participants in the PES scheme were shown to experience less food insecurity than those not participating in the scheme. According to the Household Food Insecurity Experience Scale (FIES), participants in the PES scheme were significantly less likely to be food insecure or severely food insecure than non-participants. The impact evaluation shows that well-timed cash transfers can provide timely and needed income when food insecurity is reaching its peak, just prior to the harvest season. Evidence from the impact evaluation indicates that there is a statistically significant link between environmental conservation incentives and improved food security outcomes. There is some early evidence that linear payments appear to outperform threshold payments both in terms of the absolute number and the quality of surviving trees. In the threshold payment model the evaluation did not observe a “bunching” of tree-counts around participants aiming for a just over-the-threshold number of trees, but this alone cannot yield any conclusive results. |
| USAID, Resilience in the Sahel Enhanced (RISE) Midline Evaluation Report, Burkina Faso, Niger | The RISE Initiative's interventions seek to strengthen sustainable economic well-being through support to diversified economic opportunities, intensified production and marketing, access to financial services and market infrastructure. A second set of interventions aim to strengthen institutions and governance through improving natural resources and disaster risk management, strengthening conflict management systems and government and regional capacity and coordination. The final group of interventions work to improve health and nutritional status through increasing access to potable water, training on health and nutrition practices, particularly for mothers and children, supporting family planning, and improving sanitation practices. | The Burkina Faso area saw a small decline in its resilience capacity since baseline, as marked by a drop in the overall index of resilience capacity from 57.0 to 53.1. This decline was driven by a reduction in adaptive capacity, itself rooted in drops in the following individual indicators: linking social capital, livelihood diversity, asset ownership (farming implements and land), and exposure to information. Other important capacities that have seen a decline in Burkina Faso are: holdings of savings, access to firewood on communal lands, and access to hazard insurance. For the Niger area, the finding of no change in the overall index of resilience capacity masks some significant changes, both positive and negative. Five capacities have improved: bonding social capital, aspirations and confidence to adapt, livelihood diversity, asset ownership (consumer durables), and access to markets. Four have declined: access to infrastructure (specifically, paved roads), access to communal natural |

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| | | resources (firewood), exposure to information, and access to hazard insurance. |
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Southern Africa

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| CRLESP: Copperbelt Rural Livelihoods Enhancement Support Project | The CRLESP encouraged poor households to engage in commercial livestock activities through livestock transfers, training on livestock management and basic household livelihood skills, and provision of agricultural extension and veterinary services. Further, the program attempted to mitigate poor health and raise awareness regarding HIV/AIDS, and the importance of improved hygiene and sanitation through various community health trainings. | Results from the impact evaluation find that a one-off transfer of assets and training increased household development resilience; the intervention shifted the conditional transition distribution of households' asset holdings upward, increasing expected asset holdings and decreasing conditional variance. Findings demonstrate that attention to conditional variance in impact on assets provides important insights into program effectiveness and persistence of estimated effects. |
| African Development Bank's Sustainable Land & Water Resources Management Project (SLWRMP) Mozambique | The project focused on land reforestation, livelihood support, and fire and drought control. The main intervention was to provide beneficiary communities with small-scale irrigation kits, each comprising a combination of pumps and sprinklers that deliver water from a river to a plot of land of either 5 or 10 ha. Communities were chosen based on their proximity to a waterway with year-round through flow; geographic vulnerability to droughts; and a lack of irrigation access | Baseline and midline data from households with access to at least one irrigated plot indicate that, over the ~3-year period: households' average production value rose from ~US\$29 to ~US\$369 a 1,188% increase. The share of households using irrigation rose from 10% to 86%. The average area irrigated per household rose from 0.20 ha to 0.45 ha. There was also a significant difference in household production values when comparing kit-access plots that did and did not utilize irrigation: non-irrigating households saw production values increase by ~US\$ 134 whereas irrigating households saw production values increase by ~US\$ 374. |
| CARE, Nampula Adaptation to Climate Change (NACC) Project, Mozambique | NACC's approach consisted of two main pillars: economic empowerment and social empowerment. Economic interventions included introducing conservation agricultural techniques, agricultural extension activities, promotion of farmer groups. support to livestock production and access to financial services. Social interventions worked with marginalized groups, and women, to build confidence, while also focusing on men's awareness and engagement in gender issues. | Project participants are in a better position to recover from shocks than they were before the project and this can partly be attributed to the project. Knowledge and adoption of Conservation Agriculture techniques has increased substantially through project interventions and these effects can also be noted among non-participants. |

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| USAID Zimbabwe Development Food Security Activities | This study did not focus on a particular project, instead looking at 4 areas of Zimbabwe where multiple interventions have been made to address food security. Programs generally included improvements to provision of water and sanitation, food and cash support, agriculture and veterinary services, and access to credit. | Findings from this study document difficulties building resilience capacity during a prolonged drought and unstable macro-economic conditions. Even though shocks were worsening and assets were being depleted, food coping strategies and some non-food coping strategies improved or did not continue to worsen. Important exceptions are withdrawing children from school, which did not increase until the second year of the drought, and selling the last breeding female livestock, which increased in both years. The study included as well-being outcomes: adequate food security, the household dietary diversity score (HDDS), per capita daily expenditures, moderate to severe hunger and recovery (2016 only). All four outcomes deteriorated over the course of the drought. The percentage of households reporting adequate food consumption fell in both years. |
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South and South East Asia

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| Mercy Corps MRED - Nepal | MRED worked through community-level Disaster Management Committees in target communities as a way to adopt practices for hazard preparedness, early warning and contingency planning. By combining market development approaches with best practices of community-based DRR, the program supported development of disaster mitigation plans informed by a participatory disaster risk assessment incorporating specific assessment of livelihood and economic development opportunities. | Households that lived in MRED communities and participated in an integrated and holistic package of interventions were better off than control communities after the 2017 flooding events. These integrated interventions helped to address the ecological, economic and social vulnerabilities (such as erosion-prone riverbanks, limited market access for climate-adaptive crops and harmful gender norms) that usually prevent households and communities from mitigating, coping and recovering from disasters. |
| Mercy Corps - Nepal | This study was not associated with a particular project or program. It instead sought to understand factors enabling people to recover more quickly and respond more resiliently to the 2015 earthquake in Nepal. | The study showed that sustained increases over time in key resilience capacities, including access to and use of formal savings, formal credit, household disaster risk reduction awareness and bonding social capital had positive effects on household short and long-term recovery trajectories. |
| Food for Peace, USAID, SABAL and PAHAL projects, Nepal | Both the SABAL and PAHAL projects worked to improve the resilience of vulnerable populations to shocks and stressors. SABAL's interventions focused on strengthening and diversifying livelihoods, and on | 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 from others were less likely to recover. Households relying on savings and |

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| | improving the health and nutrition of pregnant and lactating women, and children under five. PAHAL also focused on strengthened and diversified livelihoods, but as part of a broader package of interventions designed to mitigate risks associated with chronic food insecurity. | households that reported using remittances to help recover from shock were 6- 7 percent likely to recover. In contrast, households that received formal assistance were 7-8 percent less likely to have recovered at the time of the survey, and households that relied on others were 9 percent less likely to recover. |
| Myanmar Alliance | Myanmar Alliance's main interventions were supporting more resilient cultivation and cropping practices, investing in water supply for domestic and agricultural use, facilitating access to savings and loans, establishing early warning systems, advocating for resilience policy-making, and promoting women's inclusion. | Unable to identify any statistically significant (and therefore reliable) changes in higher-order well-being (e.g. food security) as a result of the project work despite the increases in resilience capacities, which suggests that observing these impact-level changes in two years may be unrealistic. Female-headed households in project areas appear to benefit significantly from project interventions relative to control groups. Project interventions are associated with improved resilience scores for female-headed households. |
| Enhancing Resilience Program, WFP Bangladesh and GOBangla | With a focus on ultra-poor and women-headed households, the project had a package of interventions including participatory vulnerability assessment and community infrastructure planning, construction of infrastructure through public works, disaster preparedness and climate change training, and provision of micro-grants and cash transfers. | At the outcome level, initial results of the evaluation show that beneficiaries were systematically less likely to engage in negative coping strategies than non-beneficiaries. The period during which households adopt these coping strategies also appears to be different – and in particular shortened- for beneficiaries, particularly for those related to food. Likewise, for households who had reported resorting to reducing household expenditures, data showed that beneficiaries were less likely to reduce food- and health-related expenses than non-beneficiaries. Data also showed that non-beneficiaries are more likely to rely on money-lenders than beneficiaries. The dataset, however, was not extensive enough for any rigorous conclusions to be drawn about the more positive adaptive/transformative responses. |
| CARE, Strengthening the Dairy Value Chain (SDVC), Bangladesh | SDVC's package of interventions, aimed at increasing smallholder participation in the dairy market, included improved cow management practices, increased service provider and input supplier linkages, and newly-created marketing channels and group formation. In its earlier phase, the project worked to broker access to quality inputs and animal management practices, and encourage private sector actors include smallholder farmers in their value chains. | Data suggests that the project contributed to building the resilience of the dairy supply chain. The average daily production for the SDVC producers increased quite rapidly at the outset of the learning and then became quite steady at that high level. This points to the producers being able to sustain the new practices beyond their immediate training. |

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| Food for Peace, USAID: SHOUHARDO 3, Nobo Jatra, and SAPLING programs, Bangladesh | The three program evaluated in this report worked to bolster resilience in different ways. SHOUHARDO 3's interventions concentrated on empowerment, governance, and engagement. Nobo Jatra worked to improve links between food production and livelihoods activities through training and capacity building, with the aim of addressing the root causes of food insecurity. SAPLING took a multi-sectoral approach to resilience, with interventions aiming to increase homestead production and consumption of diverse, nutritious foods, and to build capacity to mitigate and adapt to disasters. | The analysis indicates that while Nobo Jatra households have higher absorptive capacity relative to both SHOUHARDO 3 and SAPLING, all program areas have relatively low absorptive capacity (with index scores of 16.0, 20.6, and 14.0, respectively, out of a possible 100). Out of a possible score of 100, households in Nobo Jatra scored significantly higher on the adaptive capacity index (53.2), followed by SHOUHARDO 3 (42.9) and SAPLING (36.0). The average index scores are very low for all three of the program areas (average of 6.8 out of possible 100) and the two elements of transformative capacity are similar across program areas. |
| Mahila Housing Trust (India) Women's Action towards Climate Resilience for Urban Poor in South Asia | The project responded to the most significant climate-related risks facing urban slum communities: heat waves, flooding, water scarcity; and water and vector-borne diseases. Activities focused on improved access to, and use of, data, equipping people with the skills needed to undertake vulnerability and risk assessments, and to plan appropriate responses. The project also worked to build and strengthen networks of woman advocates to lead slum communities, and influence city institutions to move to a more pro-poor approach to adaptation and resilience. | The endline survey reveals large shifts in the vulnerability levels of the sampled households. The proportion of households in the low vulnerability category has increased by 15%, while those in the moderate and high vulnerable groups have decreased by 4% and 11% respectively. The majority of the less vulnerable remained the same, 17% shifted to moderate and 7% into the high vulnerability group. From the baseline moderate and high vulnerability households, 46% and 30% respectively shifted into the low vulnerability group. Only 29% of the baseline high vulnerability group did not improve their status. |

Varied contexts

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| Oxfam CA-MEL: Central America- Melanesia Resilience Building Program | CA-MEL aimed to strengthen disaster risk awareness and capacities for disaster risk reduction and response through a package of interventions: facilitating access to resilient livelihoods and social services; providing a mechanism for funding to bolster local capacity for disaster response, and increasing collaboration between communities, NGOs, government authorities, development partners and other stakeholders. | The project confirmed the validity of Oxfam International's Framework for Resilient Development (OIFRD), strengthened partners' understanding of resilience and how to promote it, and built partners' technical capacity in monitoring, evaluation and learning, despite underestimating the considerable time, funding and human resources required from Oxfam and partners to achieve the last of these. Monitoring and documentation of monitoring results were sometimes affected by staff turnover (Melanesia) and heavy workloads, but in general the monitoring and accountability systems were robust. The commitment to learning was clearly evidenced. Global and bi-national events and exchanges have been helpful in generating information exchange and facilitating learning, both by those sharing their experiences and those listening to them. Implementation of the formal research component was not timely and therefore did not serve to inform the operational program, but the findings it generated reinforce overall learning generated by the project. |
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3. Lessons from effective programs

The lessons of the partners' programs are presented here under three themes that emerge from their documentation:

1. Inclusion into resilience pathways
2. Designing for use and sustainability
3. Strengthening supportive systems

Under each category, we start by summarizing the ways in which the programs treat the topic, before exploring the key lessons.

