



Prioritising Resilience Interventions in Agricultural Livelihoods: A Ugandan Case Study

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Summary

This case study reports pilot testing of RABIT – the University of Manchester’s Resilience Assessment Benchmarking and Impact Toolkit – in an agricultural livelihood system in Uganda. The study was conducted in collaboration with Lutheran World Relief and Gumutindo Coffee Cooperative Enterprise, and focused on resilience to climate change stressors.

The case describes three things:

- *how to understand community resilience in an analytically-robust way*
- *how we benchmarked and visualised agricultural livelihoods’ resilience to climate change*
- *how we used these metrics to prioritise future actions that will strengthen the resilience of agricultural producers to climate change impacts.*

It provides an outline guide for those wanting to understand and enhance the resilience of vulnerable agricultural livelihoods, and the impact of development interventions on that resilience.

The Agricultural Livelihoods Resilience Challenge

Due to the complex set of challenges that characterise the 21st century, we must redefine the way in which we understand and approach development, particularly for vulnerable agricultural livelihoods. For millions of people whose livelihoods depend on crops, livestock, and other natural resources, adaptation to short-term shocks (e.g. economic crisis, violent conflicts, health epidemics, climate events) and long-term trends (e.g. climate change, migration, new technologies) is becoming the norm.

Agricultural livelihoods are at the core of developing country economies, and play a critical role in food security and in the sustainability of small producers and rural inhabitants. They are closely linked to the conservation of natural habitats and vulnerable ecosystems, and to the cultural identity of developing nations. Yet, often characterised by poverty and marginalisation, they are particularly vulnerable to the impacts of both rapid- and slow-onset events, which disproportionately affect the availability and access to resources, the capacities, institutions, and quality of life of the rural poor. Building resilience is recognised not only as a mechanism to survive and cope with these impacts but, increasingly, as an enabler for the achievement of development outcomes.

Defined as the ability of vulnerable systems – including agricultural communities – to withstand, recover from, adapt to, and potentially transform amid change and uncertainty, resilience plays a crucial role in rural development. It provides a holistic, long-term and system-wide approach that is rising up the development agenda, offering a new perspective on the challenges and the opportunities faced by agricultural livelihoods.

In practice, however, the usefulness of this notion is challenged by the scarcity of credible guides that practitioners and researchers can follow to understand what resilience means, how to measure it, and how to use those metrics to inform and shape action in the ground. This case study provides such a guide. It explains how one aspect of the University of Manchester's Resilience Assessment Benchmarking and Impact Toolkit (RABIT) was piloted in an agricultural region in Uganda, in collaboration with Lutheran World Relief (LWR) and a local partner, Gumutindo Coffee Cooperative Enterprise (GCCE). As described below, the pilot defined and then benchmarked resilience to climate change for coffee producers; and then used that as the basis for prioritisation of future actions.

What is Resilience?

The RABIT approach to resilience draws from the ideas of complex adaptive systems. It understands resilience not as a system structure or process, but as a system property. It is not something a system is or does, but something a system has (or fails to have). The system could be a household, an organisation, a nation. This research focuses on the resilience of an agricultural livelihood system.

To understand resilience, RABIT identifies nine attributes – or sub-properties – of resilience. Three are primary foundations of resilience: robustness, self-organisation, learning. Six are secondary enablers of resilience: redundancy, rapidity, scale, diversity, flexibility, equality. The stronger these are in a system, the more resilient it will be. As summarised in Table 1, each attribute has a series of key markers: indicators that we can use to assess the strength or weakness of each attribute.

