RESILIENCE INSIGHTS

LESSONS FROM THE GLOBAL RESILIENCE PARTNERSHIP

Global Resilience Partnership
September 2019

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GLOBAL
RESILIENCE
PARTNERSHIP

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Suggested Citation

Global Resilience Partnership (2019). Resilience Insights: Lessons from the Global Resilience Partnership. GRP: Stockholm.

Acknowledgements

The authors wish to thank the following people for their generous time and contributions to greatly improving the quality of this report: members of the report reference group, GRP partners who generously shared evidence, reports and other material, GRP Challenge Fund grantees, members of the GRP secretariat and those who gave their time to be interviewed in preparing this report.

Disclaimer

This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID) and the support of the Z Zurich Foundation. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID, the United States Government or the Z Zurich Foundation, or of any of the individuals and organizations referred to in the report.

Images

Front cover: ResilNam/René Arnold; Executive summary: Practical Action; 1: Groundswell International; 2: Mahila Housing Trust; 3: Producers Direct; 4: Practical Action; 5: DRC/Clare Stott; 6: Groundswell International. Back cover: BRAC

Contents

List of figures

List of tables

Acronyms

ASP	adaptive social protection
BRACED	Building Resilience and Adaptation to Climate Extreme Disasters
CAG	community action groups
CBA	cost–benefit analyses
CBOs	community-based organizations
CDMCs	Community Disaster Management Committees
CIS	Climate information services
CTS	Crescent Takaful Sacco
DFID	Department for International Development
DiDRR	disability-inclusive disaster risk reduction
DRC	Danish Refugee Council
DRR	disaster risk reduction
EbA	ecosystem-based adaptation
EWS	early warning system
FbF	forecast-based financing
FCS	Food Consumption Score
FMNR	farmer-managed natural regeneration
GFDRR	Global Facility for Disaster Reduction and Recovery
GRAID	Guidance for Resilience in the Anthropocene: Investments for Development
GRP	Global Resilience Partnership
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IRS	Inclusive Resilience Scorecard
LWR	Lutheran World Relief
MAR	Market Approaches for Resilience
MDB	Multi-lateral Development Bank
MEL	monitoring, evaluation and learning
MRED	Managing Risk through Economic Development
MRR	Monitoring and Results Reporting
NACC	Nampula Adaptation to Climate Change
NGO	non-governmental organization
NRDC	National Resources Defence Council
ODA	official development assistance
ODI	Overseas Development Institute
PCA	Philippine Coconut Authority
PHASE	Providing Humanitarian Assistance for Sahel Emergencies
PRA	Philippine Reclamation Authority
PRIME	Pastoralist Areas Resilience Improvement through Market Expansion
RCC	risk-contingent credit
REAL	Resilience Evaluation, Analysis and Learning [consortium]
RMEL CoP	Resilience Measurement, Evidence and Learning Community of Practice
SATISFy	Satellite Technologies, Innovative and Smart Financing for Food Security
SDG	Sustainable Development Goal
SRSP	Shock-responsive social protection system
USAID	United States Agency for International Development
VSLAs	village savings and loans associations
WFP	World Food Programme

Foreword

Building resilience where it is needed the most

Dr. Saleemul Huq

Director of the International Centre for Climate Change & Development (ICCCAD)

Whilst human development can be traced in a positive upward trend, evidence shows that many advancements have come at great cost to our environment, climate and communities. This is especially true for the most vulnerable populations and places. More people than ever face severe, frequent shocks and stresses related to climate change, economic and trade uncertainties, geopolitical instability and potential conflict. These are overwhelming challenges but, as this report contends, adopting resilience strengthening approaches offer many solutions.

During the last decade and a half, I have worked with vulnerable communities around the world with a wide range of international development NGOs. Our focus has been to enhance the adaptive capacity of some of the poorest, most vulnerable people on the planet. Individuals who are most adversely affected by the impacts of climate change. Impacts they scarcely contributed to causing.

In my home country of Bangladesh, we have been particularly affected by rising sea levels and the multitude of crises that poses for coastal living and livelihoods. One consequence being a salinity increase in low-lying coastal areas, disrupting our traditional rice varieties which simply cannot grow any more.

In response, we were forced to use our ingenuity and unleash new innovations in Bangladesh. National rice research scientists developed around a dozen saline tolerant rice varieties. These varieties were taken to market and are now available to tens of millions of farmers and being grown across tens of thousands of hectares of land. This is one example of how a vulnerable country has transitioned from seeing ourselves as victims of climate change to instead becoming resilience innovators and problem solvers. This approach is increasingly becoming a prevailing paradigm shift. It is one that we must continue to nurture, throwing out the concept of victimhood and reframing our work and thinking around the concept of agency. Sharing knowledge and expertise from all corners of the world will help make us truly resilient.

The Global Resilience Partnership (GRP) community is an indispensable convening space for all of us working to build resilience. The partnership draws together expertise from communities at the frontlines of climate change with academia, policymakers, business and practitioners. It holistically designs and advances knowledge, practice and policy to build resilience in the communities and landscapes that need it the most.

This GRP Resilience Insights report distils and illuminates the latest evidence from across the breadth of the GRP. It is not intended as a definitive one size fits all compendium of solutions. It offers a synthesis of learnings from years of cross sectorial resilience work that can inform and strengthen future resilience programming at a time when it is more important than ever.

I am proud to stand alongside millions of others who are impatient to make change happen at the scales necessary. We are dealing with a planetary challenge that is impacting humanity in ways we are not sufficiently prepared to withstand. The financial and human cost of inaction is far greater than the cost of action. We must continue to work for change and this report is one of the urgent tools to support us on that journey.

Dr. Saleemul Huq
Director of the International Centre for Climate Change & Development (ICCCAD)
Advisory Board Member, Global Resilience Partnership (GRP)
Senior Fellow, Climate Change, International Institute for Environment and Development (IIED)

Executive summary

Why resilience?

The world is increasingly unpredictable with more people than ever facing more severe and frequent shocks and stresses related to climate change, economic and trade uncertainties, geopolitical instability and potential conflict. 100 million people are already at risk of being pushed into poverty by climate change by 2030, particularly in sub-Saharan Africa and South Asia, increasing to 720 million by 2050. The number of people experiencing severe food insecurity increased by over 120 million since 2014. This increase has primarily been ascribed to a combination of factors, including increases in extreme weather events and political instability.

These are overwhelming challenges but, as this report contends, adopting resilience strengthening approaches could offer a solution. A shift towards resilience-based approaches that promote diversity in all its forms, seek non-linear transformational change, enable local actors to transform their own futures, and tackle distant drivers alongside local, context-specific ones is urgently required.

Resilience is seen as a unifying concept which can bring together development and humanitarian sectors, helping to move from protracted and recurrent crises to longer term sustainable 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?

This report distils and illuminates the latest evidence from across the breadth of the Global Resilience Partnership (GRP) to answer that question and inform future resilience programming at a time when it is more important than ever.

The Global Resilience Partnership

The Global Resilience Partnership (GRP) is a partnership of public and private organizations joining forces towards a resilient, sustainable and prosperous future for vulnerable people and places. GRP believes that resilience underpins sustainable development in an increasingly unpredictable world. We envision a world where vulnerable people and places are able to thrive in the face of surprise, uncertainty and change.

GRP defines resilience as having the capacity to persist, adapt, and transform in the face of change.

GRP understands 'persistence' as an absolute necessity to avoid collapsing in the face of shocks and stresses; 'adaptation' as maintaining the same livelihood base or ecosystem setting and continuing to develop; and finally - the most important for GRP in its resilience programming ambitions - 'transformation' as exploring new sources of livelihoods, new ways of stewarding our ecosystems and governing our planet in an equitable way.

Making sustainable development a reality and meeting the pledge to 'leave no-one behind' will require a resilience approach that empowers vulnerable societies to transform their futures in the face of uncertainty, shocks and surprises. Assumptions about stability and of linear, incremental change are no longer valid. This requires novel and innovative approaches that go beyond reactive responses and embrace approaches that are proactive, systemic and transformative in nature. GRP responds by collaboratively designing and advancing knowledge, programs, policy and innovations that build resilience for the communities and landscapes that need it the most.

GRP is comprised of around fifty partners spanning academia, policy think tanks, bilateral and multilateral development institutions, global and local Civil Society Organizations, and the private sector. The GRP achieves collective impact by adding value to the work of its individual partners in four main ways:

- **Providing a safe space to innovate, test and rapidly scale:** GRP surfaces and tests resilience innovations and incubates new ideas by designing and running innovation challenges and supporting peer-to-peer learning on innovation.
- **Promoting shared learning and capacity development:** GRP works to ensure long-term capacity and institution building for transformative change by harnessing the best expertise, experience and evidence on resilience.
- **Convening diverse voices to shape policy and investment:** GRP builds networks and leverages opportunities for policy engagement and investment brokering, ensuring that the most vulnerable are at the center of the dialogue.
- **Advancing collective understanding and knowledge about resilience:** GRP coordinates and translates state of the art resilience knowledge for its partners and the wider resilience community.

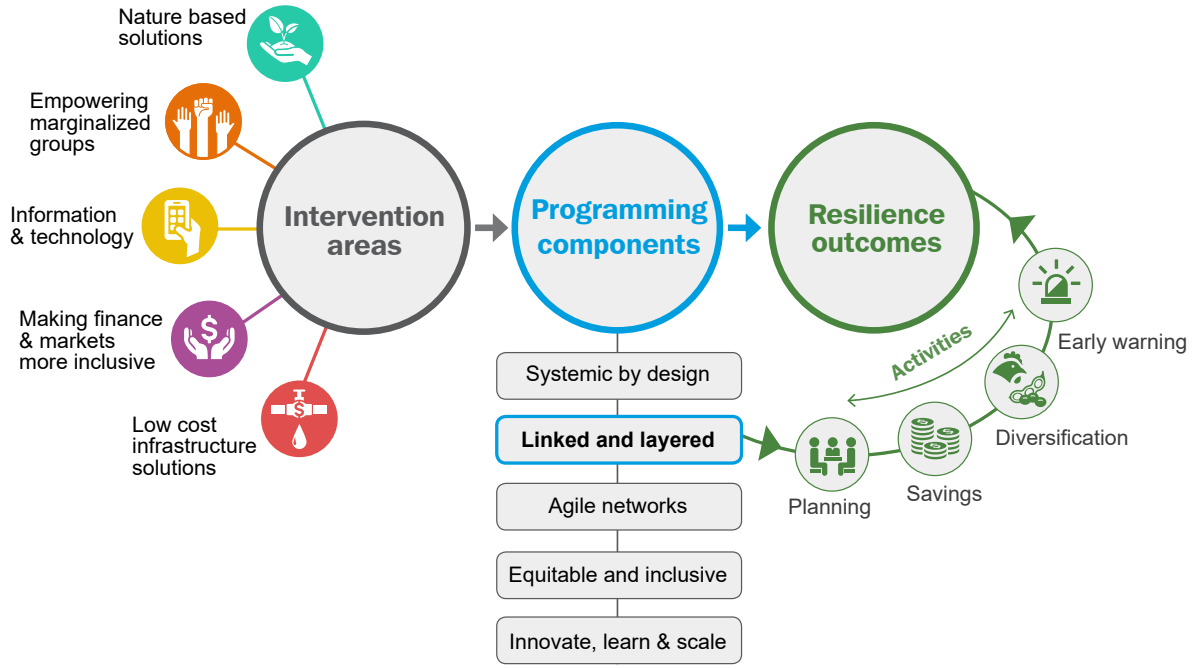
Collecting the most compelling evidence from across the partnership

The UN Secretary General's Climate Action Summit and the Global Commission on Adaptation represent important milestones and initiatives in 2019. This is therefore a critical moment in terms of harvesting evidence from resilience interventions and influencing political processes. It is essential to increase attention and investment in resilience, and further our knowledge on what policies, practices and innovations are effective. GRP has therefore invested in generating evidence and learning on resilience programming from across the whole partnership.

This report is the result of that investment and includes evidence from GRP and partner resilience programs. GRP has overseen two challenge rounds to date: The USAID Global Resilience Challenge and the Z Zurich Foundation Water Window Challenge, which has a particular focus on resilience to flood-related issues. The report further builds on evidence from good practice Challenge Fund management based on GRP's experience and a literature review. The report also draws on the most compelling results from selected high-quality evidence from 42 programs from across the partnership, which represents some of the most advanced resilience enhancing efforts from around the world. In total more than 150 reports, publications and program documents were reviewed and synthesized.

Key Findings

The figure below summarizes how the main findings are organized – the most impactful intervention areas and a set of program components which must be considered for a resilience program to be effective. It also provides a practical example of activities that lead to resilience outcomes under the component.



Summary of the linkage between resilience programming components, intervention areas and layered & Linked packages of activities on a pathway towards resilience building

What's working to enhance resilience?

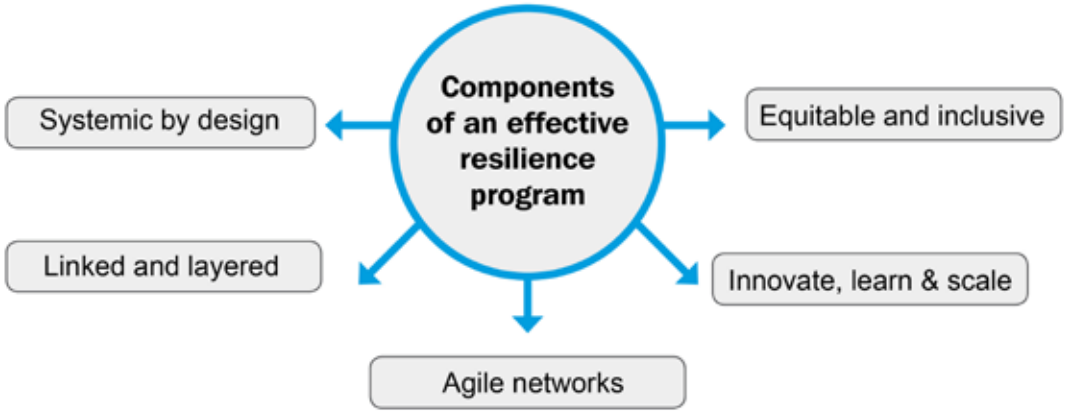
There is solid evidence from the GRP Innovation Challenges that suggests projects have supported people to be more resilient to the threats they faced. Through the Challenges, GRP worked with 22 projects and 21 grantee consortia in 16 countries across sub-Saharan Africa and South and Southeast Asia – supporting over 5.7 million people through resilience interventions. There is strong evidence based on robust methods that long term and established GRP partner programs have delivered resilience outcomes in the face of shocks or stresses. In some cases, there is also evidence that these outcomes or capacities have protected development gains such as food security in the face of climate impacts.

Evidence from across the partnership suggests that there is no single solution to building resilience. Instead, it is often a combination or package of interventions from which resilient outcomes emerge. However, the evidence gathered points to a common set of intervention areas which were used to leverage multiple resilience and well-being outcomes. The table below provides a summary of these intervention areas and provides examples of some of the projects and programs which have produced results in terms of enhancing resilience. Full details can be found in Section 3 of the main report.

Intervention	Example
Nature Based Solutions: Nature based solutions have the power to deliver multiple resilience benefits and are more adaptive to shocks and stresses than 'grey infrastructure' buffering the worst effects of shocks and providing longer term benefits. Watch video	**Seacology** has worked to build resilience through the conservation of mangroves among vulnerable communities in Northern and Eastern Sri Lanka. The project specifically focused on vulnerable women, particularly those in single-income households, and set up 347 new women-led community-based organizations (CBOs) to deliver training in livelihoods, provide access to microloans to support those new livelihoods and provide awareness-raising and strategies to conserve mangroves. The project is resulting not only in more resilient livelihoods and the conservation of mangroves but also in community-strengthening and the empowerment of women.
Empowering marginalized groups: Inclusive programs that target marginalized and excluded groups, including women and children and people with disabilities, are a central theme across the report and essential for equitable and sustainable solutions. Watch video	**Mahila Housing Trust's** work in India, Nepal and Bangladesh focuses on women's empowerment as a way of increasing resilience. The project saw women's Community Action Groups (CAG) creating positive change, including improvements in water quantity and quality, and improvements in daily living conditions, including reductions in vulnerability relative to the pre-intervention period. MHT supported 135,275 people by establishing 114 women-led CAGs with 1,355 women and 249 youth representatives in 7 cities of South Asia. This mobilized 27,055 slum families into community-based organizations. As a result, 35% of households involved in the project have become less vulnerable to climate-related risks.
Information and Technology: The provision of climate and weather information is critical for any climate resilience program. Where climate variability is not the major risk, access to accurate and usable information is still critical, for example on market signals including volatility in market prices or agricultural extension. Watch video	**Managing Risk through Economic Development (MRED)** worked through community-level Disaster Management Committees in target communities in Nepal, as a way to adopt practices for hazard preparedness, early warning and contingency planning. 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 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.
Making finance and markets inclusive: Providing access to innovative financial services can improve communities' ability to plan for, respond to and adapt to the threats they face. Watch video	**Mercy Corps** Taking Risk out of Agricultural Trade for Relief and Development Enhanced with Resilience (TRADER) designed an innovative sharia compliant financial product to support improved market functions within the livestock system in Wajir, Kenya. The **International Food Policy Research Institute** led Satellite Technologies, Innovative and Smart Financing for Food Security (SATISFy) project proposed a market-based innovative risk management solution in the form of risk-contingent credit (RCC), a linked financial product that embeds within its structure insurance protection.
Low Cost infrastructure: Affordable and low technology infrastructure solutions which can be widely scaled out can reduce exposure to identified risks. Watch video	**MetaMeta** has rolled out the Roads for Resilience approach in Ethiopia and Kenya, to implement road water management practices that capture rainwater runoff from roads for agriculture. The project has benefited over 3 million people by putting in place road water management systems in Ethiopia. Monitoring showed that despite a drought, crop yields among farmers practicing water harvesting were higher than in previous years, which had higher rainfall. At the same time, road water harvesting ponds provided vital sources of water for livestock, thus reducing potential losses.

What makes a resilience program different? What makes it effective?

A defining characteristic of resilience programs, which makes them different from regular development programs, is a holistic focus on the unpredictable and systemic nature of shocks and stresses and the risks they pose to communities and development outcomes. This often situates resilience programs at the heart of humanities most intractable issues, working with the most marginalized and vulnerable in the most volatile contexts. Based on our review of the evidence from across the partnership, we found a set of common program components that were necessary for resilience programs to be effective – see diagram below.



To help communities prepare and respond to anticipated as well as unpredictable shocks and stresses, resilience programs have to be intentional in their design to:

- **Be systemic:** understand the different levels, actors, enablers, constraints and resources in a social-ecological system, which can combine to influence risk and impact.
- **Layer and link interventions to manage risk:** through careful design and arrangement of activities, build program redundancy and agility in the face of unpredictability.
- **Create dynamic and agile networks**: brokering access to hard-to-reach groups and forming key partnerships to increase changes of longer-term sustainability.
- **Equitable and inclusive:** promote decentralized decision making to make front-and-center the needs and capacities of the most vulnerable, excluded and marginalized in program design.
- **Innovate, learn and scale:** cycles of innovating, testing, learning and adapting are required to deliver lasting change beyond the boundaries of programs and funding schemes.

As these program components illustrate, the unpredictable and volatile context of resilience work demands innovative program design. This has been met with a “learning by doing” approach in many of the programs we reviewed. It requires a mindset that accepts that not every investment will deliver the intended results – it is important that we focus on the learning that comes from both effective and challenging resilience programming, and this requires new approaches to assessing the impact of resilience work, beyond short and medium time frames.

Informing future resilience programs

There is more need than ever for resilience programs, projects and policies that can tackle multiple risks in an increasingly unpredictable world. New sources of funding are required and these need to be flexible, predictable and long-term. Innovative financing models which combine public and private finance are needed and these require a better understanding of the benefits a resilience approach can bring to bridge the gap between practice and funding.

The evidence points to some important recommendations to take into account when planning or implementing resilience programs. These link to the four main ways in which GRP is adding value to the work of its individual partners. They spell out specific measures or design consideration which should be taken into account for each:

Provide a safe space to innovate, test and rapidly scale

RECOMMENDATION 1 - Be transformative by design: Transformative change can take time to deliver but there are also quick wins and immediate support which can be delivered quickly. Ensuring that the former doesn't hamper the latter is critical and central to resilience programming – a focus on meeting needs today may lock in behaviors and technologies vulnerable to tomorrows shocks. Programs need to address drivers and focus on the underlying factors of vulnerability to increase the chance of transformative change. Implementers need to build this into resilience program design. Donors need to consider mandating this as part of award criteria.

RECOMMENDATION 2 - Plan and invest for the long-term: Bringing about sustainable and systemic change requires greater planning horizons. Two or three years are not sufficient. There is a need to move beyond projects to whole system interventions. These can be hybrid modalities such as combining a challenge fund with longer term phased grant funding and more systemic policy influencing work at different levels of the system and planning cycle. Doing this can reduce risk exposure to failure by building in stage gates while still making longer term commitments.

RECOMMENDATION 3 - Move to rapidly scale up innovations that work and adapt or abandon those that don't: There is now sufficient evidence from almost a decade of programs aimed at enhancing resilience to identify solutions which work, some of which have been presented in this report. These need to be replicated and scaled to reach more people in more contexts.