3.1 Inclusion into resilience pathways

Inclusion is a crucial element of resilience building. The literature on vulnerability¹⁰ demonstrates that shocks and stressors have the greatest impact on those already facing a range of exclusions that increase their exposure and limit their access to assets, capacities, and supportive systems. Without careful approaches, resilience programs can overlook these already vulnerable people, or, at worst, exacerbate their situations. This section looks at how program designs attempted to include people who may not ordinarily be able to access support.

Across the programs reviewed there was no single, shared definition of people who required particular attention to support their inclusion, although most project evaluations recognized that not all people experience the interventions similarly. Women were the most commonly targeted sub-population, although other programs also considered ultra-poor groups, and, to a lesser extent, children, social class, and those with disabilities. Certain program design tools provide an open framework for identifying who requires particular attention in a specific context.¹¹ At the other end of the spectrum are those who intentionally took what could be described as a partially exclusionary approach, targeting people or groups with whom the success of the intervention was more likely.

Community-level vulnerability assessments

There appears to be convergence around the importance of community assessments as a design tool for resilience practice, both as recognition that shocks and stressors can be idiosyncratic and also that people's experience of covariate shocks is not uniform. When done in a participatory manner, the assessments cross over from a design tool to the beginnings of a transformative intervention.¹² In India, the Mahila Housing Trust has capacity building for community-level vulnerability assessments as one of its major project components.

In principle, community-level assessments are neutral activities that can be used to identify who is most in need of support, and, importantly, develop an understanding of their existing capacities:

Active, free, and meaningful participation ensures that vulnerability assessments and the development of appropriate adaptation responses are guided by local priorities, concerns, vulnerabilities and capacities – as

¹⁰ Oxfam 2019

¹¹ See for example, the Oxfam PCVA, Mercy Corp's STRESS, WFP's 3PA.

¹² Kirkby et al 2019

The reviewed evaluations point to the need for a concerted and consistent application of the assessments if they are to be used successfully for inclusion. The BRACED Myanmar Alliance model was credited with ensuring that women and children had greater involvement in decision-making and planning processes, but its coverage included two areas in which the hardest-to-reach groups (and most vulnerable) received the lowest number of interventions. Despite using a community approach, those with the most assets at the baseline saw the greatest increases in their resilience at the end of the project. There are examples in other projects of mis-targeting when community consultation is limited to conversations and wealth ranking with prominent local actors.^{14,15,16} The African Development Bank's Sustainable Land & Water Resources Management Project (SLWRMP) in Mozambique switched to score-based targeting with a proxy means as a way to more effectively target relevant smallholders.

Certain evaluations find that focusing on shocks and household wealth ranking does not provide the level of depth required to understand particular conditions of vulnerability. Despite using community discussions as a successful model of engagement across three projects, Oxfam's Central America-Melanesia (CA-MEL) Resilience Building Program evaluation concluded that "more in-depth analysis of the vulnerability of specific groups (by gender, disability, location, livelihood, other demographic) would enhance them further and underpin a differentiated response and resilience plan." In response to difficulties in improving reliance on negative coping strategies, female confidence levels, and dietary diversity in lower strata of Nepal's class system, Mercy Corps found that despite a concerted household dialogue intervention,¹⁷ "considering intersectionality (gender and caste, in this case) requires an even more intentional approach to reach the most vulnerable among an already-marginalized group."¹⁸

Deeper application of a vulnerability lens implies the need for sufficient time and resources being committed to the assessments, and program staff may need to be trained in new technical skills if they are to apply them.¹⁹ Finally but critically, they seem sensible only if the project is able to follow up with interventions that are able to address social inequities.

Confronting social norms

A number of programs associate women's empowerment with their presence in decision-making processes, such as disaster planning, community processes, and household decision-making. The available evidence suggests that this translates into meaningful and sustainable outcomes for women, but is largely based on small-scale qualitative reporting within program time frames.

Over three projects, Mercy Corps' Building Resilience through the Integration of Gender and Empowerment (BRIGE) program encourages intra-household dialogue on the role of women. Its study found that the dialogue sessions increased women's confidence and men's trust in their abilities, which afforded women greater decision-making power, increases in mobility, and a decreased burden from household duties. Although the impacts appear positive, household level targeting requires door-to-door support, which raises questions over efficiency.

¹³ Kirkby et al 2019

¹⁴ Oxfam Citizen Participation in Adaptation to Climate Change (CPACC);

¹⁵ WFP 2018 Somalia

¹⁶ African Development Bank's Sustainable Land & Water Resources Management Project (SLWRMP)

¹⁷ MRED

¹⁸ Mercy Corps 'Priming Resilience with Intra-Household Change: Addressing Gender Norms' April 2018.

¹⁹ Oxfam CA-MEL.

Across the 13 BRACED projects, it was those that had targeted marginalized groups and confronted social norms that saw the greatest results in supporting inclusion, but the evaluation recognizes that these are long-term processes. Of the programs reviewed, only the Oxfam examples appear to contain the rights, justice, and empowerment approaches, although these interventions are more abundant outside of the resilience sector. As these approaches involve changing social and political norms there is a careful balance (at least in the short term) for organizations that follow humanitarian principles relating to objectivity.^{20,21}

Working with women's groups

Women's groups feature as a common forum for ensuring that a range of benefits — asset transfer,²² training,²³ and savings and credit access²⁴ — reach at least one sub-category of potential exclusion. From the results reported, the women groups appear to offer quicker wins than the approaches for promoting women's engagement in more public fora, a number of which report more gradual²⁵ or no progress.²⁶ However, a number of evaluations^{27,28} also indicate that the benefits of women's groups (including increased agency, knowledge, and decision-making powers) can have positive spill-out effects for their members' public and household standing. Oxfam's CA-MEL project suggests that a twin track approach helps. By working with men from the same households on gender justice and empowerment, they were able to gradually overcome male reluctance to women taking on new roles.

Although their vulnerability compared to men may be assumed, there is little indication that women involved in the groups represent the most vulnerable people within wider society. Based on existing capacities alone, there is a distinction to be made between members of women's groups set up by the program, such as in *Projet de Résilience, Sécurité Alimentaire et Nutritionnelle* (PRSAN), or already existing and targeted by the project, such as in the Copperbelt Rural Livelihoods Enhancement Support Project, where women's groups already had the ability to apply (in a competitive process) for the livestock asset transfer. The evaluation of the Mahila Housing Trust Project, which takes a women-led approach in urban areas of India, shows that the level of existing capacities has implications for wider resilience building. It finds “strong and significant evidence” that improvements in vulnerability levels are larger “in established cities [which] have pre-existing networks of women leaders with strong social capital while emergent cities must build these networks during the project.”

Activities that benefit women

A number of evaluations identify particular activities from larger intervention packages that bring benefit to women. The most commonly identified²⁹ were saving and credit groups,³⁰ often because they were absent or ineffective for women before the intervention. Others include agricultural techniques, especially those linked to the household, such as micro-gardening,^{31,32} rainwater harvesting, and composting.³³ Agricultural processing and business

²⁰ Gender Justice in Resilient Development: Sharing programme learning from Africa, South Asia and Central America

²¹ WFP 2019

²² CRLESP

²³ R4 Ethiopia and Senegal, CRLESP, PRSAN

²⁴ PRSAN, R4 Ethiopia and Senegal, Seacology

²⁵ BRACED; CA-MEL

²⁶ R4 Ethiopia; MRED

²⁷ PRSAN

²⁸ CA-MEL

²⁹ R4 Senegal.

³⁰ TBR-Nepal.

³¹ R4 Ethiopia, PRSAN.

³² Practical Action.

³³ Practical Action.

skills also featured. Evaluations refer to increased financial benefit from women-specific activities, but do not explore whether male capture of the profits and/or production occurs.

Four programs³⁴ go beyond these general development benefits to focus on women-centered activities in relation to shocks and stresses. The examples reviewed leverage the benefits of women-focused activities toward household or community preparedness. For example, in an Oxfam project in El Salvador, women enterprise groups used their additional finance to support community disaster plans, while its project in Vanuatu found:

Women reported that their new knowledge, about how to prepare and preserve food before emergencies and how to prepare nutritious food with plant leaves and other non-traditional food items during a crisis, will also allow them and their children to cope better and recover quickly after a cyclone.

Although it is not assessed in the evaluations, overburdening women³⁵ in a shock context seemingly poses a far greater risk than in general development initiatives. For example, women in the Lutheran World Relief project expressed that the project had increased their workload, although the extent and the implications are not fully explored. In Nepal, Niger, and Indonesia, Mercy Corps' BRIGE program has reduced the burden of chores via household discussions with men (although in the examples given the saved time appears to be replaced with other household or community tasks). There were no examples in programs reviewed of activities that directly support women in *their* experience of shock, although the Mercy Corps' Managing Risk through Economic Development (MRED) program does promote intra-household assessments for the disaster preparedness of lactating mothers and people with disabilities.

Innovations and trickle-down mechanisms

In contrast to the programs that attempt to expand inclusion, there are those that intentionally work with, as one describes, 'vulnerable but viable' groups.³⁶ This is usually the case where an innovation is being tested and some level of existing capacity is required in order to prove the model.³⁷ For instance, testing the viability of smallholder drought insurance requires farmers to have sufficient agricultural assets and education levels, especially if farmers are encouraged to buy insurance in the future. Similar conditions apply to localizing the predictive models of climate information.

