



Building Resilience in Ethiopia's Drylands: Evaluating Programme Impacts

Lisa C. Smith and
Timothy R. Frankenberger



BUILDING RESILIENCE IN ETHIOPIA'S DRYLANDS: EVALUATING PROGRAMME IMPACTS

Developing countries face increasingly destructive crises, including climate, economic, political and health shocks. To improve quality of life and encourage further international development, it is imperative to improve resilience in communities. In recent research, **Lisa Smith** and **Timothy Frankenberger** at TANGO International evaluated a programme which aimed to increase resilience among pastoralists and agro-pastoralists in the drylands of Ethiopia. Their discussion includes important recommendations for the design of future programmes.

Challenges Facing Developing Countries

Climate change, globalisation and geopolitical instability are intensifying, and the world's poorest are amongst those most affected. While households in developing countries attempt to deal with such challenges, millions in investments made by governments and international development agencies to boost their well-being are lost in the wake of unanticipated shocks. This presents a novel threat to livelihoods, well-being, and overall international development.

Building resilience to these shocks is vital to quality of life and ongoing development progress. The United States Agency for International Development defines resilience as the ability of people, communities and systems to recover from shocks and stresses in a manner that reduces vulnerability and facilitates inclusive growth. Strengthening resilience depends on identifying the types of interventions that are successful and the specifics of programming that yield the best results.

A growing field of study aims to measure resilience and evaluate the impact of programmes intended to bolster it.

Given the complex conditions that feed into resilience, measuring it requires combining a range of relevant indicators of a household's 'resilience capacities'. Some examples of these indicators are cash savings, disaster preparedness and mitigation, availability of hazard insurance, exposure to information, asset ownership, access to markets, and access to food aid.

The PRIME Project

To contribute to knowledge on resilience, Lisa Smith and Timothy Frankenberger at TANGO International conducted an impact evaluation of the PRIME (Pastoralist Areas Resilience Improvement and Market Expansion) project.

PRIME was implemented between 2012 and 2017 in Ethiopia's drylands, one of the most shock-prone areas of the world. The project's goal was to increase resilience to climate shocks and their economic impacts, and therefore reduce poverty and hunger.

The project's interventions fell into four key areas: livestock productivity and competitiveness, pastoral natural resource management, financial services, and climate change adaptation. Ten new

milk collection centres were established, which provided opportunities for training on milk quality, hygiene, and basic business skills. Assistance was also provided to communities for mapping natural resources and making plans to manage them. Further, mobile banking services were established, and training to develop emergency plans was implemented. These and numerous other interventions were put in place using an integrated approach that recognised that farming and resource management, financial skills, and vulnerability to crises are interconnected.

Harsh Conditions During Project Implementation

Soon after PRIME's inception, Ethiopia's drylands were hit with a series of back-to-back droughts, which were exceptionally harsh. Droughts are generally considered one of the most damaging natural hazards, causing agricultural and livestock losses, market disruptions, and price fluctuations, which lead to food insecurity and loss of life. These climate issues are recurring in the drylands but have been exacerbated by global warming.

The first of these droughts was a failure of rain, localised to the drylands. The



Credit: Sean Sheridan/Mercy Corps

second was triggered by El Niño and affected the entire country. It was considered Ethiopia's worst drought in 50 years, and the government classified over one-third of its districts as facing dire food and nutrition crises. Another drought followed, caused by a negative Indian Ocean Dipole. The combined effects of the droughts led to a sharp drop in households' well-being, with 64% experiencing a reduction in food security.

How Well Did PRIME Work?

The researchers evaluated the PRIME project's impact using a suite of panel surveys with a selection of sample households. Exposure to shocks was measured using satellite remote sensing data from the Africa Flood and Drought Monitor and households' self-reports of their exposure to climate, economic, and conflict shocks. The indicators chosen to measure resilience were 'Realised Resilience', food security stability, and households' self-reported ability to recover. In this context, Realised Resilience was measured as the total change in food security between the baseline and final surveys. Numerous controls and models were applied to ensure the validity of the analysis.

This was one of the first resilience impact evaluations using a causal design, meaning that results could be attributed to the intervention – more specifically, the extent to which the PRIME project affected households' resilience capacities and resilience to the droughts.

Overall, the project had a positive impact on households' ability to recover. The households exposed to the PRIME programme experienced an average 24% lower decline in food security. It strengthened a broad range of households' absorptive, adaptive, and transformative capacities, including social and human capital, psycho-social capabilities, economic capacities, safety nets, disaster risk reduction, and access to markets, services, and infrastructure. The evaluation found that the livestock productivity and competitiveness interventions, followed by

interventions focussed on climate change adaptation, had the strongest impacts on households' resilience.