Promote shared learning and capacity development

RECOMMENDATION 4 – Build capacity and create systems to support shared learning. Without understanding what is working well and what isn't in a constantly changing environment, it will not be possible to support program components such as working flexibly, linking effective interventions or ensuring inclusion. This requires improving capacity building and learning across institutions, practitioners and geographies. This should ensure the best available knowledge and expertise is used to design new resilience programs and incorporated into national and regional policies and plans.

RECOMMENDATION 5 – Encourage genuine community led planning and co-design: Wherever possible, the target community should be involved in the design of the project or intervention. This will help to surface their priority needs, identify their particular vulnerabilities and increase the chances of sustainability beyond the project lifetime. Reaching the most vulnerable is not easy and requires commitment from implementers and funders. It may also take longer to do and to deliver results.

RECOMMENDATION 6 - Move from gender sensitive to transformative: A policy, program or project that considers and aims to address the specific needs, interests, capacities and contexts for women and men can be considered gender sensitive. However, to be gender transformative and support lasting change programs should aim to tackle gender relations in favor of the equal sharing of power by women and men. This involves revising the socio-cultural, political and economic structures and norms that underpin inequalities. There is a significant opportunity in moving from ensuring equal rights to seeing empowered women as powerful agents of transformative change.

Convene diverse voices to shape policy and investment

RECOMMENDATION 7 – Build agile partnerships and networks across scales. Single organizations are highly unlikely to be able to deliver all the services and activities required for effective resilience building. Access to the most vulnerable and to organizations and institutions necessary to reach them can be achieved through effective partnership – all projects have

demonstrated the importance of this. The nature and quality of networks is important and successful resilience interventions need to be explicit early in the design process about what gaps or constraints there are that may be met by a key partner.

RECOMMENDATION 8 - Strategically engage private and public partners: Many national and local government institutions, businesses and civil society organizations are building resilience into their policies, programs, investments and plans. To realize their commitments these diverse stakeholders will need to be convened on how to invest in resilience for development. While there is considerable support for climate action on mitigation and low carbon development, there is limited coordination and convening space to shape policy and investments around resilience and climate adaptation.

Advance collective understanding and knowledge about resilience

RECOMMENDATION 9 - Address gaps in resilience knowledge: The demand to increase resilience action and investment is growing and filling knowledge and evidence gaps is important if we are to help build a resilient future. This report is based on a limited number of resilience programs, designed and implemented by GRP partners. We recognize that there are ways of resilience programming yet unexplored by the partnership – and acknowledge the myriad inherent limitations in producing a report on a topic as wide as 'resilience programming'. Creating a fair, prosperous world that maintains and strengthens planet Earth's life-support system requires transformative changes. Together, the partnership can explore opportunities for change by embedding some of the aspects identified into programming designs and implementations. However, substantial additional research is needed.

1 Why resilience?

1.1 Resilience: a solution for a global challenge?

The world is increasingly unpredictable with more people than ever facing more severe and frequent shocks and stresses related to climate change, economic and trade uncertainties, geopolitical instability and potential conflict. The poorest people in the world are likely to be most exposed to this increased volatility and uncertainty. Due to the effects of climate change, 100 million people are already at risk of being pushed into poverty by 2030, particularly in sub-Saharan Africa and South Asia, surging to 720 million by 2050. The number of people experiencing severe food insecurity has increased by over 120 million since 2014, which has been ascribed to a combination of factors including the growing number of extreme weather events and political instability leading to potential conflict.

Increasing pressures on health, food security, water supplies, and economic growth are already detectable. Agricultural systems, soil health and productivity are showing signs of severe stress and possibly collapse with unpredictable impacts on already strained food systems. Natural ecosystems – both terrestrial and aquatic – are under threat and by compromising them it also compromises the services they provide to humanity and further exacerbates the impacts of climate change. Importantly, the impacts of climate change do not happen in isolation and often they present societal challenges through complex interrelationships with other drivers. Spanning global to local, inequalities in processes of trade, land use and resource rights, loss of biodiversity and degradation of ecosystems all present significant challenges to the prosperity of people – and the future of the planet. Gender-based inequality is particularly problematic, while women can be the most powerful agents of change.

Alongside action to limit emissions and transform towards low carbon development pathways, urgent action on enhancing resilience is vital for achieving nearly all of the Sustainable Development Goals (SDGs). Specifically, there is a need for a fundamental shift towards resilience-based approaches that promote risk management and diversity in all its forms, seek non-linear transformational change, support local actors to transform their own futures, and tackle distant drivers alongside local, context-specific ones. Now, more than ever, there is an urgent imperative to identify resilience solutions and innovations that can be rapidly scaled to address these global challenges.

1.2 Purpose and scope of the report

This report aims to distil and illuminate the latest evidence from the Global Resilience Partnership (GRP) to inform future resilience programming at this critical time for humanity and the environment.

The report draws together evidence generated across the partnership. It includes, but is not limited to, the evidence generated from synthesizing results from GRP's two Innovation Challenge Funds.[1] This forms the basis for GRP's direct contribution to the global evidence base. However, GRP also recognizes the wealth of evidence generated by its partners. Through a literature review and evidence call, evidence from some of the most innovative and impactful work in the global resilience field has been compiled. This has resulted in the production of two separate evidence review papers: one investigates the potential role of challenge funds as a modality to drive innovation in the field of resilience, and the other provides a broader review of different programs and the results they have delivered. These separate, contributing documents are referenced throughout and form the evidence base of the insights offered.

The Resilience Measurement, Evidence and Learning Community of Practice (RMEL CoP) conference in New Orleans (Nov 2018) clearly identified the opportunity to share lessons from these programs to shape future investments. For example, the commitment of the WBG to increase its investments into climate action (including resilience) is a clear signal of increased programming in this area. The challenge is how private and public investments can deliver increased and sustainable social, environmental and economic outcomes by building resilience, particularly in the most vulnerable countries and those affected by protracted crises. The UN Secretary General's Climate Summit and the Global Commission on Adaptation represent important milestones and initiatives in 2019 to advance the case for resilience programming and best practice.

Furthermore, the report includes testimony from those directly involved in resilience work, including cutting edge researcher, funders, and project implementers on the ground as well as community voices.

1.3 Who is this report for?

This report has been written for an audience united by an interest in understanding to what extent, where, how and in what ways resilience has been built. It will be of particular interest to those who are considering investing in resilience-building efforts, whether a multilateral agency, national or sub-national government, philanthropic organization or the private sector. It will provide them with some of the most compelling evidence about what is working in building resilience to making the case for future investment. It will also make a useful contribution to those who have been or are planning to implement or evaluate resilience work by providing them with practical design considerations linked to the recommendations.

1.4 Structure of the report

The report is set to answer three central and interrelated questions which have been identified by the GRP, namely:

1. How have GRP partners supported the implementation of resilience building?

Here we present and discuss the ways in which GRP and its partners have gone about resilience building, and look at the modalities used and identify some of the key differences or common characteristics.

2. What progress have GRP partner implementation activities made towards enhancing resilience?

Here we tease out what the approaches considered in the report delivered in terms of results, and identify their challenges together with some of the most effective approaches at delivering equitable impactful results.

1 A series of competitions hosted by the Global Resilience Partnership to tackle the world's most intractable problems. Through the Challenges, the Resilience Partnership surfaces bold, innovative ideas with real-world impact that may start small, but have the potential to scale up.

3. Where and how do we need to strengthen resilience programming going forward?

Based on the insights revealed from the first two questions, we identify what gaps in knowledge and practice remain and how these might be filled by future commitments and investments. We propose ways in which the evidence gathered and lessons learned can help shape a positive agenda for future investments to transform the lives of some of the world's most vulnerable groups.

The report is structured in a way to allow the reader to navigate to particular sections based on their interest:

- **Section 2:** Introduces the Global Resilience Partnership and details where the evidence for this report has been drawn from, including specific details of the GRP Innovation Challenge Funds and the wider partner programs referenced.
- **Section 3:** Highlights the major successes from across the GRP challenge funds and wider partnerships. It describes the programs and different approaches and innovative solutions that have been used towards enhancing resilience.
- **Section 4:** Highlights some of the common components of an effective resilience program based on the evidence collated.
- **Section 5:** Provides recommendations and design considerations for future resilience programming and initiatives.
- **Section 6:** Reflects on the evidence discussed and brings to the fore outstanding challenges and gaps together with ways in which these can be addressed.

INTERVIEW INSIGHTS – A climate wise woman

Constance Okollet from Oskuru United Women's (OWN) Network - Tororo, Uganda

Watch video

Constance Okollet lives in the Tororo district of Eastern Uganda, and is a self-described peasant farmer. As the chairperson for OWN, a consortium of approximately 1200 small women's groups working on education, community health and nutrition, Constance was selected by Oxfam to attend a meeting in Kampala in which she learned about climate change. Deeply shocked, Constance began speaking and organizing the women in her network to explain climate change and the need for adaptation, particularly in their agricultural practices, to ensure community resilience. Constance has spoken internationally at public events and high-level forums in company of Desmond Tutu, Mary Robinson, Connie Hedegaard and other high-ranking leaders with a mesmerizing storytelling ability that galvanized her listeners.

How has the network built resilience in your community? We are 1,200 small groups representing more than 5,000 farmers. We work around food production and security, agricultural savings and credit, health, tree planting and education. We produce food surplus and the surplus we sell for our basic requirements, because we rely on agriculture for everything. And from 2007 we started a lot of advocacy on climate change issues. This network has made people strong on the ground. In 2007, people had to leave their homes because villages were washed away. Diarrhea had broken out where people were taking refuge. That is when we started saying 'But what is this? Can we manage? Can you manage actually at individual level?' 'No.' 'Can we come up with a group?' 'Yes.' Then we came up with the committee and we started spreading the word through home improvement campaigns. The home improvement campaigns are to prepare homes before the disaster comes. We visit homes. 'Do you have a pit latrine? Do you have a good compound? Do you have a lock to your home? Do you have a strong house? Do you have a kitchen? Do you have animal houses?' Because those are some of the things to take into account when floods come, and the sickness enters. So we moved round doing that campaign and at the end of the day you find people are benefiting out of it, because most people now don't move out from their homes, they just stay within their homes. If the land is soaked or the floods are there, they just build trenches around their houses so the water goes, and it is helping and it is working. And we tell them about tree planting. 'You walk for a long distance to look for firewood, to look for water, now what we do, we say "can you plant any tree?" The tree that you plant will help you for food, for cooking, for shade, for the oxygen and many other things, because we need those trees. It will help us pull the rains, it will help us with soil erosion. And then we talk about the clean energy, so now we don't have firewood, what can we do about this? It is helping and it is working, yes.

What have been the main successes and the main challenges faced in implementing your resilience innovations within the network? My success is more people are now joining our network. More people admit they agree with what we are saying, with what we are doing, because they are seeing the results. They are seeing the outcomes. And the challenge is we are doing this on our own and it is a bit heavy for us in terms of mobility because we have to move from this end to five miles away, you need money, there is no money, you have to go, and the other group is calling you "come and help" maybe on bookkeeping because we train them on bookkeeping and many other things. "Can you please come and check our group?" So you have to go because you have to motivate them. Another main challenge is training, the capacity building of members. We want trainings that can help us boost our land, like compost manure, mulching and irrigation systems. All those skills we don't have. You find that we are trying on our own and the government, when we go to them, they only have one extension worker at the sub-county, she cannot manage it all. Because in my group I may call her, the other side they may call her, and she may end up not coming. Yes, those are our challenges, but to tell you the truth people are appreciating and joining up with us and moving with us.

How have your community members, been involved in making decisions around the projects

that you've been involved in? And what kind of value do you think there's been in that involvement? That one now comes to gender. We started as a women's group. At that time when we started women were not even allowed to speak, to talk, to do anything. No, you are there at home, do everything at home. It is the men who talk, to decide, to do decision making in a home. But from the time we started, we partner with the police family unit and other organizations. We started telling them about what a woman can do, what a man can do. Now this has come to be about what we can do together. Now we've started working together in decision making, even at the government level. When they are calling a meeting we go, you find most women these days go for those meetings and they say "no, here we want that, there we want maybe a school, more classes for our children" So there's that involvement in decision making by the women. People tell me that there's going to be a meeting somewhere, I call the leaders, and you'll find that the meeting is full participation by all the members. And you'll find that those are the things that the government will implement, yes, from their decisions at local level. And through the small savings group they also have money in their pockets. Savings from selling small fish, tomatoes and onions. So there is a lot of change in my community.

If we think of climate change and weather variability, how is that affecting Tororo in Uganda? Food is expensive because when the season comes, either you will harvest or you will not harvest. And for people who will harvest, they will sell almost everything, maybe for school fees, for their health, to buy maybe a uniform for the child. Then when you buy food later it is more expensive than when you sold it. It is difficult for a local woman to live with this pressure. And when it comes to water, it's such a long distance they walk to look for water during the dry season. When they move, they look for where the bore holes are. So you will find a queue, a line of women sitting, children sitting, men are sitting, you wait for your water. That one is another challenge for women; it's a problem.

Do you think that there is a need to rethink development practice and what role could resilience play in that? There are some areas that we see if we could get assistance. These people, if they can be pushed up to a certain level, they can change faster than they are changing now, which is slowly, slowly, slowly. Now like the ways that things are being done it may not bring development in my community. Because you have funds, you want me to apply, I don't know how to have the good papers, then you will not accept my application because I don't know how to do it. And at the grass roots I'm doing something very good and very right, but people don't see that. Now about resilience, if things are done in the correct way, if they are given all the requirements they need, you will find even if climate change is there they will be happy. Although the drought will be long and whatever, they will be having food. If your bore hole is dug, they'll be having the water. They are now planting their own trees, they will be having the firewood, they will be having a shed, the heat that is there will reduce. So many things to be done.

2 The Global Resilience Partnership

2.1 Who we are

The Global Resilience Partnership (GRP) is a partnership of public and private organizations joining forces towards a resilient, sustainable and prosperous future for vulnerable people and places. The premise of GRP is that resilience underpins sustainable development in an increasingly unpredictable world. We envision a world where vulnerable people and places are able to thrive in the face of surprise, uncertainty and change.

Making sustainable development a reality and meeting the pledge to 'leave no-one behind' will require a resilience approach that empowers vulnerable societies to transform their futures in the face of uncertainty, shocks and surprises. Assumptions about stability and of linear, incremental change are no longer valid. Instead, novel and innovative approaches that go beyond reactive responses and embrace approaches that are proactive, systemic and transformative in nature are required. GRP responds by collaboratively designing and advancing knowledge, programs, policy and innovations that build resilience for the communities and landscapes that need it the most.

GRP's is comprised of around 50 partners, spanning academia, policy think tanks, bilateral and multilateral development institutions, global and local Civil Society Organizations, and the private sector. The GRP achieves collective impact by adding value to the work of its individual partners in four main ways:

Providing a safe space to innovate, test and rapidly scale:

Great ideas can be born anywhere but need the right environment to thrive. There is a need for a safe space to test and scale disruptive, bold ideas for doing development differently. GRP surfaces and tests resilience innovations and incubates new ideas by designing and running innovation challenges with or on behalf of partners and supporting peer-to-peer learning on innovation. We empower local actors to lead problem identification and solution development, seeking to fund ideas that are "off the beaten track", daring in premise and clearly different from current approaches.

Promoting shared learning and capacity development

How communities and countries build resilience will be dependent upon their capacity to anticipate, plan and take action to respond to a wide range of risks. This is particularly the case for least developing countries. GRP works with our partners, communities, civil society and national governments to help ensure their long-term capacity and institutions are built for transformative

change. To do so we harness the best expertise, experience and evidence on resilience and accelerate learning across institutions, practitioners and geographies.

Convening diverse voices to shape policy and investment

GRP convenes its partners, builds networks and leverages opportunities for engagement to advance the case for resilience. GRP pays particular attention to ensure that diverse voices, including the most vulnerable who are at the frontline of resilience challenges, are at the center of this dialogue. Working with the public and private sector, GRP fosters and develops new mechanisms for investment into resilience. GRP also acts as a broker to scale up public and private investment into resilience innovations. GRP aims to be the 'connective tissue' among its partners, creating a critical mass wherein results will be greater than the sum of the constituent parts.

Advancing the collective understanding and knowledge about resilience

GRP acts as a global platform for partners to access, co-create and advance the latest knowledge on resilience for development. GRP strives to become the 'go to place' for the field of applied resilience. To do this, GRP coordinates, convenes and translates state of the art resilience knowledge for its partners and the wider resilience community.

2.2 What resilience means for us

The most promising solutions are not single answers to isolated challenges. Instead, they recognize that sustainable development relies on addressing multiple factors through building and then multiplying resilience.

GRP defines resilience as having the capacity to persist, adapt and transform in the face of change.

GRP understands 'persistence' as an absolute necessity to avoid collapsing in the face of shocks and stresses; 'adaptation' as maintaining the same livelihood base or ecosystem setting and continuing to develop and finally, the most important for GRP in its resilience programming ambitions, 'transformation' as exploring new sources of livelihoods, new ways of stewarding our ecosystems and governing our planet in an equitable way.

In the context of sustainable development, resilience means the ability of vulnerable people and communities to navigate shocks and stresses while continuing to improve their well-being. In an environmental context, it means moving beyond incremental climate mitigation and adaptation approaches towards proactive strategies that empower societies to transform their futures in the face of increased volatility and uncertainty.

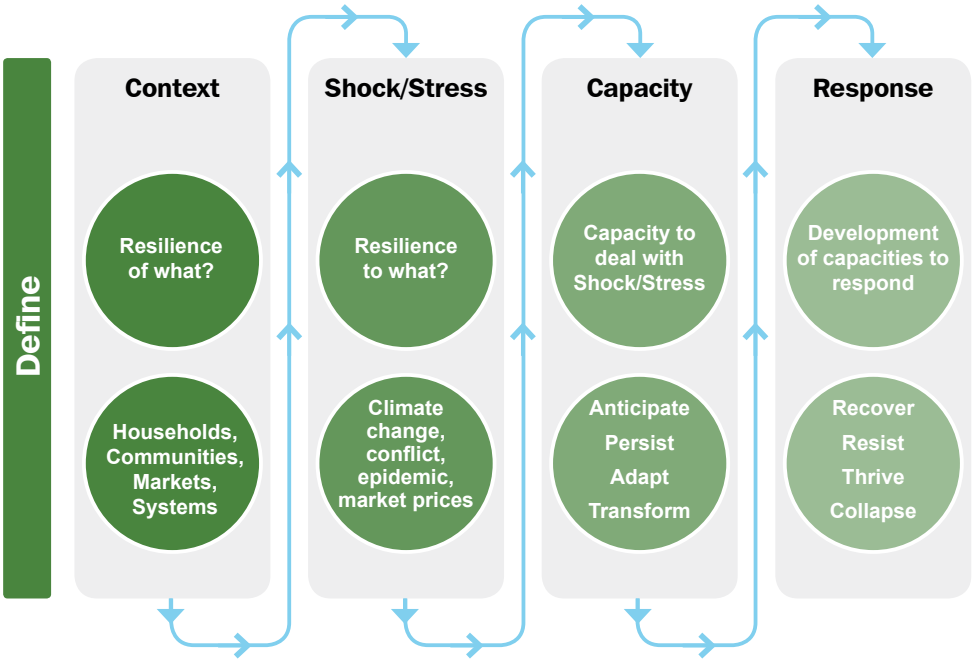
Resilience is seen as a unifying concept that can bring together development and humanitarian sectors, helping to move from protracted crises to longer-term development for the world's poorest and most vulnerable people. But what is it about resilience programs that means they go beyond good, holistic development or timely humanitarian response? To address this, GRP developed a set of guiding principles for resilience (see Box 1). Another helpful and complementary source is the UN common guidance on resilience (UN 2018).

There is a broad range of definitions for 'resilience'. However, there is some agreement that resilience can be considered and also measured as a set of capacities which are deployed in the face of a context-specific shock or stress which brings about a certain (positive or negative) response (see Figure 1). Resilience can thus be perceived as the capacity of individuals, communities or systems to navigate shocks and stresses and continue to improve or maintain well-being. Resilience, therefore, is not an outcome in itself or a steady state that once achieved is fixed, but rather a *dynamic* concept.

Box 1: GRP resilience principles

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.

Figure 1: Generic resilience conceptualization



Resilience building is fundamentally about dealing with shocks and stresses – whether climate, market, health or conflict driven. However, only dealing with rapid shocks and stresses is no solution. Rapid and gradual changes interact, but the rapid changes tend to be more easily seen while slow changes happening under the radar can undermine a whole system. We need to rethink the types of analysis that underpin disaster risk reduction so that not only the immediate disaster situation is understood but a longer perspective is encompassed. This must include the underlying preconditions

such as social vulnerabilities and degradation of ecosystems that contribute to creating the disaster risks in the first place.

2.3 Drawing together evidence from across the partnership

GRP has generated emerging evidence and lessons learned on resilience programming. This year – 2019 – is a critical moment in terms of harvesting evidence from resilience interventions and influencing political processes. There remains a challenge to increase attention and investment in resilience, and to further our knowledge on what policies, practices and innovations are needed to build resilience. This is the gap that GRP aims to fill, and this report represents part of that effort.