Seacology's provision of microloans in Sri Lanka is tied to mangrove protection via participation in community-based organizations. Although intended for impoverished women, the initial steps for proving the model appear dependent on women who have some level of capacity beforehand; over 80% of the first recipients had an occupation (and used the loan on activities relating this) before the loan, whereas only 41% of the potential second tranche of recipients had any occupation. Pre-loan occupations were also more profitable for those in first tranche, who received an average³⁸ monthly profit of \$122, compared to \$71 in the potential second tranche. This seems a sensible way of testing whether loans and training can spur mangrove protection, especially as far greater numbers of the first tranche are fisherwomen compared to the second. However, if the intervention is to meet the objective of supporting impoverished women as well as protecting mangroves then further readiness activities may be required.

³⁴ Three under Mercy Corps' BRIGE and CA-MEL.

³⁶ Oxfam CPACC, Zambia

³⁶ Oxfam CPACC, Zambia

³⁷ Although, as it has not been possible to compare beneficiary groups across project contexts, it may be in more common use.

³⁸ Based on those who had an occupation prior the loan.

Longer-term strategies for trickle-down or expansion of the innovations are not clear from the program designs. Although there are examples of communities self-sharing the benefits,^{39,40} there is no guarantee that this extends to poorer or more marginalized groups. Certain evaluations recommend that programs do more to ensure expansion of the new assets or capacities: “The program [R4] should invest more in improving the understanding of index insurance among farmers. Current training should be reviewed to ensure that it is not communicating information in a misleading way. The training should either reach a larger number of farmers in each village rather than focusing on the same small group, who are considered the trainers, each year, or the program should ensure that the trainer share an incentive to disseminate knowledge, and that they are doing so.”

Making the most of voluntary inclusion

It was found in at least two evaluations that people who were more engaged in the projects had greater levels of resilience. For example, in Niger: Being an active RISE program community liaison for activities related to agriculture and livestock development is also associated with resilient households.

Although it is possible that these people received more interventions (see Package Effect in the next section), there may also be further lessons to learn about the linkages between the motivation to engage in projects and the ways in which people acquire and use assets and capacities, or respond to shocks and stressors. Those who sign up for the voluntary components of projects or take on implementation roles may act as positive deviants for encouraging others to emulate.

3.2 Designing for use and sustainability

Nearly all of the resilience programs reviewed aim to contribute to the asset and capacity base owned or accessed by people at risk of shocks. Productive assets — most commonly financial, technological, physical, and natural — were supported to expand the variety of resources available, increasing the likelihood that some may escape the impact of a shock/stress,⁴¹ or sufficiently increase their quality and/or quantity such that an impact does not fully eradicate their utility. Protective assets — commonly infrastructure, technology, and natural resources — were supported to remove or significantly decrease exposure to shocks and stressors. In certain programs, such as those employing rainwater harvesting or mangrove restoration, productive and protective assets overlap. Most projects involved included some form of capacity building within and across the following categories: (1) directly linked to the use of the assets; (2) complementary to the assets (i.e. business skills); (3) risk (often climate) awareness; and (4) more social skills, such as gender awareness or peacebuilding. Information assets are considered key for reducing the uncertainty of future events and, when linked to skills and knowledge, can unlock capacities and increase access to support services (see next section).

The evaluations suggest that the majority of asset and capacity-building activities are successful in achieving their output objectives, at the least, and appear to be popular among the people involved in them. However, assets and capacities can be abandoned or deteriorate overtime and are susceptible to shocks.⁴² This section looks at how programs have tried to ensure asset use and increase their sustainability.

Community-led design for relevance and ownership

³⁹ Practical Action Bangladesh

⁴⁰ Itad 2018

⁴¹ The Seacology Project in Sri Lanka refers to this as redundancy.

⁴² WFP 2014

The literature suggests that programs should not assume that top-down resilience packages hold immediate apparent relevance to a particular community, and may even be resisted.⁴³

Many of the program designs appear particularly aware of the need to be relevant to shock context and involve participatory hazard identification at the community level.⁴⁴ In some instances this is the last stage in a scaling down of vulnerability assessments from the national or transboundary level.⁴⁵ The World Food Programme, for example, uses its Three Pronged Approach to connect actors around three levels of analysis: the national level food security context; the Seasonal Livelihoods Programming, at which government, development actors and community representatives plan the layering and linking of interventions within a calendar at the subnational level; and the Community-Based Participatory Planning, where local groups contribute to the design of activities to address shocks. A number go further to either co-design activities with local communities or fund locally developed project proposals.⁴⁶ There is widespread agreement that this can create a sense of ownership⁴⁷ that may be beneficial for the long-term sustainability of interventions, and some reports also point to less tangible outcomes, such as increased empowerment and trust from the involvement in decision-making.⁴⁸ If done within local planning structures, as the Anukulan program has in Nepal,⁴⁹ this can be a transformative mechanism for formal integration.⁵⁰

Cost-benefit analysis on community-based approaches demonstrates positive results. Assessing the cost of CARE's bottom-up approaches to adaptation in Kenya's arid and semi-arid lands, the New Economics Foundation found that:

Under the most realistic scenarios, investing \$1 in adaptation generates between \$1.45 and \$3.03 of wealth accruing to the communities. Even when using a high discount rate the costs of interventions were 2.6 times lower on average than the costs of not intervening to address climate change and extreme weather events. This means that if action were not taken the per capita income of communities would fall below \$1 a day over the next decade. Taking action by investing in community-based adaptation can result in a per capita income of about \$2.1 a day, on average.

Using cost modeling of already-experienced shocks in the cyclone/flood-affected areas of Myanmar, similar analysis registered a cost-benefit ratio of up to \$1.11 for community selected interventions, largely because people tend to prioritize life-saving measures and livelihood support.⁵¹ Community participation has also been identified as a mechanism contributing to quantitatively higher resilience outcomes.⁵²

However, in multi-stressor contexts, challenges have arisen concerning the prioritization of risks and the delicate balance between livelihood promotion, food security, and natural resource conservation.⁵³ A community-designed project in Niger had to apply for crisis modifier funds after a flash rainfall:

⁴³ Kirkby et al 2019

⁴⁴ Enhancing Resilience to Natural Disasters and the Effects of Climate Change Programme, Bangladesh; Myanmar Alliance, Oxfam's Participatory Capacity and Vulnerability Analysis

⁴⁵ Lutheran World Relief.

⁴⁶ BRACED. Mercy Corps PAHAL. DGM.

⁴⁷ Mercy Corps TRANSFORM.

⁴⁸ Itad 2018

⁴⁹ Anukulan

⁵⁰ Kirkby et al 2019

⁵¹ Cost Benefit Analysis of Community Planned Interventions in Myanmar (2016) Yaron, G. Itad

⁵² BRACED Impact Evaluation.

⁵³ Itad 2018

Although flooding poses a threat to some livelihood activities, and this was mentioned in resilience assessments in Douentza and Mopti, farming, pastoralism and fishing also faced a range of threats. Investment decisions were made by local [Community-level Adaptation Planning Committees], which selected proposals that aimed to increase the productivity of pastoral and agricultural production systems in an effort to enhance food security.⁵⁴

CARE and NEF's findings in Kenya caution against promoting livelihood diversification without proper consideration of the extent to which income options for one group could be achieved without risking conflict over scarce land, water and other resources. The examples indicate that resilience programs using community-led approaches should carefully manage expectations in line with future climate uncertainty.

Leveraging core interests

A number of programs have found the combination of livelihood/business assets and capacities not only to increase absorptive or adaptive capacities⁵⁵ but to encourage the uptake of other resilience relevant measures. A key lesson from an evaluation across three Oxfam resilience projects is that interventions should consider short, medium, and long-term benefits to a community in order to “increase community interest, input and ownership.” The approach also appears to be an efficiency measure as “risk reduction strategies that require people to change their behavior without seeing immediate personal benefits need regular prompts.”

The mechanism is most direct in programs that provide remunerative financial transfer for natural resource management and/or the building of protective or productive public assets.⁵⁶ There is considerable evidence that the financial benefit can address immediate food security needs, and programs have evolved to theorize a pathway to improved livelihood skills.⁵⁷ Post-hoc evaluations across six countries show that the realization of medium to longer-term benefits depends on the time spent on developing quality assets and capacities, and on the ability of at-risk communities to maintain the asset despite of a shock.⁵⁸ Although piloted with comparatively better-off farmers, the R4 program design presents a model in which conditional transfers may eventually transition to a system in which farmers pay into a package of resilience support.

Where assets or capacities can be targeted to existing, if struggling, livelihoods there seems greater chance of uptake, use, and sustainability. Figure 1 demonstrates how increased profitability in Practical Action's AWRCAB project was used for expanding and sustaining the techniques. Although not a direct contrast, elsewhere the lack of a quickly realized increase in yield size is used to explain low adoption rates of conservation farming, despite the practice being found more reliable for variable rains.⁵⁹

Figure 1: Reasons for commitment to share and sustain agricultural practices (Source: Project Evaluation Report)

⁵⁴ <https://www.odhpn.org/sites/odhpn.org.uk/files/resource-documents/11861.pdf>

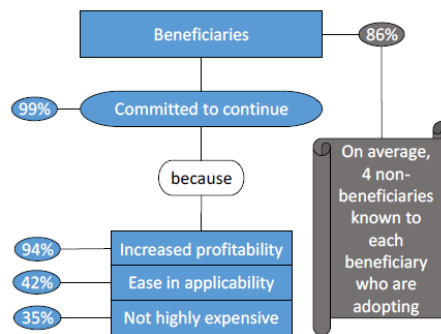
⁵⁵ During the El Niño-related drought in Ethiopia Mercy Corps' research found those agro-pastoralists with other business interests were considered most resilient by the wider community members. Although not immune to a customer base depleted by drought, interviews confirmed these people had been able to maintain some income from assets that escaped the drought.

⁵⁶ See for example: African Development Bank's (AfDB) Gazetted Forests Participatory Management Project for REDD+; Payment for Ecosystems Services (PES) in Burkina Faso.

⁵⁷ Enhancing Resilience to Natural Disasters and the Effects of Climate Change Programme, Bangladesh

⁵⁸ WFP 2014 .

⁵⁹ Michler et al 2019.



An advantage of supporting existing livelihood assets and capacities is that there is likely to be a market (physical and demand) for the products, which was the case for the AWRCAB project but not for all others. A potential downside is that it may limit diversification: in Sri Lanka, approximately 80% of microloan recipients used the funding on existing businesses, and the remaining recipients started a business where previously they had none. However, it is possible that the diversification took place within the existing businesses categories.

Building financial assets

Interventions aimed at improving people's ability to save money are common in the programs reviewed, and in nearly all cases are both popular with participants and effective in their output objectives. Beyond the particularities of the saving/disbursement modalities, the interventions appear to differ based on the *level* at which they encourage savings (usually household or community) and the *extent* to which the schemes are directly tied to shock response planning.⁶⁰ As an example of the latter, via a saving and lending model the Lutheran World Relief Transboundary project in Nepal and India has increased access to community emergency funds to ~50% of households in the project areas from almost zero at the baseline. Below we describe the two-fold effects of savings.

1. Savings as a key contributor to resilience capacities and shock response

A number of evaluations and studies identify savings as *the* major contributor to resilience, especially for absorptive and adaptive capacities.⁶¹ This is identified both via quantitative measurement⁶² and qualitative discussions on actions taken during a shock or stressor⁶³ and perceptions of personal resilience.⁶⁴ Under USAID's RISE program in Niger, for example, women considered their engagement in savings and credit groups to be the key component of their resilience.