Key Components of Success

Two key approaches optimised these impacts. First was 'Comprehensive Resilience Programming', in which interventions in multiple sectors were implemented simultaneously. The researchers found that the impact on a household's resilience increased exponentially for each additional sector of intervention they participated in. This indicates that the synergistic aspect of the project was successful. In fact, a simulation model showed that the impact of simultaneous interventions was nearly six times higher than if they were each implemented separately.

Second, while interventions were mainly implemented at a systems level, many households made the decision to actively participate. For example, they would purchase veterinary medications or sell their livestock to a newly established feedlot. When they did so, the impact on their resilience was far greater. Households actively participating in these interventions experienced a full 50% lower decline in their food security than those that did not and were ultimately much more resilient.

Lessons for the Future

Lisa Smith and Timothy Frankenberger considered what can be learned for future assessments of the impact of resilience programmes. For example, they discuss the difficulties of working in an intrinsically volatile environment which is vulnerable to shock. They emphasise the need for researchers to be aware of this in their research design and to plan for a wide range of alternative arrangements for the study.

They also provide key insights for future resilience programs like PRIME. They argue that projects can leverage the greatest impact by determining early on which interventions bolster resilience and resilience capacities the most and focusing on them. They reiterate that programmes will be more successful if they take advantage of the synergies that emerge when interventions occur across multiple sectors. Integrated, cross-sectorial programming is key as it optimises impacts. They also state that projects with systems-level interventions should proactively encourage and plan for households' direct participation. This will allow the full benefits to be realised and greater resilience to be nurtured. For example, a future program could promote community awareness building in the catchment area of a new service or infrastructure investment.

While the challenges faced by developing countries are increasing, the vital work of Lisa Smith and Timothy Frankenberger at TANGO International shows that successful interventions are possible. By utilising the lessons learned from their research in the design of future programs, we can strengthen resilience and reduce vulnerability to climate, economic, and political crises.

Meet the Researchers



Lisa C. Smith, PhD
Senior Economist
TANGO International
Tucson, AZ
USA

Lisa Smith graduated from the University of California San Diego Summa Cum Laude with an undergraduate degree in Economics. In 1995, she completed a PhD in Agricultural and Applied Economics at the University of Wisconsin-Madison. After a post-doctoral fellowship with the American Association for the Advancement of Science, she served as a Research Fellow at the International Food Policy Research Institute in Washington, DC. She also held visiting professorships at the Emory University School of Public Health and the University of Arizona. Today, she is a Senior Economist at TANGO International, conducting quantitative data analysis to inform policy decisions of various non-governmental, governmental, and United Nations agencies. Her work includes analysis of project impact evaluations and assessments of food security, child malnutrition, women's empowerment, and household resilience to shocks.

CONTACT

E: lsmith@tangointernational.com
W: www.tangointernational.com
@TANGO_Int



Timothy R. Frankenberger
President
TANGO International
Tucson, AZ
USA

Timothy Frankenberger is the President and co-founder of TANGO International and has over 40 years of experience in international development activities. He has extensive experience in project design, monitoring and evaluation, food and livelihood security assessments, vulnerability assessments, resilience measurement and policy analysis. His graduate work includes a master's degree and doctoral studies in Anthropology at the University of Kentucky. He has served as the Senior Food Security Advisor and Livelihood Security Coordinator at CARE, a farming systems research specialist at the University of Arizona, and is the founding editor of the Journal of Farming Systems Research-Extension. Working in more than 30 countries, he has published numerous articles on household food security, household livelihood security, and resilience.

CONTACT

E: tim@tangointernational.com
W: <https://www.tangointernational.com/>
@TANGO_Int

KEY COLLABORATORS

Greg Collins, United States Agency for International Development
Tiffany Griffin, United States Agency for International Development
Ato Biratu Yigezu, Director General, Central Statistical Agency of Ethiopia
Amin Yusef, Vice President of Development Affairs, Somali Regional State
The staff of Mercy Corps Ethiopia, including Michael Jacobs, Diana Picon, Tilahun Asmare and Fekadu Wolde



FUNDING

United States Agency for International Development

FURTHER READING

LC Smith, TR Frankenberger, [Recovering from severe drought in the drylands of Ethiopia: Impact of Comprehensive Resilience Programming](#), World Development, 2022, 156, 105829. DOI: <https://doi.org/10.1016/j.worlddev.2022.105829>.
LC Smith, TR Frankenberger, [Does resilience capacity reduce the negative impact of shocks on household food security? Evidence from the 2014 floods in northern Bangladesh](#), World Development, 2018, 102, 358–376. DOI: <https://doi.org/10.1016/j.worlddev.2017.07.003>