Resilience Attribute	Definition	Key Markers/ Indicators
FOUNDATIONAL ATTRIBUTES OF RESILIENCE		
Robustness	<ul style="list-style-type: none"> Ability of the community to maintain its characteristics and performance in the face of environmental shocks and fluctuations. 	<ul style="list-style-type: none"> Physical Preparedness Institutional Capacity Multi-level Governance and Networking
Self-Organisation	<ul style="list-style-type: none"> Ability of the community to independently re-arrange its functions and processes in the face of an external disturbance, without being forced by external influences. 	<ul style="list-style-type: none"> Collaboration/Consensus-building and Participation Social Networks Local Leadership and Trust
Learning	<ul style="list-style-type: none"> Capacity of the community to generate feedback with which to gain or create knowledge, and strengthen skills and capacities. Closely linked to the community's ability to experiment, discover and innovate. 	<ul style="list-style-type: none"> Capacity Building New and Traditional Knowledge Reflective Thinking
ENABLING ATTRIBUTES OF RESILIENCE		
Redundancy	<ul style="list-style-type: none"> Extent to which community resources and institutions are substitutable; for example, in the event of disruption or degradation. 	<ul style="list-style-type: none"> Resource Spareness Functional Overlaps and Interdependency Resource Substitutability
Rapidity	<ul style="list-style-type: none"> Speed at which assets can be accessed or mobilised by community stakeholders to achieve goals in an efficient manner. 	<ul style="list-style-type: none"> Rapid Resource Access Rapid Resource Assessment/Coordination Rapid Resource Mobilisation
Scale	<ul style="list-style-type: none"> Breadth of assets and structures a community can access in order to effectively overcome or bounce back from or adapt to the effects of disturbances. 	<ul style="list-style-type: none"> Multi-level Networks Resource Access and (intra/inter) Partnerships Cross-level Interactions
Diversity and Flexibility	<ul style="list-style-type: none"> Ability of the community to undertake different courses of actions with the resources at its disposal, while enabling them to innovate and utilise the opportunities that may arise from change. 	<ul style="list-style-type: none"> Different Courses of Action/Emerging Opportunities Adaptable Decision-making Innovation Backbone
Equality	<ul style="list-style-type: none"> Extent to which the community provides equal access to rights, resources and opportunities to its members. 	<ul style="list-style-type: none"> Strengthened Competencies/ Gaps' Reduction Inclusiveness Openness and Accountability

Table 1. The RABIT Model of Resilience¹

¹ Ospina, A.V. (2013) *Climate Change Adaptation and Developing Country Livelihoods: The Role of Information and Communication Technologies*, PhD thesis, IDPM, University of Manchester, UK.

Measuring Resilience in Context: Coffee Producers in Uganda

The RABIT model of resilience can be taken forward via various different approaches to measurement. In this case, a semi-structured interview-based approach was used. This was piloted in Mount Elgon, a coffee-growing region in Eastern Uganda. Heavily dependent on the production of Arabica coffee by smallholder farmers, the region is densely populated, and its vulnerability to stressors such as climate change is closely linked to prevailing conditions of poverty and marginalisation.

Mount Elgon was selected on three grounds: a) relatively accessible and safe as a pilot location, with a variety of coffee growers located at different altitudes (which allowed a varied sample of climate change manifestations/impacts on coffee livelihoods); b) good level of organisation of the participating coffee grower cooperatives, to facilitate the coordination of interviews, surveys and focus groups; c) subject to climate-related events such as flooding and landslides, and with involvement in wider resilience initiatives.

A purposive sample of interviewees was used to target key stakeholders: ten individual interviews with coffee producers and community knowledge workers (CKWs), and six interviews with members of coffee growers' primary societies and cooperatives. Interview topics covered local community strengths and weaknesses, specific discussion of climate change impacts and responses, and an open discussion of resilience attributes. Interview transcripts were then subject to text analysis, enumerating the number of times the markers shown in Table 1 were discussed, and categorised into either strengths or weaknesses of the community.

Visualising Agricultural Livelihood Resilience Priorities

Deriving from the text metrics, the benchmarking of community resilience can be visualised. Examples are shown in Figure 1 (combining incidence of attribute strength and weakness within stakeholder interviews) and 2 (subtracting incidence of weakness from strength for each resilience attribute).