A few evaluations describe how savings have been used in a shock context. Under CARE's GRAD program in Ethiopia project participants were able draw on savings to avoid going into debt with micro-finance institutions during the 2015 drought. Non-participants had depleted their savings before the drought struck and emerged with more debt, despite being better off at the start of the project.

In at least two projects, savings are considered as a buffer until formal support arrives. USAID's research into the effects of multi-year drought in Zimbabwe suggests that in prolonged shocks savings could be considered as part of a short-term buffer until the government and NGO response are able to switch from livelihood assistance to an emergency response:

⁶¹ See for instance: USAID Bangladesh Resilience Research Report- Final (2017); R4 Ethiopia; GRAD (2016); Mercy Corps' Gorkha Earthquake research (2018); USAID Food For Peace projects, Nepal (PAHAL and SABAL)

⁶² See for example: USAID Bangladesh Resilience Research Report- Final (2017)

⁶³ CARE GRAD

⁶⁴ See for example: MAR Ethiopia (2018);

Households were able to maintain some assets through one year of drought but by the second year, all assets were lower than – or at – pre-drought levels. CSI increased (worsened) in year one of the drought but improved in year two. This is likely due to increased food, cash, and voucher programs during the drought. Analysis of negative coping strategies shows that households deplete savings and household assets first, then move to more negative strategies that can have longer-term consequences (e.g., removing children from school).

The protective buffer may be shorter in the Zimbabwean context because of purchase price volatility and because currency depreciation may have undermined the value of the savings. It would be interesting to compare whether households can resist negative coping strategies in context where the currency remains stable.

Savings schemes were also found to build up sharable assets to bolster coping strategies that rely on mutual support. Under the RISE program, communities in both Niger and Burkina Faso considered mutual support and sharing as their key strategy during drought; although the saving schemes were set up only to offset the lack of cash at the household level, communities reported modifying them so that people facing idiosyncratic shocks could access funding as needed. People also reported accessing savings so that they could be shared with those in need. Sharing cash was seen as a less risky coping strategy (especially during extended exposure to shocks) than loaning a livestock offspring, another coping strategy in the two countries.

2. Savings as an unlocking mechanism for other resilience capacities

Beyond their financial value, savings schemes were found to connect people to other capacities, including risk planning, financial literacy,⁶⁵ credit,⁶⁶ livelihood diversification^{67,68} and increased asset accumulation,⁶⁹ and social capital (especially in the form of village or community models).^{70, 71} The evaluation of the program R4 Ethiopia points to a number of these:

All participants credit the program with having developed a ‘saving culture’ among the farmers that was not present before. They say that paying for insurance premiums as well as requiring saving deposits in order to obtain loans contributes to this culture. The farmers now understand how they can use all three financial instruments to invest in off-farm businesses and thereby diversify their sources of income, as well as to increase their investments in crop production.

Savings are also linked to gender empowerment by the increased knowledge and decision-making powers that female participants can acquire.⁷² However, as the evaluation of the MRED project in Nepal noted, women’s control over the financial asset does not necessarily increase as they accumulate savings, and can require social norm shifts to encourage males to share responsibility.

The programs reviewed offer limited reflection on the design of savings schemes, although in the example where they were unsuccessful in encouraging the accumulation of financial

⁶⁵ MRED, Nepal

⁶⁶ R4 Senegal, CARE GRAD

⁶⁷ MAR Ethiopia

⁶⁸ CARE GRAD

⁶⁹ Napula Adaptation to Climate Change

⁷⁰ Oxfam CA-MEL

⁷¹ CARE GRAD

⁷² R4 Senegal

assets it was found that people abandoned the training because they were aware that other schemes provide an initial injection of capital.⁷³ Noting the successful contribution mature Village Economic and Social Associations (VESAs) made to financial assets and social capital in Ethiopia, the evaluation of the GRAD program recommends younger VESAs be supported more intently, with book-keeping, leadership and loan repayment support required for all VESAs after the drought.

Packaging interventions

Most program designs reviewed attribute combinations of their interventions toward resilience outcomes. There appears to be limited information, however, to help programs target the most effective and efficient combinations to a shock or vulnerability context. As an example, the Pastoralist Areas Resilience Improvement through Market Expansion (PRIME) project evaluation in Ethiopia was able to ascertain that it had a positive impact but fell short of “demonstrating the necessity of any one activity or set of activities.” There are a few instances of sequencing and linking project interventions to create an intended effect (especially in the food/cash for assets program, which are timed to the lean seasons and work schedules). However, where evaluations reflect on the delivery it appears that logistical considerations, often within compressed time frames, play a large part in determining how interventions are provided.

The evaluations that attempt to specify and quantify the contributions of interventions to an overall resilience effect agree only that it requires multiple interventions cutting across assets, capacities, and the supporting environment (see next section). The endline assessment of the BRACED Myanmar Alliance project, for example, found: “incremental changes until a tipping point is reached at four interventions in a package that provides more significant gains;” and qualitative work in two regions found communities had a strong preference for infrastructure assets, followed by livelihood skills and accurate weather information. Similar results were found under the Zaman Lebidi project in Burkina Faso.

A lesson from Oxfam projects in Latin America and Melanesia is that resilience “requires that we not only take protective actions against shocks and stresses, but that we also make continual adjustments in a changing environment, as well as transform the structures that drive risk, vulnerability and inequality.”

In contrast to this is the impact evaluation of Heifer International project in Zambia, which tested whether a one-off transfer of livestock asset and accompanied training could create a “big push” strong enough to lift people out of poverty and prevent roll back in the event of a shock. The evaluation found that the transfer of a mature animal did increase resilience (using an asset-focused measure) and predicted against roll-back into poverty over time and in the presence of shock. Those whom received a younger animal and a delayed transfer were found to be resilient at the midline, but had a low probability of remaining non-poor beyond this. Although tested in a sedentary population of groups that were able to meet viability requirements, the findings are interesting as they demonstrate how households can build off a single relevant and substantial intervention to create secondary livelihood options that are likely to be sustainable.

The use of assets and capacities in relation to shock and stressors

A number of evaluations point to increasing use of resilience capacities, moving beyond the activity/output level, to demonstrable ability to deal with shocks. After 2-3 years of implementation BRACED’s annual report noted: “Continued progress in enhancements in adaptive capacity [...] reported for all projects and this has been built through training in and incorporation of climate-smart technologies and innovations to manage natural resources and farm systems (9 projects); the diversification of income streams (5 projects) and the integration of climate concerns into local planning (5 projects). We are seeing evidence of

⁷³ Oxfam CPACC

‘action taken’, ‘uptake’ and ‘use’ rather than simply numbers of people receiving training or dissemination of information.”⁷⁴ Others point to intervention households deploying fewer or less severe negative coping strategies.⁷⁵

However, several examples demonstrate that unless a protective asset significantly reduces exposure to a shock, there are currently limitations to the role that community-level assets and capacities can play to support a response to a serious single shock or combination of stressors. After two failed rainy seasons in Ethiopia, participants in CARE’s GRAD program (especially those who had been with the program for two to three years) were better able to maintain income and overall well-being compared to those not in the program, but still experienced severe asset loss necessitating the use of “non-guided, short-term or potentially environmentally destructive activities such as charcoal making.”

An evaluation of an Oxfam program in Nepal demonstrates the set-back that flooding can make to resilience gains, with many intervention households struggling to acquire financial assets. In the same country, Mercy Corps’ innovative nexus model —incorporating high-value crops that provide flood defense and ecological benefits into resilience strategies — managed to reduce the impact of flooding for intervention households in 2017.

Across the programs reviewed it seems there is a growing consensus that designs should support preparedness for multiple, rather than single shocks/stressors. This is often accompanied with a shift to understanding the wider experience of people at risk. The FarmerLink project, for instance, brings together a consortium of government, private sector buyers, financial services providers, and technology actors that offer:

Collaborative thinking into concrete action points that [...] address the complex challenges that farmers face. Since everyday problems that farmers face are not compartmentalized, integrated and holistic solutions are needed.

The importance of multi-shock resilience was highlighted in the research from earthquake recovery in Nepal, which shows that specific shocks can open up fragility and exposure to a series of follow-on threats.⁷⁶ Drawing the lessons from three resilience projects, Oxfam proposes that multi-hazard preparedness can be encouraged even in the absence of a shock, by including “interventions that build community resilience to small, domestic shocks [that] help communities trial new ways of working with relatively small risk.”

3.3 Strengthening supportive systems

Resilience is widely understood as being influenced by conditions or actions occurring within and across information, social, governance, ecological, and market systems.⁷⁷ The actions of multiple, connected actors can have positive or negative effects (and feedback) depending on the rules and motivations governing their behavior. Many of the programs reviewed have components targeting systems that surround people at risk of shocks and stressors.⁷⁸ Most target improvements to existing systems, commonly the governance system for disaster planning, but also capacity and technological support to meteorological information processes. Others encourage financial and other actors to provide services for those at risk.⁷⁹

⁷⁴ BRACED project portfolio (countries across Africa and Asia).

⁷⁵ Enhancing Resilience to Natural Disasters and the Effects of Climate Change Programme, Bangladesh.

⁷⁶ ‘What matters for households’ recovery trajectories following the Gorkha earthquake? A two-year panel study.’ (2018) Mercy Corps

⁷⁷ www.fsincop.net/fileadmin/user_upload/fsin/docs/resources/FSIN_29jan_WEB_medium%20res.pdf

⁷⁸ Although there were no examples of ecological system approaches submitted, a number of GRP programs, such as Seacology, OneArchitecture, and the Potsdam University have achieved success by combining nature-based solutions. These are explored in the GRP’s Water Window Synthesis.

⁷⁹ See for example, the PRIME project in Ethiopia:

https://www.mercycorps.org/sites/default/files/Mercy%20Corps_PRIMEandDroughtResilience_2017_FullReport.pdf

Some initiatives, such as the Wayfinder tool (see Box 2),⁸⁰ take a systems approach to design: creating a process in which members in a network form a coalition, collectively agree on an ‘ethical compass’ for the group, and then begin a set of analytical and learning processes examining how the system works and how it could contribute to positive change in the context. There is also a sense in which consortium-led projects that offer packages of interventions act as mini-systems that may be replicated, in whole or part, by more permanent actors. This is most obvious in the R4’s interlinked risk model. Its evaluation in Ethiopia found it had been “extremely successful in creating awareness and demand for weather index insurance among smallholder farmers in the region,” and attempts are being made in a number of R4 countries to promote private sector and government update of the insurance model. Another example is Anukulan in Nepal, which has 17 partners providing different services across 4 areas: Climate-Smart Agriculture; Water Resource Development; Local Action Plans of Adaptation; and Nutrition.

Box 2: The Wayfinder process consists of five iterative phases:

Wayfinder is a process guide for resilience assessment, planning and action in social-ecological systems. It represents the frontier in resilience and sustainability science, synthesized into a clear, coherent and hands-on approach.