There is an existing and increasing body of evidence on what works and what does not work to build resilience. This includes evidence on resilience programming from GRP partners and Innovation Challenges. GRP has overseen two challenge rounds to date: the USAID Global Resilience Challenge and the Z Zurich Foundation Water Window Challenge, which has a particular focus on resilience to flood-related issues. The GRP Innovation Challenge process has identified, co-designed, enabled, and supported 22 projects and 21 grantee consortia in 16 countries across sub-Saharan Africa and South and Southeast Asia. More detailed descriptions of results for each challenge fund can be found here and here. Evidence from each challenge is discussed throughout the rest of this report.

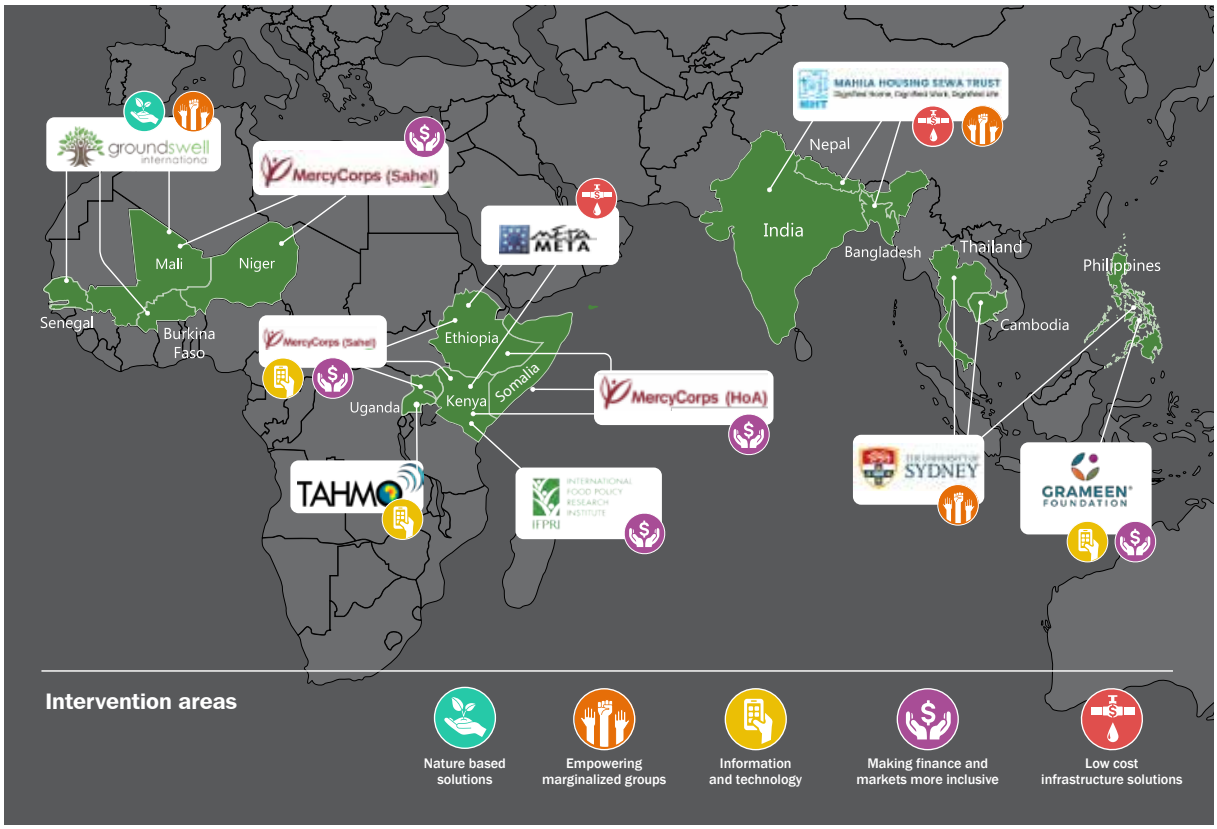
Evidence has also been drawn from across the partnership and its members including but not limited to NGO-led programs like United States Agency for International Development's (USAID) Pastoralist Areas Resilience Improvement through Market Expansion (PRIME), the UK DFID-funded Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED), and Sida-supported Guidance for Resilience in the Anthropocene: Investments for Development (GRAID). Evidence from effective partner programs and learning on Challenge Fund programming can be found here and here.

Full details of how this evidence was gathered, assimilated, and quality assured can be found in the documents which were produced to support this report and are not discussed in detail here. In summary, the Challenge Fund evidence was taken from over 50 grantee documents (Final Narrative Reports, evaluations and cost benefit analyses) which were verified and synthesized using a qualitative narrative framework. Evidence from the wider partnership was gathered directly from those member organizations and also via a wide call for evidence. The scope was limited to organizations within the partnership. Evidence from 42 programs was assessed for quality with only moderate and high quality included in the review and therefore in this report. In total over 150 documents from projects from 16 countries were reviewed.

2.3.1 Global Resilience Challenge

Ten projects focused on transforming risks around shocks and stresses experienced across the target geographies into opportunities, with the overarching objective of reaching millions of people. Funded by USAID, each grantee received up to US$1.45 million to implement and scale up their resilience solutions. Of the 10 projects, seven were implemented in sub-Saharan Africa and three in South and Southeast Asia (Figure 2). All projects work with local people and organizations to help them adapt to and cope with shocks and chronic stresses – ranging from rapid-onset climate shocks and growing urbanization to pandemics and conflict – and thrive in a more resilient future. By the end of their implementation timeframe, the 10 projects had supported over 5 million people. They provided early warning information to over 1 million people, trained 20,557 in climate change adaptation, generated US$351,860 in financial services and provided short-term agricultural training in food security to 15,955 people. See Annex 1 for a full list of projects and an overview of their key achievements and the GRP R1 Synthesis for more detail link.

Figure 2: Map showing the location of the Global Resilience Challenge Projects and the types of interventions they have used to enhance resilience



2.3.2 Water Window Challenge

The Water Window Challenge comprises 11 grantees – five in Southeast Asia, five in South Asia and one in sub-Saharan Africa (Figure 3). Water Window grantees were funded by the Z Zurich Foundation. Five of these (Danish Refugee Council (DRC), Lutheran World Relief (LWR), Mercy Corps, Practical Action and Seacology) are scale grantees receiving up to US$1 million to scale up their work and the rest are seed grantees, funded with up to US$250,000 to surface new innovations. The projects supported over 500,000 people over half of whom were women. They have carried out a combination of interventions that strengthen livelihoods with capacity building around community planning, information systems, technology and infrastructure to increase resilience. The grantees have enabled 189,362 people to use early warning systems (EWS) or climate information and have trained 16,920 people in the use of more resilient agricultural techniques, alternative livelihoods and disaster risk reduction (DRR). See Annex 2 for a full list and the GRP WW Synthesis for more detail.

2.3.3 Partner programs

In developing this report, 42 programs that were either funded or implemented by members of the GRP were reviewed to gather the best insights from the whole community. A separate report provides full details; see Figure 4 in this report for summary details of those programs. Annex 3 provides a summary of the results achieved by programs from across the partnership as well as the interventions offered. Where possible, the effectiveness of a particular intervention is provided based on robust quantitative or mixed methods data, which was prioritized as part of this review. See Figure 4 for examples of the projects discussed and the Impact Insights boxes throughout the document for insights from the latest robust resilience impact assessments.

Figure 3: Map showing the location of the Water Window Challenge Projects and the types of interventions they have used to enhance resilience

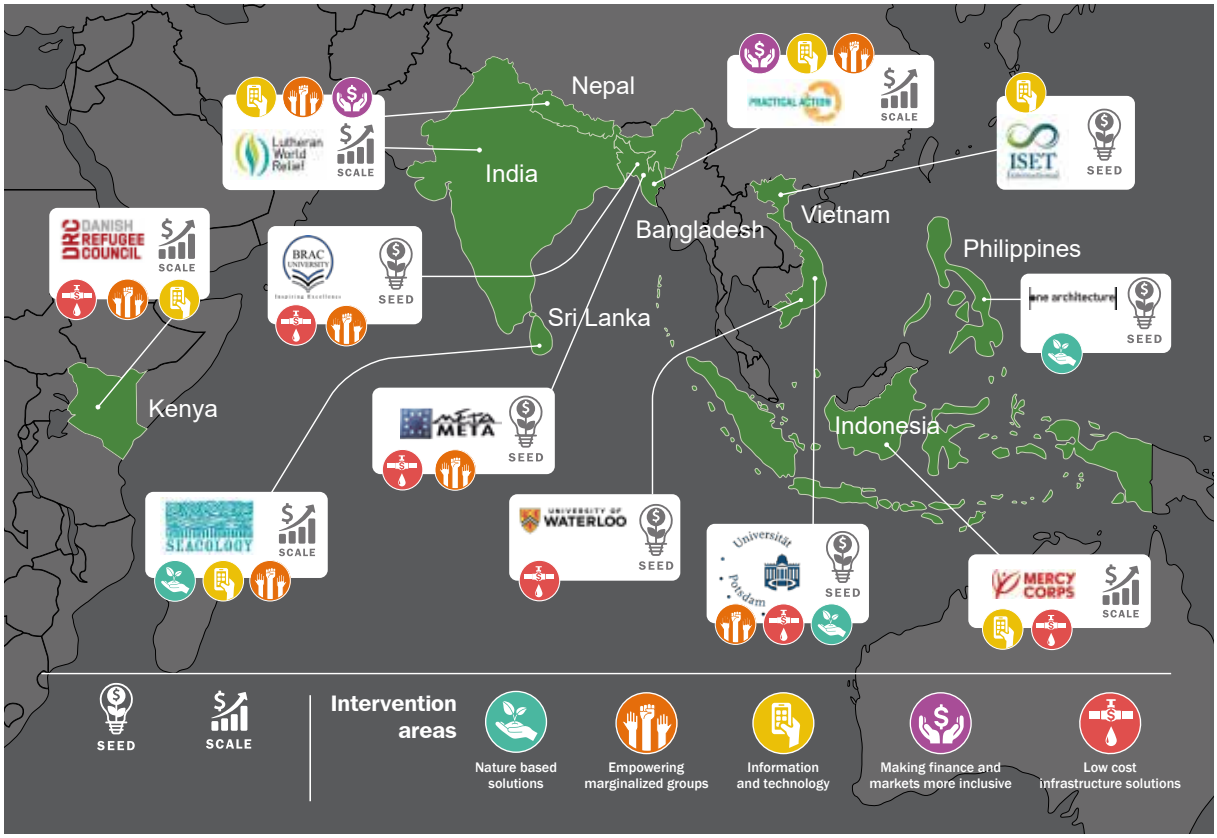
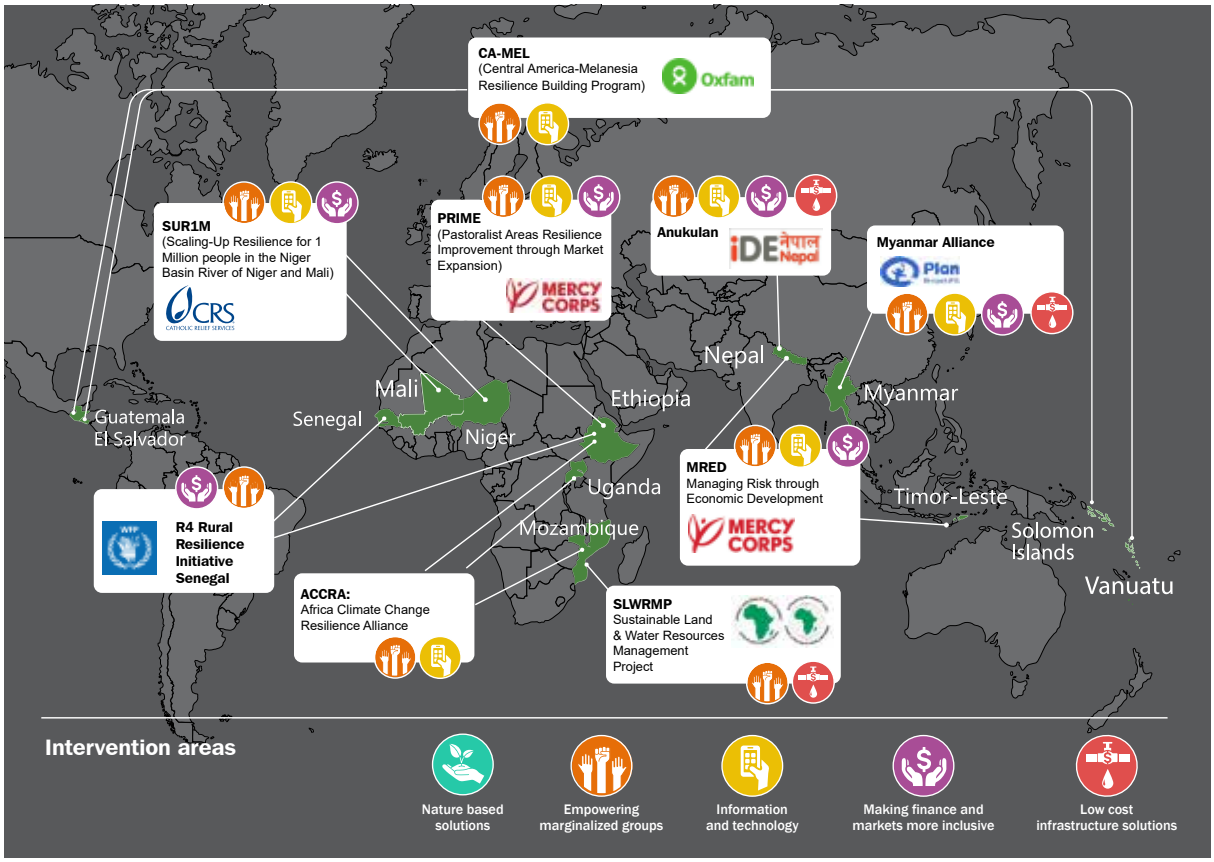


Figure 4: Map showing a selection of Partner Programmes included in this report, their location and types of interventions



INTERVIEW INSIGHTS – A partner's resilience journey

Karl Deering - CARE International, GRP Partner

Karl Deering has a background in social science and spent his early career in humanitarian response work in Africa and Asia. He has worked for various NGOs in technical, managerial and policy roles in the areas of food security, public health, agriculture and climate change. Karl is currently the senior technical advisor for Partnerships and Research in CARE USA's Food and Water Systems team - which includes particular attention to gender transformation. Karl is a member of CARE's global gender cohort and has co-authored several good practice and policy papers on gender in the context of climate change adaptation and food security.

Watch video

Could you introduce how you've been involved in resilience work? Our work is ensuring that CARE's planning is fit for purpose within the current and dynamic circumstances. I started working in humanitarian action and then moved to development work, so it's been a resilience journey. For CARE, a 'building resilience' approach represents one of three pillars of the way we work everywhere (the other two are 'inclusive governance' and 'gender equality').

What role does a resilience approach have, if any, in reshaping development practice? I do think that development practice needs a rethink, not only a rethink, but it needs new approaches, new methods. A lot of what we do is already working, but we need to move that to bigger scales. I think the resilience paradigm, the resilience opportunity is very useful because it looks across a spectrum of humanitarian risks and development challenges. It looks at anticipation of risk, absorption of risk and impacts and how to adapt to those risks, shocks and stresses; and then the transformation. I think what's appealing about resilience is that you're looking from all of the capacities that communities need in the face of risk and the opportunity that they have to transform their lives.

Could you give us an example of your work on resilience? I would say the area that we're making most obvious progress to me is around food and nutrition security. So, in high risk areas where communities are faced with shocks to their productivity, for example, we're looking at improving their capacities to anticipate risk by introducing scenario planning and better climate information. At the same time we're building their capacity to respond to a crisis, to absorb shocks and be able to respond to that. So, it's about the more classical disaster risk reduction approaches but then we are also helping them to adapt, because we're introducing tools and approaches to community planning on how to adapt their livelihoods in the face of shocks and ongoing climate stresses. A transformative approach is something that CARE has always taken as central; but it doesn't happen in sequence. We support the transformation of discriminatory social norms, customs, values and exclusionary practices (all within the non-formal sphere), and then the laws, policies, procedures and services (in the formal sphere) so that injustice and power imbalance can be addressed.

Do you have any examples of programs where transformational long-term or systemic change has happened? Across six countries in southern Africa we've learned a lot in the last two years in particular that the approaches that we're taking are leading to tangible improvements in people's lives. Their abilities to respond, to absorb, to transform and to increase their yields, for example, and incomes. In particular we are interested in gender equality outcomes, we're able to show that the approaches that we're taking are having some success. Unless we are transforming power structures and tackling the imbalance in the way services, incentives, rewards, information are delivered to women, as well as men, in an equal way then we're not really tackling the underlying cause of vulnerability.

How have you managed to identify and manage risks that the communities are exposed to as part of those resilience programs? The analysis part is critical and you have to look across all the sociocultural, as well as economic, as well as geophysical and ecological risks and potential threats that are out there. We carry out political economy analysis, but we really stress good analysis of social dynamics. We've got various tools to do that, one is the Social Analysis and Action tool, which is an approach that starts with understanding social dynamics; the norms and barriers that influence power and therefore human development at household at community levels.

What message would you give to donors or funders considering whether to invest in resilience programs? This is an opportunity because of the fact that resilience is looking across a spectrum, it gives us an opportunity to design holistic responses. At the same time I would encourage donors to look at the basics, the essential human development indicators. What is the most important intervention that we can make to reduce food and nutrition insecurity, for example? If we can't demonstrate progress against those indicators we're not doing our job. Or take SDG5. If we are not making progress in gender equality and the empowerment of women everywhere then donors need to take a serious look at investment models.

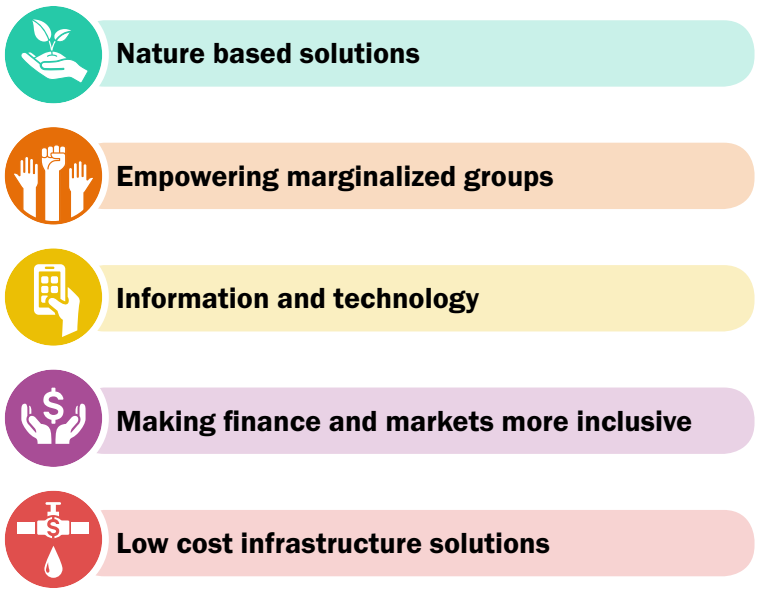
3 What have we learned so far?

In this section, we explore the ways in which GRP grantees and partners have implemented their resilience programs and some of the common features of these approaches. We also share some of the most notable results that these solutions have delivered. These examples do not represent the entirety of the evidence reviewed, with further examples provided here and here.

3.1 Resilience works: intervention areas delivering the greatest results

GRP partners and grantees demonstrated a broad range of solutions to tackling vulnerability across different geographies and in the face of multiple threats. Evidence from across the partnership suggests that there is no single solution to building resilience. Instead, it is often a combination or package of interventions from which resilient outcomes emerge. However, evidence gathered points towards a common set of intervention areas that were used to leverage multiple resilience and well-being outcomes, as depicted in Figure 5. These are explored in the following sub-sections.

Figure 5: Intervention areas evidenced across the partnership



3.1.1 Nature-based solutions: Boosting nature's buffers and benefits

Nature-based solutions have the power to deliver multiple resilience benefits, buffering the worst effects of shocks and providing longer term improvements in well-being. Resilience approaches recognize that healthy and functioning ecosystems underpin societies and economies. For example, protecting and restoring wetlands and mangroves can buffer the impacts of extreme weather events and support recovery afterwards. These coastal ecosystems can buffer sea storm surges but also serve as carbon sinks and also offer nurseries for fisheries to provide a livelihood source for local communities. The solutions presented here focus on the stewardship and in some cases restoration of the environment as a key building block of resilience.

Seacology's work to build resilience through the conservation of mangroves among vulnerable communities in Northern and Eastern Sri Lanka was recognized by them being awarded the UNFCCC Momentum of Change Award. Mangroves are critical to building resilience: they combat the effects of global climate change by absorbing up to 50 times more carbon than other types of ecosystems; they act as a natural buffer against the force of storm surges, and serve as critical nursery grounds for fish, enhancing employment opportunities. Communities were supported to come together to develop plans to conserve mangroves. The project specifically focuses on vulnerable women, particularly those in single-income households recognizing the critical role women have in securing food and water supplies for their families and communities in developing countries. As important managers of natural resources, women have the knowledge and experience to build community resilience, but they are often more severely impacted during and after disasters. The project set up 347 new women-led community-based organizations (CBOs) to deliver training in livelihoods, provide access to microloans to support those new livelihoods, and provide awareness raising strategies to conserve mangroves. The project is resulting not only in more resilient livelihoods and the conservation of mangroves, but also in community strengthening and the empowerment of women.