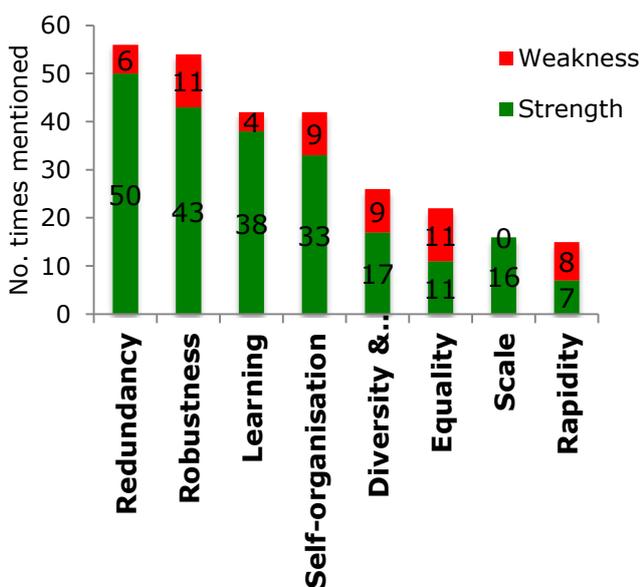


Figure 1. Relative salience of strength vs. weakness of resilience attributes

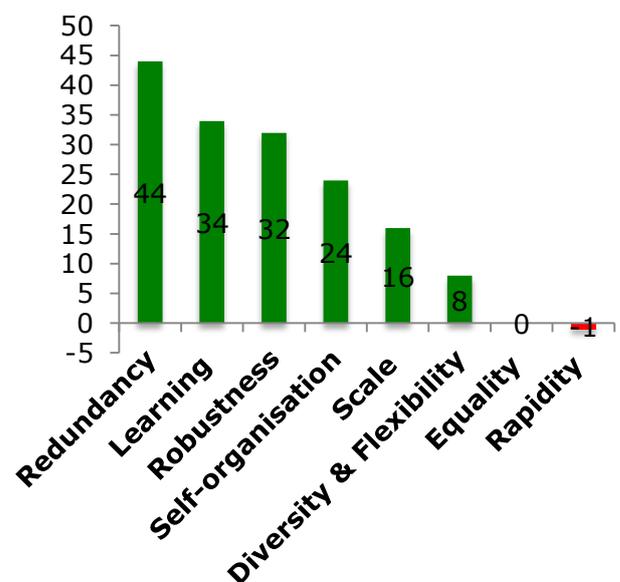


Figure 2. Summative view of resilience attribute strength/weakness

Figure 1 visualises three conclusions about resilience of these particular agricultural livelihoods:

- a) At a general level, perceptions about positive resilience attributes significantly outnumber discussion of resilience weaknesses among Mount Elgon coffee farmers.
- b) Coffee farmers are seen to have particular strengths in the areas of redundancy (e.g. linked to the availability of various sources of support: institutions and social networks, crop diversification and savings practices), robustness (e.g. linked to a certain strength of local institutions, some physical preparedness linked to organic farming practices and information access, and some broader networking), learning (e.g. linked to the knowledge exchange/capacity building between CKWs and farmers), and self-organisation (e.g. linked to the collaborative nature of farmers' groups/cooperatives, trust and sense of belonging). Redundancy outweighs other attributes as a focus for attention.
- c) The highest number of weaknesses correspond to the attributes of equality (related to power differentials, gender inequality and marginalisation) and robustness (related to infrastructure, financial and physical resource constraints). Findings suggest an imperative for actions seeking to strengthen coffee farmers' resilience in these areas.

In order to direct that imperative to action, we can supplement with the data shown in **Figure 2**, which helps identify three priority tiers for resilience-related interventions in Uganda's coffee livelihoods:

- 1) First-tier priority will be actions to strengthen rapidity and equality. That means seeking ways: to systematise local contact points and action plans in order to allow rapid response to local emergencies; to improve recognition and participation of relatively-marginalised groups (especially women) in development initiatives.
- 2) Second-tier priorities should address diversity and flexibility, scale and self-organisation among coffee producers. As in the examples provided above, actions should relate to the specific markers for each attribute.
- 3) Third-tier priorities will be actions on robustness, learning and redundancy. These will help coffee farmers but appear to be less pressing than the other areas for resilience intervention.

These findings – including the priority tiers – were then discussed first among the research group, and then at a community feedback workshop in order to produce a list of high-priority interventions on resilience, as presented next. Focus group findings were also used to complement and strengthen the findings.

High-Priority Resilience Interventions

Proposed interventions for the first two priority tiers are shown in Table 2, with the highest priority for intervention – action on the rapidity of actions related to coffee livelihoods – shown first. On the right side, ‘Level of involvement’ indicates which of community-level, municipality-level and national-level stakeholders would be involved.