Phase 1 – Building a coalition for change. In the first phase of Wayfinder, you draw together a team of committed and capable people who will carry the process forward, who will design and tailor it so that it suits the specific context, and who can implement the plans that come out of the process.



Phase 2 – Creating a shared understanding of system identity. In the second phase, the coalition reaches out to a wider group of stakeholders to explore stakeholder’s aspirations for the system, and to describe the specific sustainability challenges at hand. An initial conceptual model of how the social-ecological system is structured and organized is created and a draft Change Narrative that describes your current understanding of how change may happen in your system is formulated. This frames the process, and gives it direction.

Phase 3 – Exploring system dynamics. In the third phase you analyze how components of the system interact, across scales, to produce the social-ecological dilemmas that people experience. You explore how it has changed over time, and what future development trajectories for the system might look like. This is the technical core of the process, where the goal is to understand as much as possible about the dynamics that determine how the system works.

Phase 4 – Developing innovative strategies for change. In the fourth phase, you use your understanding of system dynamics to design strategies for adaptive or transformative change. This is done by a simultaneous focus on leverage points for systemic change, on agency to influence those points, and on the overall opportunity context that enables or

⁸⁰ <https://wayfinder.earth/>

hinders change in the system at a given point in time. At the end of this phase your Change Narrative is plausible and concrete to be translated into an Action Plan.

Phase 5 – Learning your way forward. In the last phase of Wayfinder, the Action Plan is implemented in reality through a learning-by-doing approach. This requires building a culture of learning, setting up pilot experiments that allow you to test your strategies for change, and working to embed your strategies in institutional structures to allow for wider impact. Your lessons learnt here will allow you to gradually refine your systems understanding and your strategies for change. Depending on what you learn, you start a new iteration of the Wayfinder process, by focusing in on one of the previous phases.

Illustration source: E.Wikander/Azote

The examples also provide lessons on the importance of market and social relationships, but these seem currently underutilized in programs reviewed. For larger-scale shocks, there are lessons on the role that humanitarian actors play as part of a preventative and responsive system. Finally, although challenging to conceptualize and measure connections between multiple scales and levels,⁸¹ the programs that attempt to incorporate systems thinking into their design approach appear to be planning in advance for the conditions, actors and geographies required for scale and sustainability.

Information systems

Seven projects (operating in nine countries) had seen positive results from improving and decentralizing information to the local level. The provision of timely and accurate information on shocks and stressors before they happen is intended to catalyze a range of protective and adaptive measures from those at risk. More than an improved early warning system, however, the examples show how information on future conditions can be combined with broader information on agricultural and financial advice to offer a fuller package of support.

The FarmerLink program in the Philippines supported coconut farmers with a range of media (Short Message Service (SMS), voice messages, and videos), in order to convey information on general weather conditions and specific threats along with actions that could be taken at the field level. Its final evaluation found that SMS was effective in encouraging actions that required urgency: 65% of recipient farmers took action (such as pruning leaves and notifying the relevant authority) on receiving alerts that a pest outbreak was likely. Within a far larger sample (3,291 farmers), 57% of recipients took action on receiving weather alerts, such as “too dry” conditions.

The overall results show that the project had supported a relevant intervention but that usage drops off. In the evaluation, 85% of farmers confirmed that the alerts reflected the reality around them, and 86% indicated that they learned how they could take appropriate actions to mitigate the risk of drought and pests; however, across the two groups only 58% reported putting into practice the recommended actions promoted by the alert. The project lessons indicate a limitation in the type and amount of information the SMS is able to convey, and the importance of integrating with existing services:

If the goal is to drive adoption for [...] good agricultural practices, SMS should be combined with one-to-one visits of field agents. Not only do farmers prefer this (data shows that 94% of farmers are moderately to extremely satisfied with the agent's visits), but data here also shows higher increases in adoption of practices when the SMS is combined with coaching sessions using the mobile tools during visits.

⁸¹ Itad (2015)

The Zaman Lebidi project implemented by Christian Aid in Burkina Faso worked with the national provider of meteorological information services which, prior to the project, were deemed “unreliable, inaccessible and/or too technical” by users. The support involved the development of a Climate Information Communication Strategy and the cascading of information down to the local level using similar technology to the FarmerLink project. However, the evaluation particularly commended the project’s integration of ‘user-friendly’ information into the work of local government agriculture and livestock extension workers, local radio (with whom a lexicon of climate and weather terms was developed) and even shopkeepers and truck drivers, who were trained to respond in the event of an emergency. The evaluation details various instances of actions taken based on the improved meteorological information, and was particularly impressed with the clear demand, which may have existed before but was now being met by the project.

Practical Action’s Agriculture and Water Resilience in Coastal Areas of Bangladesh project appears to have struck a balance between the use of bottom-up and top-down project design. Its technological support to six pre-existing livelihood strategies has increased productivity and reduced the exposure of agricultural techniques to the natural resource base and vice versa. Higher up, the project supported the meteorological services to respond to agricultural livelihoods (agro-met service) and increased their use significantly.⁸²

The results of these three projects are tested within their respective project’s time frame, so it is difficult to say how sustainable the information systems are, especially where they require new or expensive technology.

Their results are in accordance with the findings from five other projects⁸³ using climate information services under DFID’s BRACED program. The BRACED evaluation notes information systems have prevented agricultural losses, but points out that:

It takes time to build trust in scientific forecasting information and most projects in Year 3 are still working toward building this trust by facilitating discussions with users to assess its level of accuracy, reconcile its use with traditional approaches, and communicate that the information provided is uncertain.

The wider literature suggests that integrating responses to climate change in local designs can be problematic because the threat is currently largely defined by scientific calculations and not sufficiently linked to community knowledge systems.⁸⁴ As demonstrated by the challenges of livelihoods diversification in arid areas mentioned above, the ability to support a range of people dependent on an ecosystem may be an important consideration for the scaling of climate information initiatives.

Social systems

The importance of social networks is recognized in a number of projects. Research on recovery from the Gorkha earthquake in Nepal shows that existing and new social connections can be a more powerful positive influence on the ability to respond to a shock than official support.⁸⁵ In the evaluations reviewed, improved social relations are most commonly associated with savings group schemes, although Mercy Corps’ MRED program in Nepal found that engagement in community DRR activities was a far stronger determinant of social bonding. The example below from the R4 project in Senegal demonstrates how projects can conceptualize the influence of their interventions on social relations:

⁸² AWRCAB Project evaluation.

⁸³ BRACED – Nepal (Anukulan), Chad and Sudan (BRICS), Ethiopia (CIARE), Myanmar Alliance, Ethiopia (MAR) and 5 Sahel countries (Livestock Mobility).

⁸⁴ Ibid.

⁸⁵ ‘What matters for households’ recovery trajectories following the Gorkha earthquake? A two-year panel study.’ (2018) Mercy Corps

The R4 Initiative engendered trust among participants by creating new social groups or supporting existing structures within communities, which served as the basis for improved social interactions and conflict resolution. For example, by creating savings groups within the communities that helped members save together and support each other in times of hardship, the program's [Saving For Change] methodology promoted mutual understanding and trust.

The training provided by the program's facilitators on managing effective group dynamics and organizational effectiveness strengthened the capacity of communities to manage their differences and undertake joint approaches to solving problems.

The program has contributed to the improvement of social support systems in the participating communities by reinforcing the bonds of solidarity among the participants, which has led to an increase in the proportion of households that, during difficult periods, would turn to their neighbors, other village members, and friends for support.

In many projects, however, social effects appear closer to an unintended outcome associated with group activities than a planned intervention with appropriate design and expertise.

As social systems are tacit and complex, capital developed around short-term project interventions raises questions over their reliability in the event of a severe or extended shock⁸⁶ or the removal of the program, and of the social relationships between project and nearby non-project areas.⁸⁷ Others have pointed out a risk that the logic models of resilience programs can unintentionally preference dominant social groups to the exclusion of others,⁸⁸ which advises further caution if cohesion interventions are not based on careful power analysis.

Governance systems

Improvements to the vertical governance system, especially for disaster preparedness, feature as one of the major sustainability strategies of the programs reviewed, and a number of successes, usually in the form of political commitment, have been achieved. Although political systems vary by country, the lessons seem to indicate that resilience actors, whether working alone or in a partnership, should connect their interventions across various governance levels, such that top-down policy and budgeting processes respond to subnational planning that sufficiently identifies needs and capacities.

The Pilot Partnership for Climate Resilience has used various financial instruments to create a conducive environment for national resilience planning, helping a number of countries create formal structured budgeting for resilience and increase their budget allocations. It is credited with having changed 'mindsets and behaviors' relating to climate action by demonstrating the co-benefits of climate action in the agricultural supply chain and by engaging with and coordinating across a broad range of political stakeholders.⁸⁹

The Lutheran World Relief Transboundary project is one example of a bottom-up process registering high-level success, achieving national acknowledgment in Nepal and India of the project-facilitated flood preparedness and mitigation plans. They have encouraged subnational commitments to channel financial resources for the execution of disaster

⁸⁶ During the 2015/2016 El Niño-related drought in Ethiopia pastoralists groups reported that their typical social mechanisms for support broke-down as the drought deepened (PRIME). In Burkina Faso communities gave examples of modifying the support they provided to neighbor during extended drought (RISE)

⁸⁷ Itad 2018

⁸⁸ Forsyth 2018

⁸⁹ Itad 2019

management plans and early warning systems, although the financial flow was still low at the time of the evaluation. Groundswell's work in supporting governance systems to support the promotion of agroecology for resilience resulted in communal resilience plans being established in two communes in Mali and Burkina Faso.

Although bottom-up processes do appear to incubate best practices in disaster risk reduction (DRR) planning, livelihoods and natural resource management, a few evaluations⁹⁰ question whether governments could realistically afford to adopt these approaches.^{91,92} The problem would seemingly become more acute with greater use of intersectional approaches (which consider the dynamic relationship of age, gender, disability, ethnicity and other factors at an individual level⁹³) or household level targeting, despite Mercy Corps finding that the latter was effective in avoiding the negative impacts experienced by people relying on weak community-level DRR governance in the event of a major shock.⁹⁴ Furthermore, wider literature points to inadvisability of incorporating community-based adaptation programs into government systems that do not support local decision-making as instability and corruption can wipe out their gains.^{95,96}

The Africa Climate Change Resilience Alliance (ACCRA) brought together a partnership of resilience expertise⁹⁷ to support governance systems and organizational approaches for climate resilience. In Uganda, Ethiopia and Mozambique, ACCRA partners worked alongside national government to support the incorporation of community-driven adaptive capacity initiatives into local government planning. The Alliance also enhanced the capacity of civil society networks and produced learning aimed at improving the policy and practice of the participating non-government and government agencies and their regional and global networks.

Market systems

A small number of the reviewed projects work within market systems to create conditions conducive to income improvements and service supply that people at risk of shocks require.⁹⁸ These differ from the far greater number of livelihood-related projects, which focus on sellable assets but have limited influence on market actors or conditions.⁹⁹ In Practical Action's project in Bangladesh, for instance, five out of six products supported were able to find sufficient buyers, but at least one other project had introduced crops for which there was insufficient purchase demand. Even in the Practical Action example producers still struggled with market access issues.