The **University of Potsdam** project has worked to improve the resilience of those vulnerable to flooding in the Thua Thien Hue Province of Vietnam. The project team of 'ResilNam – Coastal' enhanced flood resilience in coastal communities by strengthening the role of women in disaster risk management and climate change adaptation through ecosystem-based adaptation (EbA) such as the restoration, conservation and sustainable management of mangroves in Southeast Asia's largest lagoon.

The **One Architecture** project in Tacloban City, the Philippines is a multi-stakeholder initiative involving the community, local and national government, the private sector, academics, and NGOs. Tacloban City was devastated by Typhoon Haiyan in 2013 and the government and communities are taking a resilience building approach to prepare for future shocks and stresses. The project implemented mangrove and beach forest restoration pilots to fill in gaps in Tacloban's green infrastructure and improve coastal protection against storm surges and flooding, while incentivizing communities to protect and maintain reforested mangrove areas. 5,847 people were supported through trainings and capacity building workshops or benefited from increased flood protection. Several insights were gained through systematically documenting challenges and opportunities, which can help enable scaling. An apt lesson learned is the importance of flexibility and willingness to adapt as opportunities arise, which is combined with the practice of cataloguing complications and unanticipated challenges.

Box 2: Protecting Sri Lanka's mangroves by empowering women

Mangrove forests protect coastal communities from floods and provide livelihoods, resources, and many other functions, but they are one of the world's most threatened ecosystems. To replant and protect mangroves, Sudeesa and Seacology engage local women. The project of is supported by the Water Window Challenge funded by the Z Zurich Foundation through GRP.

The Sri Lankan government hass partnered with Seacology and Sudeesa to launch an innovative and historic effort to make Sri Lanka the first nation to fully protect all of its mangroves. To do this, the partners are taking a three-pronged approach that incentivizes women to replant and protect mangroves; provides micro-credit to improve livelihood options; and trains women to understand the role a healthy ecosystem plays in building resilience. After the training many women see the importance of mangroves:

> **"Before we used to cut down the mangroves for firewood, but not anymore. If anyone tries to cut down the mangroves we will report it to Sudeesa – who will take action,"**
>
> says Niranjala Fernando.

The project started in 2015 and by 2020 it will have trained 15,000 women in a five-day training program that covers mangrove conservation as well as how to develop a business plan and financial planning. Those who attend the training are eligible for a microloan to put their business plan into action. The partners are working to create a transformation in how mangroves are seen and managed, by focusing on the importance of healthy, thriving mangrove ecosystems. They also provide a space for inclusive decision-making in the communities.

The goal is to help build the capacity of women to protect and restore mangroves. In doing so, the communities are enhancing and promoting ecosystem functions of mangroves, which provide environmental benefits and contribute to coastal protection, livelihoods and well-being.

A full version of the case story is available here:
https://rethink.earth/building-resilience-one-mangrove-forest-at-a-time/

3.1.2 Empowering women and marginalized groups

Inclusive programs that target marginalized and excluded groups, including women and children and people with disabilities, are essential for equitable and sustainable solutions. Women are the most vulnerable in disaster situations, but also powerful agents of change and stabilizing forces within communities.

Building resilience by empowering people

Mahila Housing Trust (MHT) supported 135,275 people by establishing a 114 women-led community action groups (CAGs) with 1,355 women and 249 adolescent/youth representatives in 7 cities of South Asia. This mobilized 27,055 slum families into community-based organizations. MHT's focus on women's empowerment as a way of increasing resilience saw women's CAGs creating positive change, including improvements in water quantity and quality and in daily living conditions. This was achieved through education, but very importantly, through empowering women to communicate with the municipal governments and organizations that could help make the changes needed to improve resilience. Building connections, both within communities through bringing women together in the CAGs ('bonding' social capital) and outside of the community ('bridging' social capital), was another important outcome of this work. The women said they felt like they knew how to connect to people

who could make a difference to their daily lives. As a result, 35% of households involved in the project have become less vulnerable to climate-related risks. MHT is a Sasakawa Award winner, recognizing its contribution to ensuring inclusive, accessible and non-discriminatory participation in disaster risk reduction activities for all sections of society, especially the poor.

The University of Sydney aimed to build knowledge and awareness around disability-inclusive disaster risk reduction (DiDRR) in Cambodia, the Philippines and Thailand, which it implemented through extensive stakeholder engagement, training and awareness-raising activities. 22,068 beneficiaries have been supported through DiDRR workshops, support activities and provision of DiDRR information. Over 900 people were trained; including people with disabilities and people from disabled people's organizations (DPOs), local and national governments and NGOs. In Thailand, this included working with the Bangkok Metropolitan Authority to build capacity amongst staff on how to deal with people with disabilities during a disaster. The project worked to achieve the engagement of government stakeholders at local and national level in adopting DiDRR policy and, as a result, high-level stakeholders including regional and national institutions, NGOs and civil society organizations in all three countries engaged with the project's mission to build knowledge and awareness around DiDRR.

In its work to increase resilience through the provision of training in more resilient agricultural practice in Bangladesh, **Practical Action** has developed and expanded the scope of 18 local women's associations, which produced positive benefits in terms of women's access to the key institutions, markets and information on pricing, and links to weather information. These benefits were subsequently disseminated throughout the community. Results indicate that project beneficiary households became more resilient in respect of improving livelihoods and developing livelihood skills in the event of flooding disasters. Examples of this include 66% of beneficiaries having access to food all year round, compared to 16% at baseline, and 55% of households having an income continuity strategy at end line compared to 33% at baseline.

By enhancing women's access to credit, land and water in Mali, Senegal and Burkina Faso, **Groundswell** aimed to empower female farmers. These efforts were brought to scale by fostering intensive 'farmer-to-farmer' learning and exchange between communities that often built on traditional farming practices, linking up with district government development programs, and fostering more effective nationwide policies and programs to build resilience. More than 9,000 households in the targeted villages adopted agro-ecological innovations, including farmer-managed natural regeneration (FMNR), rapid compost, contour rock bunds, improved land clearing, gully erosion barriers and intercropping. Some evidence suggests that yields have increased as a result of adopting these practices, households are increasing their intake of nutritious foods and that farming systems are more resilient.

Impact Insights: CARE, Nampula Adaptation to Climate Change (NACC) Project, Mozambique

Solution: 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.

Methods: Quasi-experimental: Difference in Difference, no matching. (n > 543)
Resilience measurement: Capacities and well-being
Shocks: Combined

Findings: 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.

Inclusive planning and community participation in design

The **Institute for Social and Environmental Transition – International (ISET–International)** created a participatory platform for flood risk management across two provinces, Da Nang and Quang Nam, in central Vietnam. This includes the entire river basin flood plain and its infrastructure into one modelling tool, allowing for integrated planning and decision making. ISET–International provided the necessary equipment to improve the local early flood warning systems in two communes, Dai Hong and Hoa Khuong. This included life vests, sirens, generators, flashlights and megaphones, supporting the entire population of both communes – over 23,000 people.

Many partner programs designs appear particularly aware of the need to be relevant to shock context and involve participatory hazard identification at the community level. In some instances, this is the last stage in a scaling down of vulnerability assessments from the national or transboundary level. The **World Food Programme (WFP)**, for example, uses its Three-Pronged Approach to connect actors around three levels of analysis: the national-level food security context, the sub-national Season Livelihoods Programming and the community-based planning, where local groups contribute to the design of activities to address local shocks. **Mercy Corps PAHAL, DGM** and a number of **BRACED** programs go further to either co-design activities with local communities or fund locally developed project proposals. There is widespread agreement that this can create a sense of ownership benefiting the long-term sustainability of interventions. If done within local planning structures, as the **Anukulan** program has in Nepal, this can be a transformative mechanism for formal integration (Kirkby et al., 2018).

Improving community resilience and reducing conflict through 'livestock corridors'

Pastoralism is a vital livelihood in many parts of Sahelian Africa but is also a source of resource competition and conflict. The **BRACED Livestock Mobility** project focuses on securing and equipping livestock corridors for the trans-border movement of livestock, enabling (agro-)pastoralists to manage climate variability, reach refuge areas during severe droughts, and ensure access to markets and value chains.

3.1.3 Capitalizing on information and technology opportunities

Helping communities access meteorological data and mobile phone technology, can greatly improve opportunities to self-organize and support each other. While technology is sometimes presented as a silver bullet to resilience building, GRP's experience demonstrates that technological innovations must be combined with other solutions as part of a systems approach. The provisions of accurate, timely and actionable long-term climate and shorter weather information and forecasts, for example, is critical for any climate resilience program, but also must be combined with implementation support, capacity development and farmer outreach. Where climate variability is not the major risk, access to accurate and usable information is still critical; for example, on market signals including volatility in market prices.

Mobile applications to support agricultural decision making

The **Grameen** project helped farmers to improve productivity, access financial services, expand market access, and use EWSs to control pest and disease outbreaks. Working with government, agribusiness, and financial services partners, the team leveraged mobile technology to provide coconut farmers with real-time data and services to help strengthen their businesses and reduce losses to their families due to extreme weather events and volatile markets. As a result of Grameen's SMS-based extension information received, 86% of farmers who used the feedback system reported that they had learned appropriate actions to take in the case of dry weather.

The **Producers Direct** project identified how farmers used the mobile tools 2Kuze and Wefarm as well as other forms of digital communication, such as social media (WhatsApp and Facebook). Some 66,500 smallholder farmer households used mobile tools creatively to connect with extension officers in different ways. Wefarm's peer technical support platform was shown to have improved productivity and quality. A sample of users indicated that they were satisfied with the mobile extension tools. Based on their experiences during this project, Producers Direct has generated investment in piloting, development and rollout of digital tools, particularly the 2Kuze app.

Delivery of more effective climate and EWS information

The **Tahmo** project in Uganda partnered with AirTel and IBM to establish a network of weather stations at schools to provide practical geography training to students and the delivery of EWS information to approximately 1.2 million people. A majority of respondents to a survey found the weather-related information they received to be relevant and 75% of respondents took action in response to the message received, thereby improving their anticipatory capacity to respond to climate risk.

The **Mercy Corps TRANSFORM** project in Indonesia has worked with a popular communications app, AtmaGo, to deliver DRR information. At the time of reporting, 10,756 people had accessed community-based information including public safety reports through AtmaGo. This new DRR function of the app is something that will be expanded to further cities, and the information generated is being used by 20 different institutions. In addition, pilot projects were implemented in 16 up and downstream communities, which included community interventions for flood mitigation and stormwater management. 265,000 flood-prone individuals benefited from reduced run-off, strengthened transboundary coordination and community networks.

Under BRACED, the **Zaman Lebedi** 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 technology. Evaluation evidence indicates that the project was successful in contributing to incremental changes in the resilience of many vulnerable households and communities. However, a greater degree of change was observed where climate information was combined with other interventions, in particular livelihood diversification strategies.

Impact Insights: Managing Risk through Economic Development (MRED), Nepal

Solution: 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.

Methods: Quasi-experimental: Post-shock survey during and after shock (no baseline), with Propensity Score Matching (n = 764)
Resilience measurement: Capacities and well-being
Shocks: Flooding

Findings: 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.

3.1.4 Making financial services and markets more inclusive

Having access to financial services improves disaster preparedness and speeds up recovery afterwards. Providing better access to appropriate financial services can improve the ability of communities to plan for, respond to and adapt to the threats they face. Provision of innovative microfinance solutions has been shown to help communities reduce their exposure to and bounce back faster from a shock. Community-led solutions such as village savings and loans associations (VSLAs) can be particularly effective when combined with other interventions such as livelihood diversification schemes and EWSs.

Better access to finance through existing microfinance institutions (MFIs)

Mercy Corps **Taking Risk out of Agricultural Trade for Relief and Development Enhanced with Resilience (TRADER)** forged new linkages between market actors. The project designed an innovative sharia compliant financial product to support improved market functions within the livestock system in Wajir, Kenya. Some 2,000 livestock-keeping households benefited from livestock sales stimulated by the Mifugo Kash (MKK) pilot. Project partner and Islamic finance provider Crescent Takaful Sacco (CTS) disbursed US$124,940 in loans. Given the limited timescale of the TRADER project, the project team stated that it would be 'irresponsible to claim that the project built resilience'. However, important learning has been generated from this project as close monitoring made it possible to recognize that the initial pilot approach was not working.

Mercy Corps' **Linking Social and Financial Capital to Enhance Resilience of Agro-Pastoral Communities (LEAP)** worked to strengthen the resilience of agro-pastoralists in Mali and Niger by expanding their access to formal financial services. The project educated agro-pastoralist men and women so that they can make informed decisions about their household finances and better manage risk. This unlocked access to new credit options, including warehouse credit for farmers and tailored credit products for women's groups. This resulted in increased uptake of financial services by targeted beneficiaries. The project reached 227,992 people through financial education messages broadcast on local radio. In terms of the outcomes on women in particular, the project has had promising results, with the percentage of women involved in financial decision-making increasing from 9% to 23% in Niger and from 19% to 32% in Mali.

Mercy Corps' **Pastoralist Areas Resilience Improvement through Market Expansion (PRIME)** in Ethiopia was the evolution of two successive earlier programs in drought-prone regions. It worked with a variety of financial, livestock, and weather and market information service providers, as well as implementing natural resource management techniques to restore the rangeland. PRIME's evaluation indicates a positive impact on well-being indicators in the face of a severe drought. As the drought situation moved closer to a humanitarian situation and the project applied for crisis modifier funding, it was able to respond through its networks of traders, veterinarians and MFIs, suggesting it had built strong linkages.

Impact Insights: Pastoralist Areas Resilience Improvement through Market Expansion (PRIME), Ethiopia

Solution: 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; and improving the nutritional status of children and mothers.

Methods: Quasi-experimental: Ex post (end line) with control-treatment groups (no baseline). Propensity Score Matching (n > 1,500)
Resilience measurement: Capacities and well-being
Shocks: Drought, water shortage

Findings: Results show positive impacts 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 experienced 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.

Harnessing satellite technology for innovative insurance products

The International Food Policy Research Institute (IFPRI) led **Satellite Technologies, Innovative and Smart Financing for Food Security (SATISFy)** project addressed the challenge presented by uninsured risks, which is a major cause of low agricultural productivity in the Horn of Africa. The project was a unique public private partnership between Equity Bank, APA Insurance and IFPRI that demonstrated a potential business case for building resilience. It proposed a market-based innovative risk management solution in the form of risk-contingent credit (RCC), a social safety net that could mitigate drought risks for the rural poor and improve farm productivity and livelihoods. RCC is a linked financial product that embeds within its structure insurance protection, which, when triggered, offsets loan payments due to the lender. RCC seeks to address the challenge that lenders are reluctant to lend to farmers because of the financial risks associated with crop failure. Because RCC targets downside business risk, it simultaneously reduces financial risk and exposure. This risk balancing effect has encouraged both increased supply of and access to credit, and risk-rationed farmers to increase the use of credit.

VSLAs linked to existing MFIs promise sustainable access to finance in Ethiopia

Under the BRACED **Market Approaches for Resilience (MAR)** project in Ethiopia, a holistic package of interventions was offered to agro-pastoralists and agricultural communities in three regions. At the core of these interventions was the recognition that household and community resilience to recurrent drought was linked to the ability to access markets and financial services at the right time relative to shock occurrence. VSLAs with productive livelihood activities are the first step in a package of financial services offered to help communities deal with climate stressors. VSLA groups are encouraged to use loans for livelihood diversification (e.g. chicken breeding) and also to pool savings in an emergency fund, which can be used at a time of climate stress. Case study evidence from South Omo suggests that this has proved effective with new income sources leveraged from VSLAs loans contributing to household consumption during the drought (Yaron, Duta and Wilson, 2018).

Modalities for rapidly deploying funds in response to a climate shock or risk

Ensuring that funds are available to the most at risk before, during and shortly after crisis hits is essential to avoiding the worst effects of a shock or stress. An overview of potentially effective mechanisms to do this follows.

The Red Cross' **forecast-based financing (FbF)** aims to move from a more reactive response to climate shocks to a more anticipatory approach (University of Reading *et al*., 2015). Combining pre-agreed finances linked to scientifically determined thresholds means that delays are avoided in distributing funds when needed most. The FbF program is building an evidence base on the efficacy of this approach and has compiled a manual which sets out considerations including: (i) understanding the level of risk and exposure and the capacity of government and non-government agencies to respond; (ii) identifying appropriate triggers which could be climate forecasts, market signals, depth of flood waters, etc.; and (iii) actions to take in response to given trigger. Currently, there are systems proposed or beginning in Ethiopia, Peru, Bangladesh and Mozambique and while further research is required to fully test the efficacy of this tool in the face of shocks, there are some signs that this could be an effective model to help communities cope with the effects of rapid onset disasters.

DFID's Providing Humanitarian Assistance for Sahel Emergencies (PHASE) is testing the approach of contingency funding mechanisms. Established to provide rapid finance in the face of climate shocks in the Sahel, it was also made available to BRACED projects operating in the Sahel. This 'crisis modifier' provided rapid response to humanitarian needs that emerged in the project areas and to determine if this approach could protect the development gains made by BRACED. Evidence from a BRACED evaluation that investigated the benefits of such an approach found the following:

- Crisis modification funds have the potential to be a useful tool in the risk-financing box.
- It can allow development agencies already working in the affected areas to use their established operations, community connections and trust to rapidly respond to identified or experienced crises.
- The same development agencies can maintain a parallel focus on longer-term development work to address underlying drivers of vulnerability to the very same shocks and stresses (Peters and Pichon, 2017).

Shock-responsive social protection systems (SRSPs) and Adaptive Social Protection (ASP)
Social Protection systems have historically been designed to support the poorest people or those who may find themselves suddenly or persistently disadvantaged through job loss, illness or conflict. More recently, it has been recognized that these systems have the potential to support those who may find themselves temporarily plunged into crisis owing to external drivers such as climate shocks.[2]

2 See https://www.opml.co.uk/projects/shock-responsive-social-protection-systems

Evidence from an evaluation of the World Bank led Adaptative Social Protection System in the Sahel[3] suggests that there is an important distinction to be made between two potentially effective tools. **SRSP** at its core is about ensuring that the EWSs, funding, planning and targeting mechanisms exist in order to rapidly scale up the response of social protection mechanisms in times of shock. This supports resilience principally by building the absorptive capacity of the recipients through the transfers of funds during a shock or crisis. **Adaptive social protection (ASP)** systems also include these objectives but build on them with a longer-term vision for resilience, recognizing that social protection tools and mechanisms provide an ongoing opportunity to contribute to fostering households' adaptive and transformational capacity to climate change.

The **R4 Rural Resilience Initiative** implemented by the World Food Programme (WFP) and Oxfam America brings together a package of different financial services into a risk-management model for food-insecure communities. Its four main components are (i) risk reduction (improved resource management through asset creation); (ii) risk transfer (insurance); (iii) prudent risk taking (livelihood diversification and microcredit); and (iv) risk reserves (savings). Globally, R4 is currently operational in Ethiopia, Malawi, Senegal, Zambia, Kenya and Zimbabwe, reaching 57,000 farmers as of early 2018. 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.

Impact Insights: R4 Rural Resilience Initiative, Senegal

Solution: 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. The main interventions include 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).

Methods: Quasi-experimental: Difference-in-difference; without matching (n > 1,618)
Resilience measurement: Assets and capacities
Shocks: Drought/water shortage

Findings: Program participants reported much larger improvements in food production and consumption compared to non-participants, including the production of cereals and staple foods. Additionally, the increase in the Food Consumption Score (FCS) is more than three times higher for 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. Program participants also experienced a reduction in the Coping Strategy Index of 7 compared to a 2.1 reduction among non-participants.

3 https://assets.publishing.service.gov.uk/media/5d1b4f09e5274a08cc5c29ed/Summary_Report_and_Recommendations.pdf?_ga=2.234194205.220263080.1566807420-1716499104.1557511378

3.1.5 Deploying low-cost infrastructure solutions

Affordable and low technology infrastructure solutions which can be widely scaled out can reduce exposure to identified risks.

Cost-effective, low-technology solutions to better water management

MetaMeta has rolled out the Roads for Resilience approach in Ethiopia and Kenya to implement road water management practices. The project has benefited over 3 million people through putting in place road water management systems, including road water harvesting in Tigray, Ethiopia, which has increased soil moisture, even during the exceptionally dry years of 2014 and 2015. Monitoring showed that despite a drought, crop yields among farmers practicing water harvesting were higher than in previous years that had higher rainfall. At the same time, road water harvesting ponds provided vital sources of water for livestock, thus reducing potential losses.