Resilience Attribute	Resilience Marker	Intervention	Level of Involvement		
			C	M	N
RAPIDITY	Rapid resource mobilisation	<ul style="list-style-type: none"> Support a multi-stakeholder, integrated plan to strengthen the local disaster preparedness and the rapidity of local response mechanisms, building on existing social networks, and addressing local priorities. 	X	X	X
	Rapid resource access	<ul style="list-style-type: none"> Ensure that there is an emergency action plan in place, including individual contact points within coffee farming community with clear/ established access to appropriate institutions. 	X	X	
	Rapid resource assessment/ coordination	<ul style="list-style-type: none"> Implement a programme to raise local awareness on the roles and responsibilities of different institutions and actors in the case of disasters, including contact mechanisms and available resources. 	X		
EQUALITY	Gap reduction	<ul style="list-style-type: none"> Ensure the integration of gender components, including the monitoring of gender-related resilience impacts, as part of ongoing and future development initiatives. 	X	X	
	Inclusiveness	<ul style="list-style-type: none"> Design a campaign aimed at increasing women farmers’ participation in community organisations, particularly in decision-making bodies (e.g. boards, committees). 	X	X	
	Openness and Accountability	<ul style="list-style-type: none"> Improve the dissemination of information and knowledge related to projects and initiatives implemented at the local level (e.g. project reports, evaluations, case studies, lessons) in formats that are appropriate for local audiences. 		X	X
DIVERSITY AND FLEXIBILITY	Adaptable decision-making	<ul style="list-style-type: none"> Design a programme to foster women farmers’ entrepreneurship, including training on new income opportunities and informed decision-making. 	X	X	
	Innovation backbone	<ul style="list-style-type: none"> Motivate and acknowledge local innovation through a competition for novel climate change adaptation practices. 	X	X	X
	Different actions/emerging opportunities	<ul style="list-style-type: none"> Foster the exchange of experiences and best practices among coffee farming communities of different regions of the country, promoting knowledge exchange on diverse adaptation and mitigation actions. 	X	X	X
SCALE	Resource access and partnerships	<ul style="list-style-type: none"> Organise a workshop among the different institutions involved in climate change projects in the Mount Elgon region, in order to share lessons and form new partnerships. 	X	X	X

Resilience Attribute	Resilience Marker	Intervention	Level of Involvement		
			C	M	N
	Multi-level networks	<ul style="list-style-type: none"> Foster a series of presentations to community organisations from municipal/national actors; or visits for community organisation representatives to municipal and national organisations in order to strengthen cross-scale collaboration. 	X	X	X
	Cross-level interactions	<ul style="list-style-type: none"> Foster multi-stakeholder collaboration (e.g. between ministries, private sector, community groups, NGOs) to invest in climate monitoring networks for data collection, in order to strengthen the accuracy of weather and climate forecasts. 	X	X	X
SELF-ORGANISATION	Collaboration and participation	<ul style="list-style-type: none"> Invest in community-based disaster risk reduction initiatives that have a strong component of self-organisation, building on existing social networks. 	X	X	
	Social networks	<ul style="list-style-type: none"> Deepen local awareness on the role of social capital and social memory in the adaptation of coffee farming communities. 	X		
	Local leadership and trust	<ul style="list-style-type: none"> Implement an initiative to strengthen the capacity of local leaders in areas that are key to the community's adaptive priorities to climate change impacts. 	X		

Table 2. Priority actions to improve coffee farmers' resilience in Mount Elgon region

Further Information

For full case study details, see: Ospina, A.V. et al (2016) *Benchmarking Resilience of Agricultural Livelihoods: Piloting the Resilience Assessment Benchmarking and Impact Toolkit (RABIT) in Uganda* <http://www.niccd.org/resilience>

For full details of how to utilise the RABIT toolkit, see: Ospina, A.V. & Heeks, R. (2016) *Resilience Assessment Benchmarking and Impact Toolkit (RABIT): Implementation Handbook* <http://www.niccd.org/resilience>

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RESILIENCE ASSESSMENT BENCHMARKING and IMPACT TOOLKIT