The iDE-led Anukulan¹⁰⁰ program uses its Commercial Pocket Approach to create a system of climate and business services sited around agricultural collection centers. The centers act as an aggregation point for the produce of smallholder farmers practicing climate-smart agriculture, supporting farmers to reach a volume that becomes attractive to commercial buyers and 'last mile' private sector extension services. Furthermore, the collection centers

⁹⁰ Other evaluations reviewed do not cover financial viability in their relevance tests.

⁹¹ Myanmar Alliance.

⁹² MAR Ethiopia.

⁹³ See: <http://www.braced.org/resources/i/building-resilience-for-all/>

⁹⁴ 'What matters for households' recovery trajectories following the Gorkha earthquake? A two-year panel study.'

⁹⁵ Regmi & Star 2014

⁹⁶ Ayers et al 2014

⁹⁷ Consisting of Oxfam, CARE, Save the Children, World Vision and the Overseas Development Institute (ODI), with the International Institute for Environment and Development (IIED) acting as a collaborative partner.

⁹⁸ In Mercy Corps' study of post-earthquake conditions in Nepal the role of markets was found to be influential for recovery: "Growth in the availability of market goods over time reduced the likelihood of households being in poverty two years after the earthquake; availability of goods early on was associated with small but statistically significant gains in food security."

¹⁰⁰ Information based on project summary provided rather than an evaluation.

¹⁰⁰ Information based on project summary provided rather than an evaluation.

act as sites for assessing the climate change impacts of the areas and linking of Sustainable Farmer Organizations into Nepal's Local Adaptation Plans of Action.

Across a larger geographic area, Mercy Corps' Pastoralist Areas Resilience Improvement through Market Expansion (PRIME) in Ethiopia is the evolution of two successive earlier programs in drought-prone regions. It works with a variety of financial, livestock, and weather and market information service providers, as well as implementing natural resource management techniques to restore rangelands. Its evaluation indicates a positive impact on well-being indicators in the face of a severe drought, but was not able to identify the intermediate outcomes linked to its market interactions, suggesting systems approaches need different evaluation models.¹⁰¹ However, as the drought situation moved closer to a humanitarian situation and the project applied for crisis modifier funding (See Box 3), it was able to respond through its networks of traders, veterinarians, and micro-finance institutions, suggesting it had built strong linkages with the affected population.¹⁰² Participants in the value chains supported by the GRAD project saw seriously depleted returns during the 2015 drought; however, in focus group discussions they considered this work to be a major benefit of the program and the new technical assistance for livestock export and crop production to be a major contributor to their income potential in recovery. Furthermore, USAID's research on resilience in Zimbabwe demonstrates that market conditions (particularly selling and purchase prices related to livelihoods and food consumption) can have serious effects on household well-being outside of a natural shock period.

Box 3: Lessons on crisis modifiers

Crisis modifiers or contingency funds are program features designed to allow the deployment of emergency funding should a severe shock or stress threaten a population during the program life-time. Both DFID and USAID have trialed the use of such mechanisms over the past five years. Emerging research suggests they have been effective in meeting pressing needs when deployed in a timely manner. Examples under BRACED show there are constraints and considerations that need to be taken into account when designing contingency funding mechanisms:

- Having an ex ante plan in place which can be rapidly enacted and operationalized by agency staff
- Rapid deployment requires flexible funding from donors: this may require relaxation of the normal fund dispersal procedures, a higher risk tolerance and delegated authority
- Planning to return to pre-shock state: Contingency funding should be time bound and once the worst effects of the shock subsides, a plan of how to return to previous activities while at the same time linking to existing support structures e.g. social protection schemes is important,
- Asking development agencies to do humanitarian work requires collaboration and adherence to best practice: response and recovery work can be outside the normal mandate and technical skills of development agencies and therefore following best practice and forming collaborative arrangements with humanitarian actors is vital
- Responding in a timely way to the right triggers: these can be forecast based (e.g. forecast cyclone), market signals (e.g. staple price spikes) or observed negative coping strategies (e.g. out migration, sale of livestock)¹⁰³

¹⁰¹ Kirkby et al 2019

¹⁰² Also found in other contexts in: World Food Programme, Strategic Evaluation of WFP Support for Enhanced Resilience <https://www1.wfp.org/publications/evaluation-wfps-support-enhanced-resilience-terms-reference>

¹⁰³ <http://www.braced.org/resources/i/?id=fa9423c3-327e-442a-aca6-0775d2dc9464>

4. Conclusions and recommendations

The programs reviewed offer diverse responses to dealing with shocks and stressors in a number of countries and regions around the world. Although the means of inclusion, asset and capacity requirements, and systems conditions are different in each context, certain design themes emerge that are worth emulating and/or testing further:

- 1. More time, resources, and skills are required to support inclusion.** Community-level assessments appear to be a good starting point but dominant groups and logistical pressure can create blind spots. Programs may consider longer periods of assessment that include gradual awareness-raising about particularly excluded groups. Disassociating assessments from the promise of forthcoming interventions may also help. Projects must be able to address issues surfaced by deeper probing into exclusion, and therefore the extent and cost of assessment needs to be balanced against resources availability for implementation.
- 2. Programs should consider ways to better integrate climate risk interventions into community-led processes.** Although community-designed projects appear to offer stronger contextual relevance, programs should consider how they encourage the incorporation of future uncertainty and mitigate added stress on natural resources. In arid and semi-arid areas, use of water harvesting and conversation may be considered an essential accompaniment to livelihood interventions.
- 3. Programs should consider the wider experience of people rather than their vulnerability to a particular shock.** This includes supporting the motivations and livelihood ambitions of men and women, understanding their position in the surrounding markets, governance, and other systems, and considering the range of shocks that they may experience. Interventions that consider single shocks may be appropriate for innovations (such as drought-based insurance) but should be used as entry points to consider other shocks people face.
- 4. Programs should create clearer replication pathways.** As all programs are time bound and small scale (especially compared to climate threats), they should plan for how their interventions could be used by others. This is especially important for those who have targeted better-off groups to demonstrate an innovation.
- 5. When vertical integration into government systems is the objective,** programs should consider piloting cost efficiency measures (perhaps staged reduction in costs over time) and/or seek partners working to increase or protect the level resilience funding available at national and subnational levels.
- 6. Designs that include assets and capacities may consider how a humanitarian response would enter and exit their theory of change should a large-scale shock occur.** This already happens to some extent under the R4 Initiative and occurred under PRIME and the Phase contingency funds, but for most cases humanitarian and development initiatives are separated despite sharing overlap in asset and capacity interventions.

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6. Appendix: Programs reviewed

| | Project | Overview | Organization | Program | Region or country | Links |
|---|--|--|--|---------------------------------|--------------------------|---|
| 1 | BRACED: Building Resilience and Adaptation to Climate Extremes and Disasters | BRACED supported 15 projects in its initial phase, extending funding for 9 of these in a second phase, which enabled people to become more resilient to climate extremes in South and Southeast Asia and in the Sahel and its neighboring countries. To improve the integration of disaster risk reduction and climate adaptation methods into development approaches, BRACED sought to influence policies and practices at the local, national and international level. | Multiple organizations, funded by DFID | BRACED | Asia, Africa | http://www.braced.org/ |
| 2 | FarmerLink | Grameen Foundation, with the Philippine Coconut Authority, the Franklin Baker Company, and the People's Bank of Caraga (PCB), trained coconut farmers in better agricultural practices, and provided them with financial advice. Prototype early warning systems were developed to provide alerts to farmers on weather, and pest and disease outbreaks. Most services were provided by SMS, while a smaller groups received support from agricultural extension agents. Monitoring tools were used by the coconut buyer (Franklin Baker) and PCB. | Grameen | GRP Global Resilience Challenge | Philippines | http://www.globalresiliencepartnership.org/teams/resilience-of-smallholder-farms/ |
| 3 | Women's Action towards Climate Resilience for Urban Poor in South Asia | Mahila Housing SEWA Trust received funding to empower women from slums in seven South Asian cities to respond to the most significant climate-related risks facing their communities: heat waves, flooding, water scarcity; and water and vector-borne diseases. Activities focused on improved access to, and use of, | Mahila Housing SEWA Trust | GRP Global Resilience Challenge | India, Nepal, Bangladesh | https://www.globalresiliencepartnership.org/teams/coping-and-adaption-technologies/ |

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| | | data, equipping people with the skills needed to undertake vulnerability and risk assessments, and to plan appropriate responses. The project also worked to build and strengthen networks of woman advocates to lead slum communities, and influence city institutions to move to a more pro-poor approach to adaptation and resilience. | | | | |
| 4 | Sri Lanka Mangrove Conservation Project | The project aimed to protect all 21,782 acres (8,815 hectares) of Sri Lanka's existing mangrove forests by providing alternative job training and microloans to 15,000 impoverished women who live in 1,500 small communities adjacent to the nation's mangrove forests. The project focused on replanting 9,600 acres (3,885 hectares) of mangrove forests, using climate-resilient seedlings, and developing mangrove nurseries. Financial services were a second key strategy; communities were encouraged to take on mangrove conservation in exchange for receiving microloans to start small businesses, issued through local partner Sudeesa. | Seacology | GRP Water Window Challenge | Sri Lanka | https://www.seacology.org/project/sri-lanka-mangrove-conservation-project/ |
| 5 | Nepal-India Transboundary Resilience Project | LWR aimed to strengthen the quality of life of transboundary communities in the Gandak/Narayani and Koshi river basins by increasing their resilience to flood impacts. The project had two main objectives: 1) strengthening the ability of targeted communities to cope with the effects of flooding through a trans-boundary community-based early warning system, by strengthening institutional capacities, safety nets and mitigation measures, and by fostering advocacy; and 2) increasing the adaptive capacity of targeted communities, contributing to their ability to change and adapt to the impact of floods in the medium and long | Lutheran World Relief | GRP Water Window Challenge | Nepal, India | http://www.globalresiliencepartnership.org/teams/lutheran-world-relief-lwr/ |

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| | | term, by improving access to diversified livelihood sources, and to financial services. | | | | |
| 6 | Agriculture and Water Resilience in Coastal Areas of Bangladesh (AWRCAB) | AWRCAB was an 18-month project funded through GRP's Water Window Challenge Fund, and implemented in partnership with Shushilan, a national NGO, and Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES), an international NGO. The goal of the project was to strengthen physical, social and economic resilience of poor families in selected administrative units in south-west Bangladesh. It had two main objectives: 1) to drive increased use of meteorological and agricultural information and advisory services to mitigate the negative impact of flooding and salinity on agricultural livelihoods, especially among poor women producers; and 2) to enhance economic resilience of poor farmers, especially women, through commercial production and strengthen marketability of flood-saline resilient crop varieties. Activities included agro-meteorological information services, and climate-adaptive farming techniques, including aqua-geponics, crab nurseries, dyke farming, short-cycle shrimp farming, sack gardening, and vermicomposting. | Practical Action | GRP Water Window Challenge | Bangladesh | http://www.globalresiliencenetwork.org/teams/practical-action/ |