Shock-specific innovation avoids the impacts of flooding

BRAC (Bangladesh) and the **University of Waterloo** (Vietnam) developed floating homes to increase the absorptive capacity of communities at risk from flooding. BRAC used a range of different technologies, including solar panels and wind turbines, harnessing academic expertise and local knowledge to design and build three houses that are environment-friendly, floatable, earthquake resistant up to Richter scale 8, resilient against three types of cyclone and an insulator to lightning. The houses offered modular components built from local material that could be adopted by local communities. The University of Waterloo completed four amphibious houses, whereby the combination of academic research and expertise along with local knowledge, understanding of needs and context and local construction expertise were important factors in the success of the project. This was recognized by BRAC receiving the 2019 Munich Re Foundation RISK award, presented at the Global Forum for Disaster Risk Reduction in Geneva.

In August 2017, during the **Lutheran World Relief (LWR)** project time frame, severe flooding occurred with the worst rains in 15 years causing significant damage to lives and livelihoods across project areas in Nepal and India. Communities reported that the systems put in place by the LWR project considerably strengthened community preparedness, dissemination of key information and protection of household assets with no fatalities reported from the communities where the systems were in place during the floods. Both equipment and emergency response plans developed under the project were put into operation by Community Disaster Management Committees (CDMCs) who had been prepared to respond to severe flooding through project training. As a result, they disseminated vital information and disaster alerts to communities through a range of channels and provided access to loans, microcredit or grain for affected households. Households also found that the livelihood components of the project to put flood-resilient agricultural inputs in place, coupled with improved economic resilience, minimized losses and facilitated quicker recovery from flood damage.

Impact Insights: BRACED Myanmar Alliance

Solution: Myanmar Alliance's project was based on a model promoting a participatory, inclusive and comprehensive process for resilience building. Its 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.

Methods: Quasi-experimental: Ex post (endline) with control-treatment groups (no baseline), Propensity Score Matching (n > 1,498)
Resilience measurement: Capacities and well-being
Shocks: Drought / water shortage

Findings: Unable to identify any statistically significant 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. Project interventions are associated with improved resilience scores for female-headed households.

3.2 Building the business case for resilience

We have described above compelling evidence from resilience projects delivering results for vulnerable communities. However, this comes at a cost and with finite funds, governments, donors and potential investors are interested to know what the social return on that investment will be. For example, if the cost of delivering innovations is too high, how can a local or national government under severe resource constraints be expected to maintain or scale them? How can the public sector, multi-lateral development banks (MDBs), the private sector, and philanthropy and impact investors be convinced to support future resilience initiatives with competing demands for limited finance?

From the outset GRP has focused on building exit strategies into project designs, recognizing that grants are finite. Many projects outlined above such as IFPRI, TAHMO, Grameen and Producers Direct have elements for viable businesses cases to building resilience. To date, however, the majority of support for resilience programs (and development work more generally) has been from the public sector via official development assistance (ODA). As we have seen, this funding has delivered some excellent results. However, ODA and public funds are thinly stretched and under increased scrutiny, potentially making them more risk-averse. An overreliance on ODA will therefore not deliver the scale of change required in the limited time available. While national government fiscal allocations can support resilience-enhancing work, especially through ministries responsible for natural resources and agriculture, these can be dwarfed by the scale of the challenges faced. New sources of finance are required, which requires a better understanding of investment incentives and motivations and a new lexicon to speak to new actors.

Global climate finance flows have tended to prioritize mitigation projects where outcomes in terms of greenhouse gas emissions avoided are easier to demonstrate than people's resilience built. Multi-donor investments via MDBs, for example Climate Investment Funds, are beginning to bear fruit but are not infinite. Blended finance shows some potential and with the World Bank's announcement and action plan to mobilize US$200 billion by 2025 from a combination of direct funding and mobilized private investment, to be split 50/50 between mitigation and adaption projects and investments, there is the promise of more support for resilience-focused work (World Bank, 2018). The rise of impact investing is an exciting prospect but is relatively nascent and as yet has not provided the scale of finance required for resilience. As the private sector is increasingly aware of the risks of uncertainty under climate change, there is growing interest in the business case of building resilience. What is missing is the evidence to demonstrate the value of investing in resilience strengthening.

3.2.1 Resilience triple dividend

The Overseas Development Institute's (ODI) work with the Global Facility for Disaster Reduction and Recovery (GFDRR) was some of the earliest to think about how the business case for resilience could be strengthened through considering the various benefits adopting such an approach could bring (Tanner *et al*. 2015). They identified three 'dividends' created when investing in resilience from a disaster risk management perspective:

- **Avoiding losses when disasters strike:** This is the most obvious benefit from action to prepare for and respond to disasters before they happen. Nevertheless, it is difficult to calculate the avoided losses as part of an economic assessment as the severity and frequency of shocks is unpredictable.
- **Stimulating economic activity**: Reduced disaster risk allows space for economic activity to thrive through understanding and planning for threats. It has the potential to 'de-risk' opportunities for private and public sector investment, curtailed or constrained by the threat of losses when disasters strike.
- **Development co-benefits**: These are things that can be realized even in the absence of a disaster; for example, flood protection infrastructure which can also be used as public space.

While these dividends make sense in theory, they are often difficult to bring into standardized assessments used to prioritize finite resources for investment. In particular, the last two dividends are difficult to accurately incorporate and value. There is therefore limited evidence on the use of these dividends to guide *ex ante* decision making. Supported by the Rockefeller Foundation, the Rand Corporation developed a valuation model that allows for the pre and post project assessment of the resilience dividends using case studies in Bangladesh; but again, there is little evidence of this being used to guide decisions in favor of investing in resilience of disaster risk management measure (Bridgett-Jones, 2017). More recently, however, there have been attempts to use the dividends as a means of assessing project benefits vs costs (Box 3).

3.2.2 GRP Water Window cost–benefit analyses (CBA)

CBA is one way of identifying cost-effectiveness by quantifying and monetizing the benefits derived versus the costs of delivering those benefits. Some GRP Water Window grantees provided cost–benefit data as part of their reporting. CBA evidence from across the grantee interventions suggest that benefits exceed costs when viewed from the perspective of local policymakers (taking only local costs and benefits into account). However, the estimates have been limited by the exclusion of program costs and limited use of evidence on changes resulting from project interventions.

Unfortunately, there appears to be limited robust evidence of the cost-effectiveness of resilience investments. This is further challenged by the limited value placed on some components of building resilience including improved ecosystem services and gender equity. Our review of partner evidence provides a few examples but there is clearly a gap. Moreover, not addressing the root causes of climate change and biodiversity loss will lead to overwhelming costs in the near future. It is apparent that more work is required to fill this gap and build the business case for resilience.

Box 3: BRACED, Myanmar: Participatory CBA using triple dividends

An approach developed under the DFID BRACED program, which combines evidence from participatory methods to understand changes that have occurred with more formal economic modelling, was used to assess community-planned interventions to tackle flooding. Used in flood-affected communities in Myanmar, estimated economic benefits over a 10-year period (based on 12–18 months of post intervention data) were found to be significantly greater than estimated costs (Table 1). The highest returns accrue to relatively small-scale infrastructure investments planned with communities and local government, drawing on donor finance with community contributions of labor.

Table 1: Key CBA results across four case study townships applying a 12% discount rate[4]

Case study	Net Present Value @ 12%[5]	Benefit: cost ratio
Dalaban	£736,196	10.89
Ward 93	£513,959	2.43
Mawlamyine	£227,413	4.47
Nyaung Ta Pin	£607	1.07

The net returns were greatest in the two case study sites (Mawlamyine and Dalaban) where community-planned small-scale infrastructure was used to limit regular annual flooding (generating the first dividend of resilience) in addition to improving livelihood opportunities (the third dividend of resilience). In these cases, small-scale infrastructure work such as building an earthen embankment or dredging flood channels was enabled by a joined-up response from the donor-funded project, community and government.

4 Using a 6% discount rate, increases estimated NPV by approximately 50%, as a lower discount rate makes development projects with high upfront costs and benefits spread over a 10-year period more attractive.

5 NPV provides a method for evaluating and comparing projects or investments with value spread over time.

INTERVIEW INSIGHTS – Giving voice to women in development

Fatima Ahmed, President of Zenab for Women in Development

Watch video

Fatima is the founder and director of Zenab for Women in Development (ZWD). As a strong advocate for Sudanese women and girls, Fatima has worked tirelessly to build ZWD with lasting impact. Her early efforts date back to her university days, where she actively fought for her fellow female students' rights as an executive board member of the Student Union at the University of Gezira. Being in a major agricultural state, she also advocated for the silenced voices of women farmers to be heard. Fatima founded ZWD in 2000 to delegate herself to advocate for the rights of vulnerable and marginalized Sudanese women and girls, especially those in rural areas. The organization is named after her mother who was a pioneer women educator. Fatima is regularly called upon by the United Nations to represent ZWD and the voice of African and Sudanese women and girls. For her restless efforts, Fatima received the Ambassador of Peace Award in 2005 and was awarded the 2007 UNDP Equator Prize.

Could you introduce yourself, your organization and also how you've been involved in resilience work? My name is Fatima Ahmed, I'm the president of a Grassroots Women's Organization working in Sudan in different areas, but concentrating on Eastern Sudan, which is bordering Ethiopia and Eritrea. Climate change has caused a lot of problems to all producers, especially smaller scale farmers, especially the women who are really more vulnerable. Our program started in 2006 when we organized the Women Farmer's Associations. From 2006 we started with 200 women and now the network of the women we work with is more than 5,000 women in 73 communities across Gedaref state. Really this has made a big difference because the women were struggling with low production and low productivity and also by the effect of climate change, drought, sometimes floods.

How has the project been dealing with local impacts of global issues? We educate the women about the phenomenon; what is going on. Now the women are well equipped with information about climate change. We try to make interventions by providing women with improved seeds, seeds that can tolerate drought or shorter seasons, and also to help them with ploughing. This is making it easier for them, because it saves them energy and time and it increases production and productivity. These women never heard about the bank or how to access loans, which are included in our program. Our programs now also introduced new agriculture techniques, like water harvesting, water agriculture conservation. This program actually won three international awards. One is UNDP Equator prize and it's been given to us in Rio+20 conference in Brazil. We won the UNFCCC award, awarded to us in Bonn, and one of the women farmers went to receive the Islamic Development Bank award.

What have been the key successes and challenges experienced? The key success is our real impact and result on the ground for the life of these women, in terms of empowering, in terms of income increase, and it's also reflected in their families, in their daughters' education and their kids' education, their health. The challenge is sustainability, in terms of resources, because this is based on project funding, which is not sustainable. I think the big challenge for us is how we can replicate this program so we can include more communities, more women, and also how to scale it up so it can have a better impact and better results.

How are you applying a resilience approach within the program? A resilience approach is definitely part of the objectives and aim of our program. If those communities reach their full security, being able to withstand or adapt to climate change, in terms of flooding, in terms of drought or other things, this has contributed because of the resilience of these communities. Then they don't have to migrate, they don't have to have more adverse conditions in their daily life. This has contributed, definitely, to the resilience of these communities and stability of their daily life. Resilience comes as a result of helping

the communities with their needs, to make their life easier and more protected from whatever weather conditions or conflicts. In Sudan there is too much conflict because of the scarcity of water or pastures. These things are connected.

How have women in the union been involved in co-producing how it works? We have a very good relationship as local NGOs, grassroots NGOs, with the women and the communities. It's not only the women, it also is the smallest scale farmers, men and children. But for the women it is mainly to shift the mode of agriculture from traditional agriculture to conservation agriculture. This is really giving very good result in terms of increasing the production of those small scale farmers. But we have to work hard to convince them to change the ways they are doing business. After one year some people had very good results, so the rest were convinced. I think it's a very important and crucial aspect to involve grassroots organizations. Because they have a better way of linking with these communities, talking to them of whatever is new and can help them.

How have different marginalized groups been part of the work that you have been doing? We have a girls' education program and also a program with rural women, helping them in terms of legal assistance. And also to advocate; we have very strong activities in terms of advocacy. We also support equipment for children living with disabilities. We are doing whatever we can do for these communities. Now we have programs going to start soon, mainly with girls or adolescents with disability, to give them vocational training. We are trying to help in terms of giving them some sort of income generating activity.

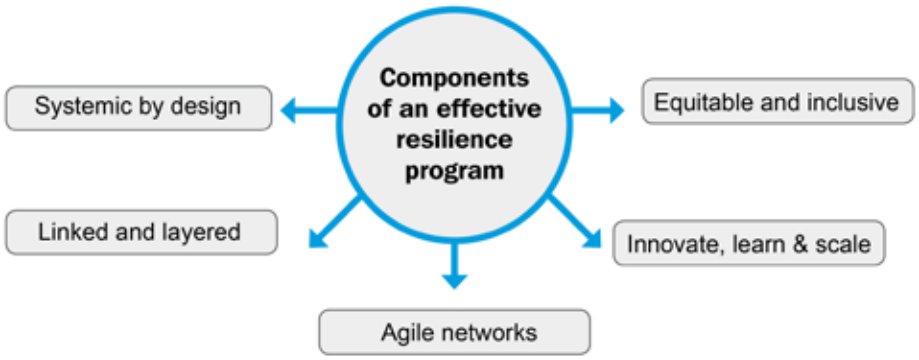
How does your work contribute to long-term resilience? I really think our program has a long-term impact. Some of the communities we started with, we no longer work with because they are already empowered. They're already resilient. So it's really long-term impact in terms of empowerment, in terms of resilience, in terms of knowledge about what is going on around them. For us it's very encouraging to work there.

Do you think there is a need to re-think how we do development currently? Yes, I think development has to really concentrate or depend on bottom-up processes. Because these communities need to be involved, need to be at the center of the decision making. What are their needs, how do they want to do this. It really is a bottom up approach. Many talk about it, but it is not really there on the ground. More attention is needed for grassroots organizations, empower them with resources, which is the number one challenge for them. More involvement and more representation of grassroots communities can accelerate development.

4 Components of effective resilience programming

Based on our review of evidence from across the partnership, we believe there are some common program components that are necessary for resilience programs to be effective (Figure 6). We present these in turn below.

Figure 6: Summary of the components of an effective resilience program based on evidence from across the partnership



4.1 Be systemic by design

Conceptually, resilience emerged first from engineering and then to psychology and ecology as: the ability of a system or entity to return to a previous or improved state after a disturbance. Enhancing it requires an understanding of the complex, multi-scale (temporal and spatial) and interdependent relationships between different actors, levels and properties of a system. The ideas of emergent properties and 'surprise' – unpredictable changes that occur as a result of interactions within and outside the system – are central to resilience. If we accept that all households, communities and economies are themselves complex systems[6], often operating in a wider institutional and natural (climate, natural resources) system, then inherently, programs aiming to make actors in that system –

6 A complex system is a system composed of many components that may interact with each other, for example organisms. Systems that are 'complex' have distinct properties that arise from these relationships, such as nonlinearity, emergence, spontaneous order, adaptation and feedback loops, among others.

or better still, the system as a whole – more resilient must understand complex relationships between them before trying to bring about change within them.

What does this mean in practice? There needs to be a focus on understanding of the following:

- **Different levels or scales:** These could be individual, household, community, county, watershed, market or government (national or sub-national). Some of these are social or political systems and others are natural, and the boundaries between them may not align or be fluid. It is important to consider at what level the program or project will operate when planning interventions to maximize chances of success and avoid unintended negative consequences. It may be beneficial to consider one level above and one below the focus level to better account for connections across scales.
- **Actors or agents within the system**: Who or what are the key people, organizations, networks or institutions within the system in which you want to bring about change? Understand their position in the system, their motivations and incentives and recognize your relative position as fellow actor in that system. This is important in understanding what partnerships you may need to forge to ensure you have the right skills, experience, credibility and access to the communities or actors you want to work with. Diversity is important here as some actors may become constrained at different times and a broad set of skills, experience and connections is essential.
- **Exogenous and endogenous enablers and constraints**: Think of these as amplifiers or dampeners, some that can be controlled and others that can't be. Systems are rarely fully bounded and are likely to be affected by outside influences; for example, a cyclone or flood disrupting and dampening the effects of a long-term development intervention. Conversely, a favorable change in political governance could help to amplify benefits generated.
- **Resources:** What resources are available and important? This could be natural resources, human or social resources or capital, time, skills and experience of key actors. Understand this and identify what is already present – focus on what is already there; the agency of individuals and households.

There are tools specifically designed to support systems analysis for designing effective resilience approaches; for example, the Stockholm Resilience Centre's Wayfinder tool developed under the GRAID program. Wayfinder is a process guide for resilience assessment, planning and action in social-ecological systems (see Box 4). It represents the frontier in resilience and sustainability science, synthesized into a clear, coherent and hands-on approach.

4.2 Embrace diversity: layering flexible and linked interventions

It is understanding risk and impacts, and seeking to design and implement systemic interventions that support communities to prepare for and respond to them, that makes a resilience program different from a regular development program. Therefore, any resilience-building project needs to start by selecting its interventions relative to defined and characterized (i.e. frequency, magnitude, impacts) shocks and/or stresses. This may seem obvious, but it is surprisingly common for projects not to be explicit about how their interventions support beneficiaries to respond to anticipated shocks and stresses.

Box 4: Wayfinder: A resilience guide for navigating towards sustainable futures[7]

The Wayfinder process consists of five iterative phases:

Phase 1 – Building a coalition for change. 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. The coalition reaches out to a wider group of stakeholders to explore their 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. Analyze how components of the system interact, across scales, to produce the social-ecological dilemmas that people experience. 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. 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 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. 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. Lessons learned 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.

Source: Adapted from: https://wayfinder.earth

Once the risk context is well understood, interventions can be designed to anticipate and mitigate them. Some of the more effective measures are proactive rather than reactive and are based on good information and knowledge to be able to predict and prepare for shocks and their effects before they occur, for example:

- **Climate information services (CIS):** Providing accurate and timely short-term and seasonal forecasts helps farmers to make decisions about the timing and types of crops to plant.
- **Early warning systems (EWS):** When the risk of a rapid onset shock is identified, being able to quickly and clearly convey information and encourage those at risk to take action can save lives and livelihoods.
- **Market signals:** Being aware of market prices changing outside of normal fluctuations.

7 See https://www.youtube.com/watch?time_continue=114&v=ZirnarZNZDg

Impact Insights: Scaling-Up Resilience for 1 Million People (SUR1M), Niger and Mali

Solution: SUR1M delivered a package of interventions to support up to one million people to increase their resilience and adaptation to climate change and disasters across various linked intervention areas, 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.

Methods: Quasi-experimental: Difference-in-difference, no matching (n > 2,300)
Resilience measurement: Capacities and well-being
Shocks: Drought/water shortage

Findings: While those benefiting from the project are more exposed to potential climate shocks, they fare better than those who do not receive support. In particular, project beneficiaries are 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.

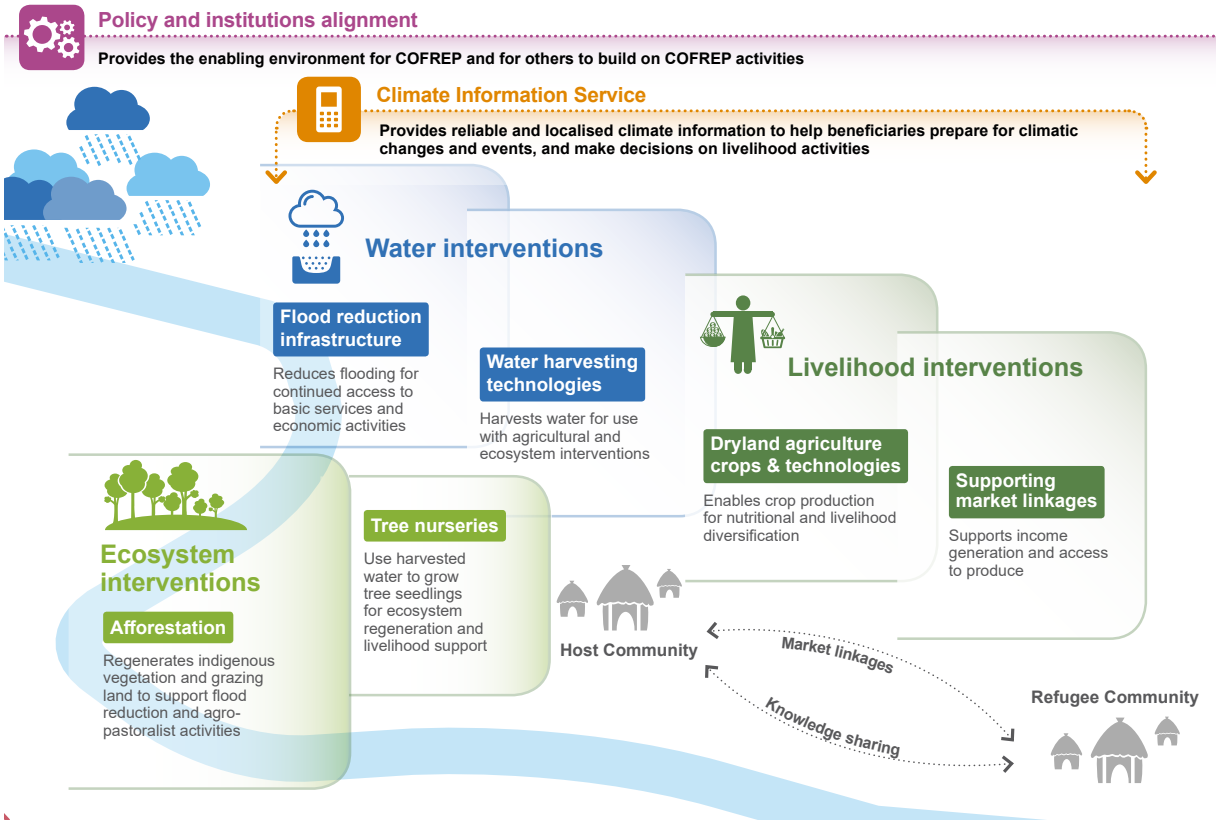
Furthermore, the contexts in which resilience programs are often implemented are unpredictable (e.g. risk of climate impacts, conflict, market volatility or health epidemics). Thus, we need agility in the face of unpredictability. Therefore, building redundancy and flexibility intentionally into the design is critical for a resilience project, program or policy. Being able to quickly adapt the ways in which you work, with whom you work (partners and target beneficiaries) and when you work with them is at the heart of a systemic resilience approach.

There is therefore no single solution to build resilience. What is required is a set of linked interventions which are sequenced or layered in such a way that they tackle context-specific problems holistically, while recognizing uncertainty and unpredictability. This requires careful thought, diagnosis and deliberate design, which should be an important step in implementing a resilience program. See Box 5 for a good example of how this has been demonstrated in Kakuma, Kenya by the Danish Refugee Council (DRC) and its partners.

Box 5: Danish Refugee Council's Community Flood Resilience Project (COFREP) links and layers interventions in Kakuma, Kenya

An independent evaluation indicated that the coordinated implementation of complementary and interlinked interventions, including seed multiplication, early warning system, the water control and harvesting infrastructures, farmers' training on dryland farming techniques, afforestation and training on flood risk mitigation are all contributing to the capacity of communities to be more resilient to water-related shocks and stresses. The layered approach was specifically tailored to the needs of vulnerable groups. Activities focused on women farmers strengthened their livelihoods, increased their productivity and reduced their dependence on other family members. Community-managed DRR action plans included specific provision for elderly people who, together with people with disabilities, also received agricultural inputs and training to make their practices more resilient.

Figure 7: Layering interventions for community flood resilience



Source: Itad (2019a).

4.3 Create agile self-organizing networks

Taking a systemic and holistic approach required for resilience building implies that no one actor or organization has all the necessary skills, assets, knowledge and connections. What is needed are dynamic and agile networks that are able to self-organize and provide peer support through effective partnerships with the right actors and organizations. Recognizing this and assessing the relative strengths and weaknesses of an organization and finding an appropriate partner or set of partners (e.g. a consortium) is a critical step. BRACED's annual Monitoring and Results Reporting (MRR) report highlights the importance of strengthening existing and building new partnerships for resilience building. The MRR work found that,

> emerging evidence suggests partnerships are proving effective; speeding up and smoothing implementation; and enabling BRACED projects to achieve results they could not have done alone. These include brokering access to hard-to-reach groups or wider networks; providing technical knowledge, resources and services; generating avenues for scaling-up and scaling-out of interventions (including collaborations with other initiatives in project areas); and helping foster buy-in and demand for interventions, increasing the potential for sustainability (Silva Villanueva and Sword-Daniels, 2017: 24).

These insights align with the findings from GRP grantees and emphasize the value in investing in developing and maintaining key partnerships, not only to ensure effective delivery during the funding period but, critically, to enhance the chances of longer-term sustainability and scalability. Indeed, all

GRP challenge fund grantees have created successful partnerships at government level, as well as with research institutes and NGOs and community-level organizations.

Box 6: Partners for Resilience

Partners for Resilience (PfR) is an alliance of the Netherlands Red Cross, CARE Netherlands, Cordaid, the Red Cross/Red Crescent Climate Centre, and Wetlands International supported by the Dutch Ministry of Foreign Affairs. The name originates in the fundamental belief of its five members in the central role of resilience as the way to deal effectively with disasters. This means they use an integrated approach to mitigate disaster risk and enhance livelihoods, particularly by addressing climate change and ecosystem management and restoration. To yield maximum impact and operate cost-effectively, partnerships are formed, involving humanitarian and development work, ecosystem management and climate change adaptation. The main focus is at local level. There, partnerships are established with communities, government agencies, private sector enterprises, and civil society organizations that are active at local levels, in different disciplines and with different approaches.

Where at the outset of PfR the integrated approach was merely a theoretical concept, years of intensive collaboration have demonstrated a successful translation into acknowledged approaches and practical interventions – through direct work with communities, and engagement with other civil society organizations, knowledge institutes, and governments. As many of the in-country partners were new to the partnership, much time was invested to familiarize them with the program and especially with each other. Many teams referred to the collaboration as an affair that transformed from a forced marriage into a love marriage. All have come to appreciate the other partners, acknowledge their expertise and skills, and together capitalize on complementarity and synergies. Several aspects emerged from learning efforts include a focus on needs based versus rights based approaches, the importance of a solid evidence base, the understanding of the key role of ecosystems for DRR and the need to make approaches climate-smart, and the pivotal role of learning.

In Ethiopia, the PfR alliance supported the implementation of an integrated risk management (IRM) program from 2011–2015. A final evaluation assessed the achievements of the program and its contribution to the attainment of observable results. The program focused on the three pillars of community resilience, building the capacity of CSOs, and dialogue on policy. To strengthen community resilience, it undertook interventions that included livelihood diversification, food security, access to credit, water and irrigation services. The evaluation found that the program addressed the needs of communities while chiming with government policies and strategies. Increased resilience was observed among communities and partner organizations, but much more was deemed required to address remaining huge needs. There was good coordination among consortium members, implementing partners and government. Implementing partners well knew the local context through earlier interventions and this helped them win the trust of communities.

Source: Adapted from https://www.partnersforresilience.nl/en/

4.4 Promote equity, inclusion and decentralized decision making

Building resilience often means working in inherently challenging contexts. This needs to be explicit and accounted for from the outset. Often those most at risk from climate, economic or health shocks are in fragile and conflict-affected areas, which contain the most marginalized groups. It is likely that people living in these areas have the most to gain from resilience strengthening as they may be starting from the lowest base. It is therefore important to consider and make explicit barriers or constraints the project is likely to face in reaching marginalized groups, ideally in an assumption of

a Theory of Change or program logic. This can be linked to the identification of key partnerships required to overcome these challenges. It is important to consider targeting of households or other beneficiaries within these contexts and to tailor interventions accordingly.

Most of the projects and programs reviewed for this report aimed to target marginalized and excluded groups, many targeted women and children but also people with disabilities and those from specific livelihood groups. The importance of this cannot be underestimated, nor can the challenge in doing it well. For example, simply counting how many women have 'benefited' from an investment is woefully insufficient. At a minimum, be gender sensitive; but ideally being gender transformative should be the target. This involves understanding the underlying and often hidden power dynamics and social norms, which are in many cases part of the reason why particular groups are disproportionately vulnerable to certain shocks and stresses. Understanding them is one thing but tackling them is another.

Programs should not assume that top-down resilience 'packages' hold immediate relevance to a particular community, and may even be resisted. 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. There appears to be convergence around the importance of community assessments as a design tool for resilience practice, both as a recognition of the significant impacts that idiosyncratic shocks and stressors can have on the resilience of people and households, and that people's experience of covariate shocks is not uniform. When done in a participatory manner, vulnerability assessments cross over from a design tool to the beginnings of a transformative intervention (Kirkby, Williams and Huq, 2018).[8]

There are trade-offs to be made here and donors and those investing in resilience projects with a finite budget must consider whether they are willing to go the 'last mile'. Reaching the most marginalized can often require more budget – they can be geographically remote or in conflict areas which are difficult to access – so investors must consider whether they want to reach more people or those most in need.

Impact Insights: Women's Action towards Resilience for Urban Poor in South Asia

Solution: The project responded to climate-related risks facing urban slum communities in seven Asian cities: 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.

Methods: Quasi-experimental: Difference-in-difference; no matching (n > 1,250)
Resilience measurement: Vulnerability index
Shocks: Heat stress, water and vector-borne diseases

Findings: The end line survey reveals large shifts in the vulnerability levels of 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. Only 29% of the baseline high vulnerability group did not improve their status.

8 Kirkby, Patrick; Williams, Casey and Huq, Saleemul (2018) 'Community-Based Adaptation (CBA): Adding Conceptual clarity to the Approach, and Establishing its Principles and Challenges, *Climate and Development* 10.7: 577–89.

4.5 Innovate, learn, sustain and scale

GRP has supported two innovation challenge funds to date. Working in cycles of innovating, testing and adapting has delivered some early resilience outcomes. At GRP we define innovation as a prerequisite to transformative action. Innovation for our purposes is defined as adding practical, sustainable, resilient value at scale. Innovation is an adaptive and iterative process that should dare to take risks and be ready to fail fast and fail smart. Equally important is taking the first step - starting the innovation journey even if you might not be on the perfect pathway. We have identified the following fundamentals of innovation:

- Scale and urgency are critical - we must move away from pilots and seek transformational impact that helps communities, countries and regions find pathways to resilient systems that deal with complex trade-offs and interdependencies.
- Ownership at the whole level – interventions must be owned by government, communities and the private sector. If you exclude one you risk undermining the innovation.
- Gender and equity considerations are fundamental. Multiple opportunities are lost and resources wasted when they are an afterthought.

Innovating for transformative change

Based on the assembled evidence, it is clear that there have been some notable achievements in strengthening the capacities of vulnerable communities to be more resilient to the threats they face. But what happens when that project or program ends? Will the results achieved be sustained? Is that sufficient? Given the magnitude of the risks faced globally, large-scale, sustainable and transformative solutions are needed urgently. We need to reach the billions – not just the millions – by bringing about more fundamental change to socioecological and economic systems.

Transformational change is a tricky concept and there is no one accepted definition. There has been very recent work conducted to better understand the concept, how it can be applied and measured, and where results have been delivered (Itad, 2019b; Bird, Cao and Quevedo, 2019; Pal *et al.*, 2019). From this work there are some common elements, which indicate that the change has to be: **sustainable, scalable and systemic** in nature.[9] These changes often need to be in institutions or systems that were present before and persist beyond projects, such as political institutions, governance, power dynamics and behavioral or societal norms. These are of course some of the most challenging areas to change. However, there are lessons that can be drawn from the programs we have reviewed which may hold clues to how this may be achieved. In all cases, these represent examples of projects and agencies working systemically, thinking beyond project financial, fiscal and spatial boundaries.

Learning from what does and does not work

Most development projects – where most of the resilience work currently takes place – have short-to-medium time frames. During that period the system can be subject to change. It is therefore vital to regularly revisit the information available, exploring what has worked, what has not worked and why, and what that means for current and future work. Moreover, we will not find real solutions unless we are willing to try new things. This entrepreneurial mindset is often missing from aid spending but has to be integral to any resilience program. Initiatives may not work out as planned when implemented, and that is acceptable as long as we use learning from failure to improve projects and ideas (e.g. see Box 7). Reflecting on what we have experienced can contribute to resilience knowledge and iterative learning, in order to find solutions that bring positive transformation.

9 Some models also include Catalytic and Inclusive in their sconceptual frameworks

Box 7: Mercy Corps TRADER: Adaptive management and learning from failure

Adaptive project management allowed the Mifugo Kash Kash (MKK) pilot to be safely tested with Crescent Takaful Sacco (CTS), stopped when problems were recognized and redesigned to better meet local needs.

'During the first three trade cycles, less than half of the 13 livestock trader groups involved made profit on the trade, and CTS lost money. Mercy Corps could not in good conscience advise CTS to proceed with the original six-cycle pilot plan. Instead, we agreed with CTS to press pause on the pilot. We reviewed evidence and learning, consulted with the traders and Islamic finance experts, and reconvened equipped to iterate our approach.'

Effective monitoring, flexible management and careful risk calculation allowed for effective and thorough testing of MKK.

'Mercy Corps was able to test MKK safely and productively during the pilot of MKK Mudharaba — surfacing learning to refine the product without detriment to the well-being of the target population. We attribute this success to our shock-responsive monitoring systems that quickly alerted us to potential issues, combined with a flexible and responsive management system that allowed us to pivot quickly and nimbly in response.'

Mercy Corps was therefore able to work flexibly with different funders and partner organizations to find a cost-effective way to design and pilot a value chain financing product. As a result of the field-testing and adaptation, a new product was developed and transferred. Despite the initial pilot proving unsuccessful, the project gave small traders who had previously sold in local markets access to export markets and benefited 2,000 livelihood-keeping households in Wajir county, Kenya, through livestock sales.

To define appropriate resilience-building solutions, projects need to 'probe-sense-respond' in such a way that evidence, knowledge and practice is emergent. Interventions will need to be refined and enhanced as understanding of 'what works?' improves. This may mean that phased rollout of projects is better than committing all at once, but with a view (and imperative) to scale rapidly those interventions and solutions that have proven to be effective. Sub-annual, beneficiary-led data might inform better rapid decision making for tactical adjustments, whereas annual reflections may support better strategic course correction. The USAID-supported Resilience Evaluation, Analysis and Learning (REAL) work provides some useful guidelines in this regard (Box 8).

Box 8: Resilience Evaluation, Analysis and Learning (REAL)[10]

Members of the Resilience Evaluation, Analysis and Learning (REAL) consortium have been intricately involved in building the intellectual capital around resilience concepts, analysis, measurement, learning, and knowledge management related to resilience-related program design and implementation for USAID.

The REAL Resilience Measurement Practical Guidance Note Series synthesizes existing technical documents into pragmatic guidance to assist practitioners in integrating core aspects of resilience measurement into their program assessments, design, monitoring, evaluation and learning:

Risk and Resilience Assessments
Measuring Shocks and Stresses
Resilience Capacity Measurement
Resilience Analysis
Resilience Design and Planning for Resilience Monitoring and Evaluation at the Activity Level

Source: Adapted from:
https://www.fsnnetwork.org/resilience-measurement-practical-guidance-series-overview

Sustaining results

The main focus here is on how results achieved can be maintained beyond the project lifetime. Commonly, these are in four main ways:

1. Embedding approaches within national or sub-national government structures.

2. Building community capacity to maintain or enhance interventions.

3. Engaging with private sector and other non-government actors.

4. Securing additional funding or linking activities with other projects and programs (Silva-Villanueva and Faulkner, 2019).

There is some evidence that results may be sustained beyond the life of the projects through embedding practices with government agencies, engaging the private sector, building local capacity to continue effective and affordable activities and leveraging additional finance. Unfortunately, the evidence base considered here did not include post project sustainability studies. Some notable (but not comprehensive) examples of approaches which *could* lead to sustained results are provided in Table 2.

10 USAID (2017) *Why Resilience?* https://www.youtube.com/watch?v=TVwh0B3JXjM&f eature=youtu.be

Table 2: Examples of projects that have shown potential for sustaining effects

Project and Program	Location	Embed with government	Building capacity	Private sector	Additional funding
MetaMeta, Global Resilience Challenge	Ethiopia	X	X		X
Producers Direct, Global Resilience Challenge	Uganda, Kenya	X		X	X
Mahila (MHT), Global Resilience Challenge	India, Nepal, Bangladesh	X	X	X	X
LWR Water Window Challenge	India, Nepal	X	X	X	
BRAC, GRP Water Window Challenge	Bangladesh		X		
MAR, BRACED	Ethiopia		X	X	
Livestock Mobility, BRACED	Various (Sahel)	X	X	X	X

Potential for scale-up

Sustaining achieved results is one important step on the path to transformative change, but taking successful solutions to scale is an arguably bigger challenge. Scaling a solution can be thought of in two main ways: horizontally, for example reaching more people in new places not worked in or covered before; and vertically, for example reaching more people in the same location. There are some key ingredients required to take a solution to scale: demonstrable effectiveness; technical capacity and capability; resilient model; networks and partnership; focused vision and strategy; and sustainable funding.

While many of the GRP grantees have not yet taken their solutions fully to scale, they do demonstrate the potential for doing so with some important examples provided in this section. **MetaMeta** was able to engage with multiple Ethiopian governmental organizations, including water, roads and agriculture authorities across departments at national, regional and local levels. As part of these efforts, the Learning Alliance on Roads for Water convened practitioners working on roads for water internationally that has almost 700 members. Working at this scale has resulted in the project benefiting millions of people through road water harvesting. The project also identified numerous investment opportunities, from multilateral funds and development banks to microcredit institutions well suited to provide loans to farmers. Perhaps the greatest potential for supporting change at scale is the possibility of integrating MetaMeta's low-technology solutions to support better road water management into road-building standards via the World Bank.

GRP Incubator – Scaling resilience solutions

The pace and scale of change needed to tackle 'wicked problems' means the time available to do this is limited. Therefore, having a plan and strategy to take innovations rapidly to scale is essential if this iterative approach is to match the urgency of the issues. Unfortunately, the evidence across the wider partnership is weak in terms of successful examples of where effective innovations have been taken to scale for building resilience. This is a gap in the evidence, which needs to be urgently addressed. Partly in response to this, GRP has established the Incubator (see Box 9).

Box 9: GRP Incubator

The role of the Incubator is to contribute to GRP's vision for resilience by identifying effective resilience solutions and supporting them to scale, to increase resilience at community, organization and sector level. In so doing, it intends to help develop a sustainable ecosystem for resilience scaling and contribute to a knowledge base that enables others to learn about scaling of resilience. The GRP Incubator, which is actively working with grantees, assesses, mentors, connects and improves resilience solutions. The Incubator has the following aims:

i. Organizations reduce their dependence on donor funding;
ii. End-users of the service or product have a greater stake and voice in enterprises as customers rather than passive beneficiaries; and
iii. With a more entrepreneurial mindset, organizations and enterprises are more able to recognize opportunities in change, going beyond surviving to thriving in a context of shocks.

The platform is currently offered primarily to GRP grantees in GRP's own challenges, with a long-term aim of offering it to NGOs, companies and development agencies wanting to take ideas to the next level. It provides support across the following areas:

- **Innovation process and validation:** The Incubator can provide a suite of support through innovation processes, drawing on its own extensive experience in product, service and model development and validation, as well as through its wider partners.
- **Sustain-and-scale assessment:** This assessment looks at how sustainable and scalable the initiative is, and what the prerequisites are for scaling.
- **Challenging and mentoring:** This process is carried out in close collaboration with the incubation participant and as a way to identify weaknesses and ways of addressing them.
- **Technical expertise and advice:** Often the incubation participant sits on the best specific understanding of the problem. Sometimes not. If specific expertise is needed, and this need is identified and validated in the mentoring process, the Incubator provides support in getting it.
- **Leadership and organizational development:** With execution being one of the biggest reasons for suboptimal outcomes (and lack of impact) in initiatives, one of the most important aspects of what the Incubator does is to build the people behind the work.
- **Funding support and network:** The Incubator, and GRP as a whole, has a vast network of potential funders from both the public and private sector, as well as an extensive network for potential partners.

The Incubator was established to identify and scale effective resilience solutions, providing a platform for skills and capability building to support GRP grantees to build resilience at scale. GRP grantees are asked to think about the sustainability of their project results from the start. They have to provide tangible evidence and respond to questions on scaling and sustainability are part of periodic and final reporting.

Water Window challenge scale grantees had to develop exit-strategies and include this as part of their final report. Seed grantees needed to provide a 'proof of concept' of their proposed innovation. To ensure this would not be an afterthought, grantees had to outline their approach to developing the scaling or exit strategy as part of their Monitoring, Evaluation and Learning plans. This needed to include clear indicators for scalability and sustainability (e.g. signed Memorandum of Understanding, budget committed by partners) and consider how influencing and shaping policy and institutional change can deliver impact at scale.

The current round of grantees being supported by the Incubator, includes five organizations who have trialed and tested their resilience approaches through the USAID sponsored Global Resilience Challenge. These grantees have been through a process of assessment with the Incubator team to clarify the suitability of their concept for scaling; and have since been collaborating with the Incubator to co-generate their scaling plans. They have been awarded a six-month contract and up to US$250,000 in funding to get their scaling work off the ground. Throughout this process they have access to GRP MEL, communications and policy support as well as scaling support from the Incubator.

A case study on GRP scaling (forthcoming) found that grantees benefit from the support in increasing their global networks. The support has been valuable in terms of one-to-one interaction, communications and marketing support, all of which are sources of practical advice. Given the limited knowledge on how to scale resilience solutions, the work of the Incubator team, and the knowledge they are developing along the way, is a critical resource. Learning is critical to support the development of more refined mechanisms for scaling, and to develop a sustainable ecosystem of knowledge and support for scaling.

INTERVIEW INSIGHTS – Funding for resilient farmers

Jonky Tenou – IFAD Task Manager for the Integrated Approach Program (IAP)

Jonky Tenou is the Task Manager of the Integrated Approach Program for foods security and resilience in sub-Sahara Africa, working with IFAD (International Fund for Agricultural Development) at Environment, Climate, Gender and Social inclusion Division in the Sub regional hub Addis Ababa, Ethiopia. He has over 15 years of hands-on experience in climate change, disaster risk reduction, environment and natural resources management and in advancing human development in complex development context.