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| 7 | TRANSFORM (Transboundary Flood Risk Management through Governance and Innovative Information Technology) | As part of GRP's Water Window Challenge Fund, Mercy Corps has provided an information-based model for transboundary collaboration and investment to create flood resilience across watersheds in Indonesia. The project took an integrated approach to flood risk reduction, introducing innovative and user-friendly information tools for communities, government, and private sector organizations. Working with these stakeholders in vulnerable downstream urban neighborhoods and upstream rural villages, the project provided actionable, real-time information on flood risks and projected returns on investment from flood risk reduction measures, strengthening structures for collaboration and coordinated action for flood risk reduction. | Mercy Corps | GRP Water Window Challenge | Indonesia | https://www.mercycorps.org/press-room/releases/mercy-corps-and-atma-connect-join-forces-build-community-resilience-new-digital |
| 8 | 100 Resilient Cities | The Rockefeller Foundation launched 100 Resilient Cities (100RC) in 2013 to help cities around the world become more resilient to physical, social, and economic challenges. It was founded to find alternatives to reactive planning and siloed decision-making that would allow municipal institutions to develop attitudes and strategic planning essential for cities and communities to respond to shocks and stresses. 100RC supports the integration and implementation of resilience into member cities' planning and projects. 100RC's main objectives are 1) to embed resilience in cities' processes, policies, and practices through creation of a citywide Resilience Strategy and hiring of a chief resilience officer; and 2) to build resilience into and deliver prioritized projects through support from 100RC and its partners in implementation. | Rockefeller Foundation | | Global | https://www.100resilientcities.org/ |

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| 9 | Children's Resilience Programme | The program focuses on building children's positive coping strategies and psychological resilience to different shocks and stresses through a non-clinical psychosocial and protection program. The interventions consisted of 8-16 structured workshops for children aged 10-16 years old, led by the same facilitators. The workshops were designed to improve cooperation and peaceful interaction between children; to improve the motivation to play, problem solving and positive attitude to others; to enhance expectations of the future; to improve impulse control and reduce aggressive or risk taking behavior; and to build capacity and awareness about self-protection and protection of peers. | Save the Children | | Ethiopia (project also implemented in Haiti, OPT, Iraq, Jordan, Lebanon, Yemen, Somalia, South Sudan, Kenya, Mali, CAR, Guinea, China, Bangladesh, Denmark). | https://resourcecentre.savethechildren.net/library/children-s-resilience-programme-psychosocial-support-and-out-schools |
| 10 | Anukulan - Driving small farmer investment in climate-smart technologies | The project's broad aim was to develop public-private partnerships to scale up proven, sustainable climate-adaptive approaches and support the development of existing and sustainable rural organizations to manage these approaches in the long term. Anukulan therefore supported smallholder farmers to increase annual income by diversifying income generating activities, and promoting investments in climate-smart technologies such as drip irrigation, conservation agriculture, essential oil production, multiple-use water systems and community-based renewable energy. It also worked to build the capacity of local communities and institutions to manage shocks. The integration and inclusion of women, girls and other disadvantaged groups was central to the project's approach. | iDE | BRACED | Nepal | http://www.braced.org/about/about-the-projects/project/?id=ac922db5-8324-4cff-a6a8-b85e3ff81c04 |
| 11 | PROGRESS: Building resilient governance, | The aim of PROGRESS was to build absorptive, adaptive and transformative capacities of vulnerable household and communities to be more resilient in the face of increasing climate shocks and stresses in | Mercy Corps | BRACED | Kenya, Uganda | http://www.braced.org/about/about-the-projects/project/?id=b34bef4 |

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| | markets and social systems | three main ways. The project first strove to build linkages between communities and local governments, promoting more community-centered, participatory and responsive planning and budgeting around climate adaptation. The second aim was to build links with private sector actors, enabling better access to services, inputs, supplies and financial services. This also involved developing links between producers and markets, with an emphasis on female-dominated sectors such as small ruminants and poultry, dairy and food processing, and clean energy alternatives for domestic fuel needs. The project's final aim was to design program activities in a way that addressed gendered inequalities and power structures. | | | | 0-1170-4503-b51b-1bb2c1fd179d |
| 12 | Decentralizing Climate Funds | DCF was an action-research and advocacy project supporting communities in Senegal and Mali to become more resilient to climate change through access to locally-controlled adaptation funds. The project aimed to build a participatory process through which resilience investments are identified and prioritized by local communities in a way which is inclusive of women. DCF sought to embed planning and finance mechanisms in existing local and national systems. Sharing locally-generated evidence from these experiences with local, national and international audiences was an advocacy tool to encourage greater decentralization of climate funds. | Near East Foundation; Innovation, Environnement et Développement en Afrique (IED Afrique); The International Institute for Environment and Development (IIED) | BRACED | Mali, Senegal | http://www.braced.org/about/about-the-projects/project/?id=fadb8fd0-55a3-4715-8632-c19901bbda4c |

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| 13 | PRIME: Pastoralist Areas Resilience Improvement through Market Expansion | PRIME aimed to build on previous resilience programming by supporting change through market-driven approaches to livestock production and livelihood diversification that also enabled pastoralist communities to adapt to a changing climate. To achieve the primary objective of increasing livestock production and improving market linkages, the project targeted five intermediate outcomes: 1) improving livestock production and competitiveness; 2) enhancing households' resilience and ability to adapt to climate change; 3) increasing livelihood diversification and long-term market opportunities; 4) innovation, learning and knowledge management; 5) improving the nutritional status of children and mothers. | Mercy Corps | | Ethiopia | https://www.prime-ethiopia.org/ |
| 14 | MRED: Managing Risk through Economic Development | MRED aimed to develop a more sustainable disaster risk reduction approach directly linked to economic security by reducing the human and economic toll of natural disasters while building resilience and reducing poverty. The approach was to work through community-level Disaster Management Committees in target communities as a way to adopt practices for hazard preparedness and, where appropriate, early warning and contingency planning. By combining market development approaches with best practices of community-based DRR, the program aimed to support development of disaster mitigation plans informed by a participatory disaster risk assessment incorporating specific assessment of livelihood and economic development opportunities. | Mercy Corps | | Nepal (the project also operated in Timor Leste). | http://nepal.mercycorps.org/projects/disaster-projects/m-red.php |
| 15 | CA-MEL: Central America- | CA-MEL operated between 2014 and 2017 in 44 communities at risk of disasters in the Solomon Islands, Vanuatu, El Salvador, and Guatemala, and | Oxfam America | | Guatemala, El Salvador, Solomon | https://www.oxfamamerica.org/explore/research-publications/absorb-adapt- |

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| | Melanesia Resilience Building Program | was co-designed and delivered with NGO partners. It aimed to strengthen community resilience to disasters through: increasing communities' and local authorities' disaster risk awareness and capacities for disaster risk reduction and response; facilitating access to resilient livelihoods and social services; providing a mechanism for funding to bolster local capacity for disaster response; and increasing collaboration between communities, NGOs, government authorities, development partners and other stakeholders. By doing so, and through an investment in learning activities, it aimed to refine thinking about managing risk at household and community levels and fostering resilient development. | | | Islands, Vanuatu | transform-final-evaluation-of-the-central-america-melanesia-resilience-building-program/ |
| 16 | ACCRA: Africa Climate Change Resilience Alliance | ACCRA aimed to increase the use of evidence by governments, development and humanitarian actors in developing and implementing policies and interventions that improve poor people's adaptive capacity, with a specific focus on climate-related hazards, change and variability. The project objectives were to implement national level advocacy and capacity-building strategies in Ethiopia, Uganda and Mozambique, and develop the evidence base around interventions that contribute to climate-resilient development. Activities included developing a national advocacy strategy for adaptation through civil society engagement; creating capacity-building plans and partnerships based on a needs assessment; disseminating climate change information and encouraging engagement; building systems for communicating results. | Climate and Development Knowledge Network | | Mozambique, Ethiopia, Uganda | https://cdkn.org/project/africa-climate-change-resilience-alliance-phase-2/?loclang=en_gb |

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| 17 18 | R4 Rural Resilience Initiative (Senegal and Ethiopia) | The R4 Rural Resilience Initiative aimed to respond to the challenges faced by food-insecure communities in the context of increasing frequency and intensity of climate disasters and other shocks. The program's four main risk management components included: 1) risk reduction (improved resource management through asset creation); 2) risk transfer (insurance); 3) prudent risk taking (livelihood diversification and microcredit); and 4) risk reserves (savings). In Senegal, the initiative was first piloted during the 2013 agricultural season in Koussanar and has subsequently expanded to Tambacounda, Kolda, and Kaffrine regions. In Ethiopia, the project took place in the Tigray region. | Oxfam America; World Food Programme | | Senegal and Ethiopia (project also operated in Kenya, Malawi and Zambia) | https://www1.wfp.org/r4-rural-resilience-initiative |
| 19 | PRSAN: Projet de Résilience, Sécurité Alimentaire et Nutritionnelle [Resilience, Food Security and Nutrition Project] | PRSAN was carried out in the North and Center-North regions of Burkina Faso between 2013 and 2017 with two implementing partners, the Alliance Technique d'Assistance au Développement (ATAD) and the Office de Développement des Eglises Evangeliques (ODE). The project was aimed at enabling particularly vulnerable households to increase their resilience and improve their food security and nutritional situation. Project activities included supporting households in crop production, market gardening, processing and household businesses, providing awareness-raising on good nutritional practices, carrying out community-level disaster assessments and establishing early warning committees, and distributing livestock and cash transfers. | Oxfam; Christian Aid | | Burkina Faso | https://policy-practice.oxfam.org.uk/publications/resilience-in-burkina-faso-impact-evaluation-of-the-resilience-food-security-an-620470 |
| 20 | Zaman Lebidi | The project was implemented between 2015 and 2017 in three regions; East, Center-North and North covering four provinces: Passoré, Namentenga, | Christian Aid | BRACED | Burkina Faso | https://oxfam.app.box.com/s/ekdfb4jj63vnqiu46wcwwp7swn9977 |

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| | | Sanmatenga and Gnagna. The project had four main aims: 1) promoting climate information sharing mechanisms for community use to transmit regular, reliable and comprehensible information on climate change, seasonal forecasting, and early warning; 2) appropriate and sustainable livelihoods interventions to reduce vulnerability to variability, climate extremes and disasters; 3) strengthening the capacity of local actors to respond to variability, climate extremes, and disasters; 4) improve understanding of what is working in building resilience to climate extremes and disasters and what constitute progressive and transformational change, including the factors affecting them. | | | | |
| 21 | Enhancing Resilience to Natural Disasters and the Effects of Climate Change Program | The program was introduced in 2011 as part of WFP Bangladesh's disaster risk management and resilience portfolio. The central purpose was to reduce the risks posed by natural disasters and the effects of climate change in the most vulnerable communities, while promoting food security and nutrition in ultra-poor households in river erosion-prone areas and in cyclone- and salinity-affected coastal regions. The program had 2 main focus areas: 1) targeting and enrolling ultra-poor households, with priority to women; 2) conducting a participatory process to map community-level vulnerabilities and identify priorities for infrastructure work. In the first two years, dry season activities involved building or rehabilitating infrastructure through unskilled labor, largely ultra-poor women. During the wet season, training was provided to improve disaster preparedness, climate change awareness, life skills and nutrition, with participants receiving a small transfer of food and | Ministry of Local Government, Rural Development and Cooperative; World Food Programme | | Bangladesh | https://www1.wfp.org/publications/evaluation-report-wfps-enhancing-resilience-programme |