Watch video

Could you introduce how you've been involved in resilience work? I'm the Task Manager of the Integrated Approach Program (IAP) on fostering sustainability and resilience for food security in sub-Saharan Africa - Resilient Food Systems (RFS). It's a multi-agency program funded by GEF (Global Environment Facility) led by IFAD. Various actors like World Bank, UNDP, UNEP, UNIDO, FAO, ICRAF, Conservation International, Bioversity International and AGRA are all partner of this program at the regional and country levels.

How does the project contribute to enhancing resilience in the area? The program has engaged twelve African countries (Burkina Faso, Burundi, Ethiopia, Ghana, Kenya, Malawi, Niger, Nigeria, Senegal, Swaziland, Tanzania and Uganda), all are located in the dryland regions of sub-Saharan Africa where the threat of environmental degradation and climate change is a major constraint to food production. The program targets especially smallholder farmers, working to improve their resilience and helping them to strengthen soil health, improve access to drought-tolerant seeds, adjust planting periods and cropping portfolios, and enhance on-farm agro-biodiversity. The twelve country projects have been screened through a resilience angle by emphasizing several key principles to ensure consistency across the program. Investing in rural people and building their resilience to climate change and agricultural risks is the core of our work.

Have end users been involved in design or implementation aspects of the program? The program is advancing an integrated and holistic approach to environmental management for food security, through multi-stakeholder frameworks that engage smallholder farmer groups, private sector entities, government and scientific institutions at all levels. Smallholder farmers as end users are the key players in designing and implementation of the program and are part of multi-stakeholder platforms that deliver cross-cutting capacities and knowledge services.

What message do you have for a donor or funder considering whether to invest in resilience building? Sub-Saharan Africa smallholder farmers are the most vulnerable to climate change and other extreme weather events. Investing to build smallholder resilience and safeguarding their livelihoods is essential for poverty alleviation in rural areas. This needs an integrated and holistic approach where the donor community, private and public sector and civil society each have an important role to play. The RFS program strongly believes that more investment in building resilience could lead to a rural transformation and sustainable growth in sub-Saharan Africa.

5 Recommendations for future resilience programming

GRP's position as a partnership provides a unique opportunity to work in a flexible and focused way to support its partners to drive resilience solutions to scale. To date, this has involved harnessing the latest evidence and knowledge across the network, mobilizing finance for challenge funds and raising resilience on the global political agenda. We have identified ways in which GRP can optimize this work in the future, based on the evidence presented in this report. The next sections (summarized in Table 3) provide a set of recommendations that are aligned with the four ways in which GRP adds value to its partners.

Table 3: Overview of recommendations segmented by relevant audience

No.	Recommendation	Implementers and practitioners	Donors	Research and evidence	Private sector	Government
1.	Be transformative by design	X	X			
2.	Plan and invest for the long term	X	X			X
3.	Move to rapidly scale up innovations that work and adapt or abandon those that don't:	X	X		X	X
4.	Build capacity and create systems to support shared learning	X	X	X		
5.	Encourage genuine community-led planning and co-design	X	X	X		X
6.	Move from gender sensitive to gender transformative	X		X		
7.	Build agile partnerships and networks across scales	X	X	X	X	X
8.	Strategically engage private and public partners	X	X	X	X	X
9.	Address gaps in resilience knowledge	X	X	X		

5.1 Provide a safe space to innovate, test and rapidly scale

Recognizing that complex and intractable issues require innovative and tailored solutions, GRP works in cycles of innovating, testing and adapting. GRP empowers local actors to lead problem identification and solution development, seeking to test and scale disruptive ideas that are "off the beaten track" and daring in premise.

RECOMMENDATION 1 – Be transformative by design:

Transformative change can take time to deliver; however, there are also quick wins and immediate support which can be delivered quickly. Ensuring that the former does not hamper the latter is critical and central to resilience programming – meeting needs today may lock in behaviors that may be vulnerable to tomorrow's shocks. Programs need to address underlying drivers and focus on the underlying factors of vulnerability to increase the chance of transformative change. Implementers need to build this into resilience program design. Donors need to consider mandating this as part of award criteria.

Design considerations:

1. **Design systemically:** It is crucial to spend time understanding systemic implications before designing interventions. Carefully taking system dynamics into account is vital to understand how risks manifest and to create interventions in line with resilience principles. We need to invest in this pre-design work, which is currently not always well supported by funders. Getting this right is critical by designing initiatives that take into account:
   a. Different levels of the system;
   b. Actors or agents within the system;
   c. Exogenous and endogenous enablers and constraints to success;
   d. Resources – what they are and who has them;
   e. Linkages between different elements in the system; and
   f. Flexibility in the face of unpredictability.
2. **Conduct context, political economy and systems analyses:** This should be carried out at the earliest stage of design using the appropriate tools for formalized systems analysis, which are now widely used for many applications.
3. **Theory of Change (not a logframe):** More traditional tools in the box of most development and even humanitarian agencies are Theory of Change or Logic models which describe how they think (theorize) a change or impact will be brought about through a series of related steps. These are often overly simplistic and linear; and while the entirety of a system could never be fully captured, more attention needs to be paid to embracing complexity and identifying where amplifying or dampening feedback loops might affect project success. This should then be revisited periodically to learn and adapt or adjust the combination or sequence of interventions.
4. **Consider and design for multiple shock contexts:** 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.
5. **Plan to work in the 'nexus'**: Designs should 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, but for most cases humanitarian and development initiatives are separated despite sharing overlap in asset and capacity interventions.

RECOMMENDATION 2 – Plan and invest for the long term:

Bringing about sustainable and systemic change requires greater planning horizons. Two or three years are not sufficient. There is a need to move beyond projects to whole system interventions. Pushing projects to innovate or 'fail fast and fail smart' may be helpful in driving innovation and delivering results, but this must be complemented by longer-term systemic commitments to regions. Here hybrid modalities such as combining a challenge fund with longer-term phased grant funding and more systemic policy-influencing work at different levels of the system and planning cycle. Doing this can reduce risk exposure to failure by building in stage gates.

Design considerations:

1. **Give careful thought to the sequencing and timing of interventions:** Some of the best and most sustainable outcomes we have observed are the result of multiple interventions, either in parallel or often in sequence. For example, women's empowerment through provision of financial literacy training linked to VSLAs being established, with loans being used to diversify to less at risk livelihood activities, which in turn are connected to established financial institutions. Quick wins can be important as they provide practical examples to engage communities and ensure buy-in of resilience-enhancing efforts.
2. **Align program timelines with realistic time frames for change:** Rapid change is possible. However, as we have documented, transformative change requires shifting policies, institutions and deeply embedded social and cultural norms. Therefore, planning and funding horizons should be adjusted to accommodate this. Phased approaches can work here. Plan and think strategically and long term, but be agile and take advantage of short-term 'wins'.
3. **Early success and flexible funding:** Repeated cycles of innovating, testing and adapting may take longer to deliver than some donors or investors are usually willing to wait for results, especially if subject to political and fiscal cycles. Convincing donors and investors to commit long term may require demonstrating early successes and more flexible funding mechanisms.
4. **Adaptive management:** Given the difficult contexts, the ability to be flexible and adaptive in resilience project planning and execution is crucial. This can be neither expected nor demanded from projects bounded by conventional results-based management and logical framework (logframe)-driven reporting practices. Resilience programs must therefore find hybrid management models that ensure accountability and enhance flexibility in project design, decision making and funding.
5. **Flexible contingency funding:** Flexibility and adaptability needs to be extended to the way in which funds are managed, accessed and disbursed to match need at different times and in the face of unpredictable threats. While desirable, this is not always feasible when contending with rigid accountability and procurement rules, in particular from public finance (for good reason).

RECOMMENDATION 3 – Move to rapidly scale up innovations that work and adapt or abandon those that don't:

There is now sufficient evidence from almost a decade of programs aimed at enhancing resilience to identify solutions which work, some of which have been presented in this report. These need to be replicated and scaled to reach more people in more contexts.

Design considerations:

1. **Foundational work**: Design sequencing is vital to get right. Ensuring that all aspects of governance, administration and monitoring, evaluation and learning are in place from inception will greatly increase not only the chance of success programmatically and in terms of resilience outcomes, but also opportunities to learn from the outset.

2. **A strategy for sustainability:** The characteristics of resilience building mean that supporting grantees to move along the innovation pathway toward scale requires a clear strategy for sustainability. Be clear and explicit about scaling, including what it means, what is possible, what the options are and what the learning process is.
3. **Match service provision to well understood need and demand:** This links to the need to understand the system within which a project or program is working. Understanding who has the power to influence decisions to start using a product or service, what the demand is for it or what laws or regulations influence this is an important part of scaling work.
4. **Develop scaling strategies** ex ante, **not** ex post**:** A clear plan for how the intervention can be replicated, scaled up or out should be in place at design stage. Making effective resilience-building work benefit more people for longer requires operating from the field level – households, local government, ecosystems – to higher levels of government and institutions. Failure to do this work 'bottom-up' *and* 'top-down' may reduce the chances of a sustained and wider effect. Deliberately linking the two (e.g. challenge funds with policy workstream) can be effective and efficient at delivering greater resilience impact.

5.2 Promote shared learning and capacity development

How communities and countries enhance resilience depends on their capacity to anticipate, plan and take action. There is a need to promote and accelerate shared learning and capacity development of public, private and civil society organizations around resilience planning, policy and programming.

RECOMMENDATION 4 – Build capacity and create systems to support shared learning:

Without understanding what is and is not working well in a constantly changing environment, it will not be possible to support programming components such as working flexibly, linking effective interventions or ensuring inclusion. This requires accelerated capacity building and learning across institutions, practitioners and geographies. This should ensure the best available knowledge and expertise is used to design new resilience programs and incorporated into national and regional policies and plans.

Design considerations:

1. **Ensure there is a shared set of resilience principles** that can be used conceptually and operationally. This can then be included in any guidance to funded projects as well as be published via a Theory of Change and in communication materials**.**
2. **Monitoring, evaluation and learning (MEL) systems:** In order to support adaptation and flexibility, investing in generating and using information to inform decision making is critical. MEL systems should be designed to match the type of information needed.
3. **Learn (quickly) from failure:** This means projects should have learning and flexibility built into their designs, encourage a degree of experimentation and risk taking (adhering to the principle of 'do no harm'), and use monitoring and evaluation as a feedback system that fuels real-time learning – especially learning from failure. Do not be afraid to quickly stop solutions which are not working. The openness to working in this way will be influenced by project timelines, the organizational culture and how internal feedback loops happen.
4. **Metrics matter but more consistency is needed:** Resilience measurement debates have raged for the last decade (and we do not intend to reopen them here!). However, having consistent measurement both internally (within a project) and externally (across a portfolio of projects) is critical. Translating metrics into messages using language that can be understood by donors, private sector actors and beneficiaries alike will help to ensure continued support.
5. **Balance learning with 'proving':** Demonstrating that resilience has been enhanced is only really possible in the face of a shock, which may be outside of a project research or evaluation time

frame. Large sample surveys to support quantitative assessments are expensive and are suitable for accountability and identifying innovations to scale, but may not always yield useful, portable or generalizable results. Where robust impact assessment is not feasible or useful, the focus should be on information that is 'good enough' to learn and make decisions quickly, adapting and adjusting accordingly.

6. **Post project evaluation and assessment:** Much of the evidence presented in this report comes from evaluations and research conducted during or at the end of projects. There is very limited evidence from after projects have finished, which can assess the sustainability of interventions or how long lasting or durable program results have been. This means that sustainability measures incorporated during projects remain assumptive. Commissioning these sorts of studies – which can be rapidly conducted using mobile technology at points in time post project and even post shock – will help to fill this gap.

RECOMMENDATION 5 – Encourage genuine community-led planning and co-design:

Wherever possible, the target community should be involved in the design of the project or interventions. This will help to surface their priority needs, identify their particular vulnerabilities and increase the chances of sustainability beyond the project lifetime. Some parameters may need to be set in terms of what is possible and it is critical to ensure that the wider community perspective is included, not just that of those in power. Reaching the most vulnerable is not easy and requires commitment from implementers and funders. It may also take longer to do and to deliver results.

Design considerations:

1. **Reciprocal community engagement:** One of the keys to successful interventions lies in working with people rather than "doing things to them." Ensuring interventions are co-created, that they meet the needs and interest of stakeholders, and that lessons and evidence from the intervention are shared clearly are key to helping people engage. This kind of reciprocal engagement increases trust and helps sustain community involvement
2. **Improve vulnerability assessments**: 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 articulated by the people themselves, according to their cultural perspectives. Deeper application of a vulnerability lens implies the need for sufficient time and resources being committed to vulnerability assessments, and program staff may need to be trained in new technical skills if they are to apply them.
3. **Do not consider the results static:** As with resilience, vulnerability is not a static state, particularly in the face of multiple risks. People can move in and out of crises rapidly and frequently. Revisiting assessments is good practice but also having a flexible way of targeting is critical. This is particularly the case for interventions such as social protection measures, which exclude people based on indicators of poverty or vulnerability.
4. **Consider intersectionality**: Just as initiatives operate in multiple-shock contexts, there can be multiple complex and interlinked reasons for people being excluded (e.g. race, caste, language, gender, age, disability). These often intersect to compound the vulnerability of a person or group so focusing only on gender, for example, may not be sufficient.

RECOMMENDATION 6 – Move from gender sensitive to gender transformative:

A policy, program or project that considers and aims to address the specific needs, interests, capacities and contexts for women and men can be considered gender sensitive. However, to be gender transformative and support lasting change, programs should aim to tackle gender relations in favor of the equal sharing of power by women and men. This involves revising the sociocultural, political and economic structures and norms that underpin inequalities.

Design considerations:

1. **Conduct gender analyses as part of the context and vulnerability assessment:** A tool for documenting and understanding people's lives from a gender perspective; for example, their circumstances, needs, interests, roles, responsibilities, relations, activities, opportunities, vulnerabilities, capacities, participation, power, command of resources and exercise of human rights.
2. **Tackle underlying dynamics:** A number of programs associate women's empowerment – or even transformation – 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. By working with men from the same households, projects were able to gradually overcome male reluctance to women taking on new roles.
3. **Beware of increasing burdens through inappropriate interventions**: Poorly designed interventions are at risk of exacerbating existing norms and power dynamics that lead to vulnerability. Consider what the unintended consequences of an approach might be; for example, stimulating increased women's economic activity may mean they have additional tasks on top of their gender-defined roles.

5.3 Convene diverse voices to shape policy and investment

GRP convenes its partners, builds networks and leverages opportunities for engagement to advance the case for and investments into resilience. GRP believes that particular attention is needed on ensuring that diverse voices, including the most vulnerable who are at the frontline of resilience challenges, are at the center of this dialogue.

RECOMMENDATION 7 – Build agile partnerships and networks across scales:

Single organizations are highly unlikely to be able to deliver all the services and activities required for effective resilience building. Access to the most vulnerable and to the organizations and institutions necessary to reach them can be achieved through effective partnership – all projects discussed in this report have demonstrated the importance of this. The nature and quality of networks is important, and successful resilience interventions need to be explicit early in the design process about identified gaps or constraints that may be met by a key partner.

Design considerations:

1. **Stakeholder mapping and social network analysis are useful tools in the box:** In order to ensure the right partnerships are being established, understanding the different actors and if and how they relate is important. This does not need to be a laborious task and there are simple tools that can help, which can be used at the outset and revisited over time and as required.
2. **Build on who is there:** Resilience-enhancing projects need to consider a wide set of project stakeholders, each as 'active agents' within a system and each with relative and interacting roles and responsibilities when it comes to resilience building. The focus of the project then becomes how best to enable these actors through supporting the building of different yet dependent capacities and abilities.
3. **Build on what has been achieved:** Align policy-oriented engagement with challenge fund grantee work where opportunities arise. If connections and engagement have already begun at a national or even regional level, there is an open door to push at. Grantees may already have the established partnerships and good political capital with key ministries to provide access for greater dialogue and advocacy work.
4. **Work across scales:** Link on-the-ground project work to different levels of the system. Demonstrating what works on the ground to national and regional governments can vertically integrate successful interventions.

RECOMMENDATION 8 – Strategically engage private and public partners:

Many national and local government institutions, businesses and civil society organizations are building resilience into their policies, programming, investments and plans. To realize their commitments these diverse stakeholders will need to be convened on how to invest in resilience for development. While there is considerable support for climate action on mitigation and low-carbon development, there is limited coordination and convening space to shape policy and investments around resilience and climate adaptation.

Design considerations:

1. **Recognize the advantages of working with private sector actors beyond finance:** The private sector's ability to innovate, move quickly to scale and work flexibly is a good fit for resilience-oriented work. Directly engaging the private sector beyond tapping into corporate social responsibility priorities requires a better understanding of motivations, which include but are not limited to profit. De-risking entry to new markets with new tools that can provide benefits to customers and business is important and can increase provision to the hardest to reach. Addressing downside risk through offering scale and linking to insurance products can help to unlock private sector investment.
2. **Engage the private sector early, initially focusing on the right incentives but also offer longer term value propositions:** Whether a local seed seller or a multinational corporation, understanding the motivations, influence and incentives of private sector actors who can enable or constrain resilience-oriented work needs to be considered early in the design process and leveraged for mutual benefits.
3. **Ensure a good fit with national government budgets:** Gold standard interventions reduce the likelihood of government uptake. 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 of resilience funding available at national and sub-national levels. Aligning with and supporting relevant national government policies and initiatives where appropriate will likely improve sustainability and the potential for scaling successful interventions.

5.4 Advance collective understanding and knowledge about resilience

Knowledge generated about what works in strengthening resilience can be promoted to amplify positive impact across geographies. GRP will provide a platform for partners to access, co-create and advance the latest knowledge on resilience for development. GRP will coordinate, convene and translate state of the art resilience knowledge for its partners and the wider resilience community.

RECOMMENDATION 9 – Address gaps in resilience knowledge:

The demand to increase resilience action and investment is growing, and filling the knowledge and evidence gaps is imperative if we are to help build a resilient future. This report is based on a limited number of resilience programs, designed and implemented by GRP partners. We recognize that there are ways of resilience programming yet unexplored by the partnership – and acknowledge the myriad inherent limitations in producing a report on a topic as wide as 'resilience programming'. Creating a fair, prosperous world that maintains and strengthens planet Earth's life-support system requires transformative changes. Together, the partnership can explore opportunities for change by embedding some of the aspects identified into programming designs and implementations. However, substantial additional research is needed.

Design considerations:

1. **Build the business case for resilience:** There is a need for better metrics which speak to private sector actors and the information they need to unlock finance flows. Invest more in demonstrating the social and economic value for investing in resilience programs and initiatives. More accurate and cost-effective ways of measuring these values are needed and must be appropriate and relevant for those who will use them to make decisions on where to invest. A major gap includes 'quantifying' the triple dividend for ex ante decision making.
2. **More research effort is required in the following areas:**
   a. Systemic and transformative change: Better ways of understanding and measuring these changes are needed.
   b. Psycho-social resilience: The long-term effects of exposure to recurrent shocks is poorly understood but may undermine the capacity to respond.
   c. Resilience in conflict contexts: How to build, track and measure resilience in conflict contexts is not well understood. Issues of access, immediate humanitarian relief and the often-protracted nature of these settings means there is limited evidence on how to best bring about change.
3. **Mobilize indigenous and local knowledge for resilience:** This is key and allowing the time needed to build and maintain these partnerships is therefore important and should be considered in future resilience programming.

INTERVIEW INSIGHTS – A climate resilience champion

Dr. Saleemul Huq - Director of the International Centre for Climate Change and Development (ICCCAD) at the Independent University, Bangladesh

Dr. Saleemul Huq is the Director of ICCCAD at the Independent University, Bangladesh since 2009 and Senior Fellow at the International Institute for Environment & Development. He has worked extensively in the inter-linkages between climate change (both mitigation as well as adaptation) and sustainable development, from the perspective of developing countries, with special emphasis on least developed countries. Dr. Huq has a PhD in plant sciences from Imperial College, has published numerous articles in scientific and popular journals and has co-authored assessment reports of the Intergovernmental Panel on Climate Change (IPCC).

Could you introduce how you've been involved in resilience work? I'm based in Bangladesh where my center is located. At the same time, I coordinate a network of universities based in the least developed countries, which are 47 of the poorest and most vulnerable countries in Asia and Africa, with whom I have been working for many, many years on adaptation to climate change. So, my entry into the world of resilience and the term of resilience comes from a climate change perspective. For us, the operative term adaptation to climate change is what we refer to as resilience. There are many definitions of resilience, but my entry point is: Making people, particularly the most vulnerable communities around the world, resilient to the adverse impacts of climate change, which are no longer going to happen in the future, they're already happening now.

How does your work contribute to enhancing resilience? I work on enhancing the adaptive capacity and thereby resilience of some of the poorest, most vulnerable people on planet earth. They are being affected right now by the adverse impacts of climate change. This is something they never caused. It was caused by rich people, both in rich countries and in poor countries. The challenge is a governance challenge. The reason why poor communities happen to be the most vulnerable in any country, is that they are neglected by the rich and powerful decision makers. They don't have a voice in decision making and therefore they are neglected, and they are left to fend for themselves. And they happen to be amongst the most vulnerable to the impacts of climate change. It's a matter of geography and lack of democracy. So the idea then is giving them further knowledge about the impacts of climate change, enabling them to figure out what they can do on their own, but even more importantly, enabling them to figure out what they can do collectively, to raise their voices, both at the national level and at the global level. Because this is now a global phenomenon. It's no longer just poverty, it's climate change.

How is climate change affecting Bangladesh? Bangladesh is a good example of a country that's way ahead in terms of having understood the problem, tried to figure out what we can do about it and in fact investing both money and effort to try and go up the learning curve in terms of making ourselves more resilient. I'll just give you one of many examples: So, one of the biggest problems we have is a combination of sea level rise and low flow in the river Ganges, which is increasing salinity in the low-lying coastal areas of Bangladesh. As a result of this the traditional rice varieties simply cannot cope any more. However, in the last few years our rice research scientists have come up with at least a dozen saline tolerant varieties of rice. These are being promoted by private sector agriculture companies at a price higher than the local varieties, but farmers take it because they are resistant to salinity. Now tens of millions of farmers in tens of thousands of hectares are growing saline tolerant rice varieties developed by our rice research scientists. And that is just one example. What has happened in Bangladesh, and what we hope to happen in the other 47 least developed countries, is a transition from seeing ourselves as primarily and only vulnerable to climate change, to becoming the most resilient to climate change - because we have to.

What are the main challenges faced in working with resilience? The world's country governments have failed to address the global problem of climate change. They have to come together; they have to agree to do things and then they have to do what they agreed to do. They did agree to do things, but they didn't do what they agreed to do and that's the biggest failure and therefore we have a big problem on our hands. In fact, the problem has become less of a problem and more of a crisis. So, we are now in a crisis because the global system has failed to deal with it. Hopefully that will change. One of the big transitions that I see happening that can make them change is that children are rebelling against their parents. The parents are the ones that caused the problems, so maybe this will work.

Do you think that there is a need to rethink development practice and what role could resilience play in that? Working with the most vulnerable in the most vulnerable countries, we need to transform ourselves as well. The first step of that transformation is to leave behind the concept or paradigm of victimhood and take on the concept or paradigm of agency. We are warriors, we are at the forefront, we are at the cutting edge of dealing with climate change. We may survive, we may not survive, but we're going to have to try and we're going to have to use our own resources to the extent we have them We can't wait for somebody to come and rescue us. We want all 47 least developed countries to become resilient by 2030 and we want to be transformational by 2050. The big difference between the two is a generational shift, so transformation will come from our kids not from us. The adults cannot transform. We are too set in our ways, but our children can. It's not money, we don't need money. We have very, very bright young boys and girls, as bright as any in the world. If we give them the right kind of guidance and education we can make them into warriors, innovators, problem solvers and they can then transform their own countries and the rest of the world as well.

What message do you have for a donor or funder considering whether to invest in resilience building? The main message now, and it's a very different message from what I've been giving for many years, is that it's no longer counting the cost of action. It is counting the cost of inaction and the cost is going to be so high that everybody on planet earth is going to regret their inaction. So now the smart thing is action. We have to tackle climate change and once you start thinking of it as a smart thing to do, it can actually be a profitable thing to do as well. It can help people and shift the paradigm, shifting the way we think, getting out of the old way. Our dependence on fossil fuels has to end absolutely. Once you start thinking positively about tackling climate change, opportunities arise and those opportunities are good for people, good for countries, good for the development pathways of different countries in a way that business as usual was never going to be. It is to me a much, much brighter future opportunity. And the quicker we grasp it, the quicker we do the best for everybody on planet earth.

6 Conclusions

This report has presented a body of evidence from across the partnership that indicates resilience initiatives are producing results, which are supporting people to better prepare for, cope with and adapt to the threats they face. These results have been produced in very different contexts, in the face of different shock types and magnitudes and using a variety of different methods. Resilience outcomes have been achieved in a range of areas including: secured livelihoods; women's empowerment; improved natural resources; access to and control over savings, loans and insurance; more timely and accurate information and knowledge; increased agricultural productivity and social capital.

GRP partners have demonstrated a broad range of solutions to tackling vulnerability across different geographies and in the face of multiple threats. While tailored to context, the approaches used by implementing agencies across the partnership are commonly in five different intervention areas: (1) nature-based solutions; (2) empowering marginalized groups; (3) capitalizing on information and technology opportunities; (4) making financial services and markets more inclusive; and (5) deploying low-cost infrastructure solutions. While a range of interventions has been used, the evidence reviewed suggests there are some common components that make resilience programs different from 'business as usual' development programs.

There is good evidence from the GRP challenge funds that suggests projects have supported people to be more resilient to the threats they face. There is more limited evidence indicating that these successes will be long term and sustainable. This may be largely owing to the short delivery time frames. There are signs that some of the GRP projects have significant scaling potential and these opportunities are being nurtured by the GRP Incubation Hub. There is strong evidence based on robust methods that long-term and established GRP partner programs have delivered resilience outcomes in the face of a shock or stress. In some cases, there is evidence that these outcomes or capacities have protected development gains such as food security in the face of climate impacts.

The evidence gathered suggests there are some important design considerations to take into account when planning a resilience initiative. These link to the resilience program components proposed and spell out specific measures which should be taken for each. It takes strategic thinking and planning, systemic knowledge and time to address more systemic issues and 'shift the needle' on resilience-enabling policies. Long-term commitment is required but demonstrating effectiveness through quick wins can build interest and trust.

Working in cycles of innovating, testing and scaling is desirable but needs to match the pace of change required. GRP Innovation Challenges have been successful at surfacing effective solutions but these interventions now need to be replicated, scaled and mainstreamed. GRP and its breadth

of partners are well placed to play an important role in ensuring that the most vulnerable people and places are able to thrive in face of greater surprise, uncertainty and change. By accelerating innovation, promoting rapid peer-to peer learning, bringing diverse voices together to shape policy and investment, and continuously advancing our collective understanding of resilience, we can bring about the transformative change required.

Our 5 key insights

1 Why resilience

Traditional development no longer works in our increasingly unpredictable world, we need innovative resilience approaches that allow vulnerable people and places to thrive in the face of surprise, uncertainty and change.

2 Resilience works

GRP Innovation Challenges supported 5.7 million people, with strong evidence that GRP partners delivered resilience outcomes.

3 Effective interventions

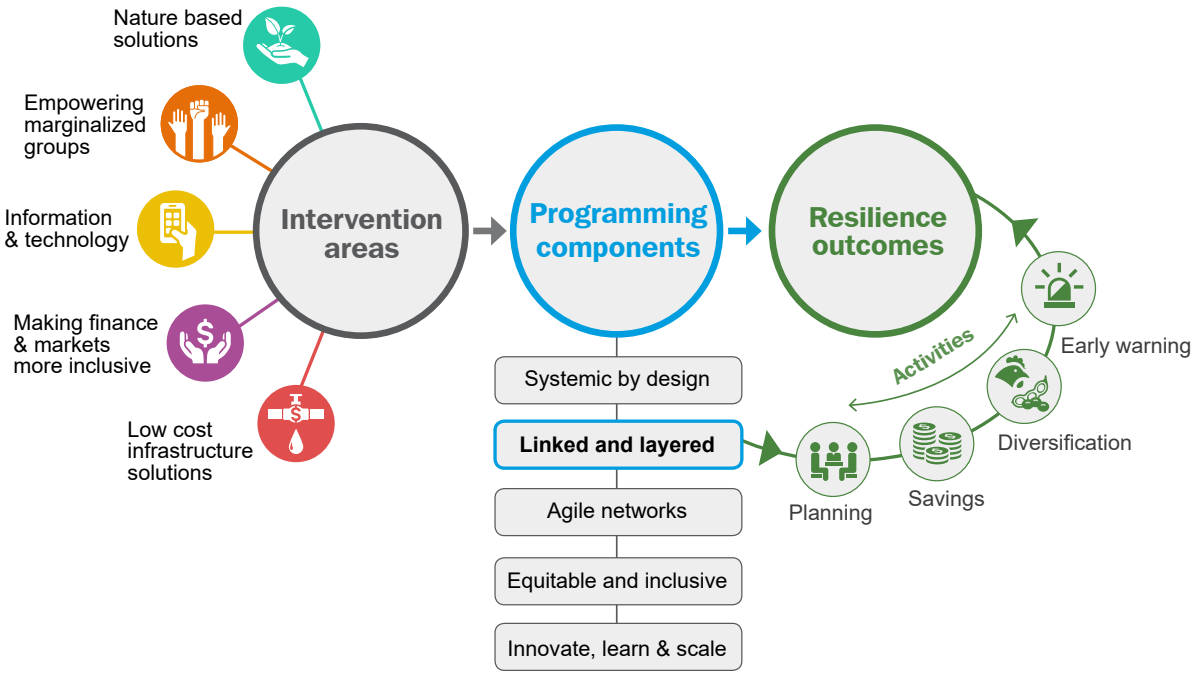
There is no single solution to building resilience, but the evidence points to five common intervention areas used to leverage resilience results (see diagram below).

4 Critical Components

Evidence collated across the breadth of the partnership points to five components for effective resilience programming (see diagram below).

5 Designing for impact

Incorporate our resilience recommendations and design considerations to add value and amplify collective impact.



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Annex 1: Global Resilience Challenge grantees

Building Resilience of Smallholder Farmers in Southeast Asia

Building Resilience of Smallholder Farmers in Southeast Asia

Grameen Foundation delivered services to **26,732** beneficiary households comprising **133,660** family members

67,498 female **(50.5%)** and **66,162** male **(49.5%)**

Key learning: The suite of mobile extension tools developed resulted in users being able to act on weather information provided. Grameen's participatory approach created buy-in among partners, and consortium diversity enabled the delivery of integrated services that were better able to address the complex realities of beneficiaries. The Philippine Coconut Authority saw the advantages and embedded he technology within the government's operations. Another partner signed a contract to continue using data collected from the project to target smallholder farmers more efficiently.

Resilient Rural Livelihoods in Ecologically Fragile Drylands of the Sahel

60,021
people within
148 villages across
Mali, Senegal and
Burkina Faso

10,102
farmers applied
13 technology
or practices

231
Organizations have received agricultural or food security related organizational development assistance through the project

Key learning: As a result of the project, over 9,000 households in targeted villages adopted agro-ecological innovations. Of particular importance are outcomes around gender and women's empowerment, with women receiving training on farming methods and access to new credit groups. This resulted in more influence over family decision-making and improved capacity to generate their own income. Inclusive stakeholder engagement combined with a participatory approach created buy-in and contributed to adoption of agro-ecological practices. Demonstration days enabled village leaders and farmers to engage with policy-makers and generated media coverage.

Satellite Technologies, Innovative and Smart Financing for Food Security (SATISFy)

An end line survey for **1,170** households in **5** sub-counties was carried out and completed in May 2018

IFPRI obtained **USD 430,000** in funding from 3ie to further evaluate RCC in Kenya

Key learning: IFRPI is developing and piloting a Risk Contingent Credit (RCC) product for smallholder farmers in Machakos, Kenya. RCC is a financial product that embeds insurance in credit, in this case against drought risk. The underlying risk is captured through development of satellite-derived drought Index that integrates environment key variables (e.g. rainfall, vegetation and soil moisture) based on state-of-the-art remote sensors. The project is based around a Randomised Controlled Trial to assess uptake of the new product. Early evidence shows higher uptake of the RCC than traditional loans. Further work is ongoing to examine reasons for and against uptake.

New Roads for Resilience: Connecting Roads, Water and Livelihoods

3,006,000
beneficiaries

4,348
people received trainings

Beneficial road water management practices implemented on **84,254 ha**

32
institutions trained

Key Learning: This project used low-technology infrastructure interventions, ensuring road water run-off was harvested effectively. By combining capacity-building and communication activities, MetaMeta brought together diverse groups of actors. With a government organization as part of the consortium, MetaMeta was able to create a critical mass of national and international practitioners specializing in the subject of roads for water – formalizing stakeholder buy-in and contributing to the project's sustainability.

Linking Social and Financial Capital to Enhance Resilience of Agro-Pastoral Communities (LEAP)

The project reached **227,992** people who listened to financial education messages on local radio

8,320 members signed up with **312** VSLAs in **107** villages in Mali and Niger

88 groups (**1,333** members, **88%** women) received **$153,000** mobile loans

Key learning: Key outcomes for this project include the number of people receiving financial education messages, coupled with climate change adaptation training and access to loans and financial services. There were particularly strong outcomes in relation to women's involvement in financial decision-making, with the project using research into women's economic involvement to inform their activities. Mercy Corps' inclusive approach encouraged partners to invest to increase the project's geographical coverage. Stakeholders also identified new knowledge-sharing opportunities – giving the project national exposure.

Mitigating Pastoralists' Risk: Livestock Trade in the Horn of Africa

23,711

beneficiaries reached through the Mifugo Kash Kash (MKK) pilot in Wajir County

As of the end of the program CTS disbursed USD **124,940** in loans

Key learning: Through this project, 2,000 livestock-keeping households benefited from additional sales and a value chain financing product was piloted and adapted based on important learning. A participatory approach to project design helped break down barriers within the consortium and enabled beneficiaries to input into decisions affecting their resilience. Moreover, collection of project feedback helped identify an issue with the initial version of their financial product and informed its redesign.

Devising Local Coping Mechanisms and Adaptation Technologies to Build Climate-Resilience Capacities of Urban Poor in South Asia

Mahila supported **135,275** people

114 women-led Community Action Groups, with **1,355** women and **249** adolescent/youth representatives, mobilized **27,055** slum families into Community-Based Organizations

multi-stakeholder partnerships in **7** cities reaching more than **280** experts, government officials

Key learnings: MHT's multi-layered intervention had particularly strong outcomes in relation to women's empowerment, increasing women's agency to act, to link with key stakeholders and to make positive change to increase their resilience to climatic events. As a result of the project, 35% of households involved in the project have become less vulnerable to climate-related risks. The project also resulted in improved links between communities and municipal governments and increased knowledge and awareness, contributing to a reduction in vector-borne diseases. Transferability of its model enabled replication in cities across India.

Harnessing the Power of Technology to Catalyze Value Chain Efficiency Improvements to Build Resilience, Catalyze Inclusion and Reach Vulnerable Smallholders

332,500

beneficiaries benefited

66,500

smallholder farmer households are using Wefarm, 2Kuze and other digital tools set up to support resilience in Kenya and Uganda.

Key learnings: This project used agricultural training, mobile tools and farmer-to-farmer learning to increase connectivity to markets, improve productivity and enhance diversification and profitability. Mobile tools are now being used to support resilience in Kenya and Uganda, and the mechanism for delivery (using youth workers) has affected intergenerational relationships. Training for the users of project tools and human-centered design enabled Producers Direct to solve technical challenges, empower the users and maximize benefits. Moreover, partner engagement in strategic planning secured partner buy-in and investment for project scale-up.

Disability and Disasters: Empowering People and Building Resilience to Risk

22,068
beneficiaries have been supported

912
people were trained, this includes people with disabilities

Key learning: University of Sydney's inclusive approach centered around capacity-building brought together diverse stakeholders, fostered cross-sectoral relationships and resulted in new partnerships. It created a collaborative working relationship with a governmental organization, raised the visibility of disability-inclusive disaster risk reduction, strengthened the knowledge base and skills of local authorities and created an opportunity to ensure disability issues would be addressed by a national action plan.

Meteorological Early Warning Systems to Build Resilience to Acute Climate Induced Shocks

1.2 million
people have been supported to adapt to climate change effects

22
institutions with improved adaptive climate change capacity

750,000
people have taken risk-reducing actions to improve resilience as a result of the information received

Key learnings: By setting up a network of weather stations and using existing mobile platforms, the project delivered early warning systems information to approximately 1.2 million people. As well as direct delivery of these services, the grantee developed important partnerships both nationally and internationally resulting in the sharing of weather data, valuable strategic national partnerships and future funding.

Annex 2: Water Window scale grantees

DANISH REFUGEE COUNCIL

73
hectares of area under innovation

84%
of end users satisfied with support

30,000
users of EWS or climate information

Key progress and learning: DRC practiced a layered approach to its Community Flood Resilience Project in Kenya, putting in place several interlinked interventions to strengthen livelihoods and build community resilience to floods. The project resulted in multiple livelihood improvements, including improved provision of clean drinking water, increased agricultural productivity and increased household income through cash-for-work schemes. Alongside these was the construction of water control and harvesting infrastructures, which both fed into the improvement of livelihoods and transformed flood risk into livelihood opportunities. The project worked in a participatory manner with a focus on women, and practiced demonstration and encouraged peer learning to spread best practice, including influencing other organizations and local government.

Lutheran World Relief
SUSTAINABLE DEVELOPMENT. LASTING PROMISE.

$370,000
value of financial services provided

84,000
users of EWS or climate information

$300,000
investments mobilised by GRP grantees

Key progress and learning: This project combines community-level approaches to increasing information and training on climate awareness and flood-resilient techniques with support to local governments on two sides of a border (India and Nepal). The project states that more than 3,000 households have adopted and are using flood resilience tools and practices, more than 3,750 have purchased insurance policies and over 84,000 have access to information to cope with and prepare for flooding. The project includes a focus on women and youth to enhance training and preparation for disaster, and has had positive support from government stakeholders as well as other organizations seeking to replicate the approach.

Key progress and learning: Mercy Corps has successfully implemented 16 pilot interventions enhancing flood resilience in both up and downstream communities as well as three large-scale interventions for flood mitigation and storm water management. The project has been carried out in a participatory way, with a focus on women's involvement. Through legalization of a Transboundary Forum, additional decision-making and influencing power has been given to stakeholders. Strong stakeholder buy-in has also triggered investment in future projects from a range of sources and had positive influence on decision making among local government and the private sector, with positive outcomes in terms of changing large-scale construction practices.

Key progress and learning: Practical Action works through layering a series of interventions to increase resilience through the provision of training in more resilient agricultural practice, access to market and climate information, and alternative income-generation options. It works through 18 local women's associations in Bangladesh, giving women better access to information from key institutions as well as training and support to create more sustainable livelihoods. Some 72% of beneficiaries are now receiving both disaster- and farming-related information services, with 95% applying that information. There is also positive evidence that farmers are sharing their knowledge with non-beneficiaries. Farmers are seeing the benefit of the new technologies, with increases in productivity despite flooding, and improved access to nutrition.

Key progress and learning: Through the work of Seacology's project in Sri Lanka, communities were supported to come together in community-led plans to conserve mangroves. They set up 347 women-led community-based organizations to deliver training in livelihoods, provide access to microloans to support those new livelihoods and provide awareness raising and strategies to conserve mangroves. The project is resulting not only in more resilient livelihoods and the conservation of mangroves, but also in community strengthening and the empowerment of women. In addition, the project is having a very important policy influence, feeding into the Sri Lankan Government's initiative to conserve all mangroves, and increasingly has a global presence.

Annex 3: Partner programs and results

Project, region	Intervention summary/typology	Results supporting resilience capacities and well-being
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, EWS and DRS, policy advocacy and women's inclusion.	According to an impact evaluation, while those benefiting from the project are more exposed to potential climate shocks, they fare better than those who do not receive support. In particular, project beneficiaries are 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.
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 EWSs, advocating for resilience policymaking, and promoting women's inclusion.	Unable to identify any statistically significant changes in higher-order well-being (e.g. food security) as a result of the project work despite an increase in resilience capacities, which suggests that observing these impact-level changes in the two-year implementation window may be unrealistic. Project interventions are associated with improved resilience scores for female-headed households, who appear to benefit significantly relative to control groups.
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; and improving the nutritional status of children and mothers.	Overall, results show positive impacts on dietary diversity, poverty status, and livestock ownership and management. These 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.

Project, region	Intervention summary/typology	Results supporting resilience capacities and well-being
Mercy Corps –MRED, Nepal	MRED worked through community-level disaster management committees in target communities as a way to adopt practices for hazard preparedness, EWS 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. Overall, MRED households reported lower rates of reliance on negative food coping strategies after the 2017 flooding events than non-MRED households. On average, their negative food coping strategies score was 3.35 points lower than non-MRED households. Considering the mean Coping Strategies Index (CSI) score was about 12, this is a large absolute difference. Further analysis showed that the financial literacy training and DRR (mitigation monitoring and engaging with community disaster management committees) contributed most to these positive outcomes.
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.	ACCRA has shaped consortium partners' programming, while at the same time supporting the development of relationships of trust between the partners, government, other civil society organizations and communities in pilot sites in the three countries as well as beyond. 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).

Project, region	Intervention summary/typology	Results supporting resilience capacities and well-being
R4 Rural Resilience Initiative, Senegal	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. The 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).	The survey found that both participants and non-participants report improved food production and consumption compared to the previous 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.
PRSAN: Projet de Résilience, Sécurité Alimentaire et Nutritionnelle [Resilience, Food Security and Nutrition Project], Burkina Faso	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.	Project participants scored positively in terms of 33% of the indicators [of household resilience] on average. This is four percentage points greater than among the comparison households, a difference that is statistically significant. 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 that the project households have significantly greater resilience, according to this measure, than the comparison households.
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 5ha or 10ha. 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 ~three-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 0.20ha to 0.45ha. 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.

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This product is made possible by the generous support of the American people through the United States Agency for International Development (USAID) and the support of the Z Zurich Foundation. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID the United States Government or the Z Zurich Foundation, or of any of the individuals and organizations referred to in the report.

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