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| | | cash. In the third and final year, women from participating households were given grants to set up micro-businesses, and monthly allowances. | | | | |
| 22 | CRLESP: Copperbelt Rural Livelihoods Enhancement Support Project | The CRLESP encouraged poor households to engage in commercial livestock activities through livestock transfers, training on livestock management and basic household livelihood skills, and provision of agricultural extension and veterinary services. Further, the program attempted to mitigate poor health and raise HIV-AIDS awareness, and the importance of improved hygiene and sanitation through community training. Communities and households had to pass a screening process and follow a set of guidelines to qualify for program participation. Community members first organized themselves into groups and submitted an application. Households in approved groups had to demonstrate their eligibility, which was contingent on commitment to participate in training activities, commitment to construct an animal shed, and payment into a community insurance fund. About 60% of the project households in our survey lived on less than US\$1.90 (PPP) per person per day at baseline. | Heifer International | | Zambia | https://www.globalgiving.org/projects/copperbelt-livelihood-enhancement-zambia/ |
| 23 | MAR: Market Approaches to Resilience | MAR was designed to test market-based approaches to improving the resilience of vulnerable pastoralist and agro-pastoralist households to climate change in the Afar, SNNP (Southern Nations, Nationalities and Peoples) and Somali regions. The project supported households, businesses and communities to manage resources and everyday risks. It aimed to work with private investors to address climate risks by promoting appropriate economic opportunities, and designing financial models that help smooth risk. Promoting diversification of economic activity among the most vulnerable, through public and private sector | Farm Africa | BRACED | Ethiopia | http://www.braced.org/about/about-the-projects/project/?id=93c57ed1-dd52-4e5e-a9c6-1711e03a6e4a |

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| | | partnerships was also a key target. Activities included facilitating provision of financial services, building local government capacity, strengthening emergency response and climate information systems, and supporting participatory rangeland and natural resource management. | | | | |
| 24 | SUR1M: Scaling-Up Resilience for 1 Million People in the Niger Basin River of Niger and Mali | SUR1M aimed to support assisted up to 1 million people to increase their resilience and adaptation to climate change and disasters. The first key area targeted availability of and access to financial services, and financial literacy skills, particularly for women. Natural resource management was another focus, with farmers given training and support to implement climate-smart agricultural practices, as well as access to subsidized seeds. The project also sought to develop local value chains, promoting access for small-scale producers. Finally, SUR1m worked with municipal governments to incorporate disaster risk reduction, climate change adaptation and gender inclusion into strategic planning and budgets, with additional support provided to early warning systems. | Catholic Relief Services | BRACED | Niger, Mali | http://www.braced.org/about/about-the-projects/project/?id=cef9556d-162b-4102-8b47-5299bdc2cca9 |
| 25 | Myanmar Alliance | The project was based on a model promoting a participatory, inclusive and comprehensive process for resilience building. It aimed to address country gaps and needs through five pathways of change: 1) increasing preparedness and coping mechanisms to address more immediate disaster events and longer-term adaptation; 2) supporting diversified, sustainable livelihoods for vulnerable people, and more adaptive natural resource management; 3) establishing safety nets in communities; 4) improving dissemination, access and use of resilience information, and enhancing ability to interpret information to aid | Plan International | BRACED | Myanmar | http://www.braced.org/about/about-the-projects/project/?id=eb1fb3dd-2d5f-4301-9302-acc332360f8f |

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| | | decision-making and planning at levels; and 5) creating spaces for active engagement of vulnerable groups, particularly women and children, in resilience planning processes. | | | | |
| 26 | Adaptation Learning Programme | ALP used participatory, community-led methods to find solutions to problems caused by the changing climate. This involved facilitating analyses of vulnerability, climate risks and current adaptive capacity, in order to create community-based strategies which taken into account the broader regional and national contexts. | Care | | Kenya | https://insights.careinternational.org.uk/publications/adaptation-learning-programme-in-kenya |
| 27 | Graduation with Resilience to Achieve Sustainable Development (GRAD) Project | The GRAD Project sought to empower individuals and communities through a range of interventions including improving aspects of dietary practices, animal husbandry techniques, and facilitating access to financial facilities and institutions. Training was provided, and a group platform created to allow members to make informed and proactive choices about livelihood activities. | Care | | Ethiopia | http://www.snv.org/project/gr-graduation-resilience-achieve-sustainable-development |
| 28 | Nampula Adaptation to Climate Change (NACC) Project | NACC's approach consisted of two main pillars: economic empowerment and social empowerment. Economic interventions included introducing conservation agricultural techniques, agricultural extension activities, promotion of farmer groups, support to livestock production and access to financial services. Social interventions worked with marginalised groups, and women, to build confidence, while also focusing on men's awareness and engagement in gender issues. | Care | | Mozambique | https://www.careevaluations.org/evaluation/nacc-final-evaluation-report/ |

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| 29 | Strengthening the Dairy Value Chain (SDVC) | SDVC's package of interventions, aimed at increasing smallholder participation in the dairy market, included improved cow management practices, increased service provider and input supplier linkages, and newly-created marketing channels and group formation. IN its earlier phase, the project worked to broker access to quality inputs and animal management practices, and to encourage private sector actors include smallholder farmers in their value chains. | Care | | Bangladesh | https://www.care.org/work/world-hunger/sustainable-economies/projects/sustainable-dairy-value-chains |
| 30 31 32 | Various: SHOUHARDO 3, Nobo Jatra, and SAPLING programs | The three programs evaluated in this report worked to bolster resilience in different ways. SHOUHARDO3's interventions concentrated on empowerment, governance, and engagement. Nobo Jatra worked to improve links between food production and livelihoods activities through training and capacity building, with the aim of addressing the root causes of food insecurity. SAPLING took a multi-sectoral approach to resilience, with interventions aiming to increase homestead production and consumption of diverse, nutritious foods, and to build capacity to mitigate and adapt to disasters. | USAID | Food for Peace | Bangladesh | https://www.usaid.gov/bangladesh/food-assistance |
| 33 34 | Various: SABAL and PAHAL projects | Both the SABAL and PAHAL projects worked to improve the resilience of vulnerable populations to shocks and stressors. SABAL's interventions focused on strengthening and diversifying livelihoods, and on improving the health and nutrition of pregnant and lactating women, and children under five. PAHAL also focused on strengthened and diversified livelihoods, but as part of a broader package of interventions | Mercy Corps | Food for Peace | Nepal | https://www.usaid.gov/nepal/food-assistance |

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| | | designed to mitigate risks associated with chronic food insecurity. https://www.usaid.gov/nepal/food-assistance | | | | |
| 35 | RISE | The RISE Initiative's interventions seek to strengthen sustainable economic well-being through support to diversified economic opportunities, intensified production and marketing, access to financial services and market infrastructure. A second set of interventions aim to strengthen institutions and governance through improving natural resources and disaster risk management, strengthening conflict management systems and government and regional capacity and coordination. The final group of interventions work to improve health and nutritional status through increasing access to potable water, training on health and nutrition practices, particularly for mothers and children, supporting family planning, and improving sanitation practices. | USAID | | Burkina Faso, Niger | https://www.usaid.gov/node/46296/our-work |
| 36 | Gazetted Forests Participatory Management Project for REDD+ | The project has two main aims: improving the carbon sequestration capacity of gazetted forests and reducing poverty in rural areas. It also seeks to use participatory methods to build a better understanding of the real impacts of forest conservation policies. This should, in turn, develop government capacity to measure and monitor forest cover, including tracking changes resulting from conservation and reforestation programs. | Climate Investment Fund and African Development Bank | | Burkina Faso | https://www.climateinvestmentfunds.org/projects/gazetted-forests-participatory-management-project-redd-pgfcredd |
| 37 38 39 | Various: Climate Investment Funds | The Climate Investment Funds (CIF) were established to scale up finance for climate change mitigation and adaptation. CIF aims to foster transformational change | Climate Investment Fund | | CTF Chile, Mexico, Morocco, | https://www.climateinvestmentfunds.org/ |

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| 40 | | toward low-carbon, climate-resilient development in the areas of mitigation, resilience, and forests. It does this through four programs: The Clean Technology Fund (CTF), the Pilot Program for Climate Resilience (PPCR), the Forest Investment Program (FIP), and the Scaling Up Renewable Energy in Low-Income Countries Program (SREP). Under these programs, 300 projects across 72 countries have been supported. | | | Thailand, Turkey. SREP Armenia, Honduras, Kenya, Nepal. PPCR Jamaica, Mozambique, Nepal, Niger, Tajikistan, Zambia. FIP Burkina Faso, Mexico, Mozambique. | |
| 41 | Protracted Relief Programme | The PRP was a four year, £28 million project designed to stabilise the food security and protect the livelihoods of poor and vulnerable households, particularly those affected by HIV/AIDS. The bulk of a wider range of activities help beneficiaries to increase their food production, and to provide home-based care to the chronically ill. Interventions reached approximately one-third of all smallholder households in the country, about 1.7 million people. | DFID, FAO | | Zimbabwe | https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=2ahUKEwiq_43r-M3kAhW7QUEAHbldBoEQFjABegQlChAF&url=https%3A%2F%2Fwww.odi.org%2Fsites%2Fodi.org.uk%2Ffiles%2Fodi-assets%2Fpublications-opinion-files%2F1894.pdf&usq=AOvVaw2NuyxHChtavoN0xbExc8I5 |

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| 42 | Resilience Dividend Valuation Model | This report describes the resilience dividend valuation model and its application to six case studies. Its purpose was not to evaluate a particular project, but to refine conceptualizations of particular systems and interventions in a structural economic framework, and to use this information to plan data collection and modeling efforts that can be used to estimate parts of the resilience dividend. | RAND, Rockefeller Foundation | | Nepal, Pakistan, Bangladesh, USA, Vietnam | https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=2ahUKEwi9xtfLk87kAhWPFMAKHZ6zB_cQFjACegQIDBAE&url=https%3A%2F%2Fwww.rand.org%2Fcontent%2Fdam%2Frand%2Fpubs%2Fresearch_reports%2FRR2100%2FRR2130%2FRAND_RR2130.pdf&usq=AOvVaw38SKxTGYAlwLvmu6lQ36Od |
| 43 | Various | This study did not focus on a particular project, instead looking at 4 areas of Zimbabwe where multiple interventions have been made to address food security. Programmes generally included improvements to provision of water and sanitation, food and cash support, agriculture and veterinary services, and access to credit. | USAID | | Zimbabwe | |
| 44 | Various | This 2-year panel study examined resilience among populations after the 2015 Gorkha earthquake. The evaluation did not focus on a specific program or project, but looked at areas where interventions had taken place, in order to determine which strategies had boosted resilience capacities. | Mercy Corps | | Nepal | https://www.mercycorps.org/sites/default/files/GhorkaEarthquake_Recovery_MercyCorps_April2018_0.pdf |



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