# Community Based Resilience Analysis (CoBRA) Conceptual Framework and Methodology

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# Conceptual Framework and Methodology

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**DRRAP**

Drought Risk Reduction
Action Plan | Funded by ECHO

# Table of Contents

# 1. Introduction

## 1.1 Background

Over the last decade, the drylands of the greater Horn of Africa (HoA) have been affected by repeated drought-related disasters. The most recent drought crisis in 2010-2011 has generated a major reconsideration about how development and humanitarian actions can be better coordinated so as to minimize the impacts of shocks such as drought on lives and livelihoods. In this context, the term 'resilience' has gained much traction amongst Governments and other agencies working in the region. This is largely perceived as a positive step, since it helps fill in the gaps of traditional risk and vulnerability oriented approaches, extending their focus to potentials, opportunities and capacities of disaster-prone populations to cope with inevitable future shocks and stresses.

Nevertheless, there are still significant challenges in translating the resilience concept into practice on the ground. Different organizations have different understandings and interpretations of resilience. The concept has the great potential to integrate various actions in different operational sectors under one umbrella with a common vision. However, identifying where and how to build resilience in practice is proving to be elusive. As a result, while a significant financial commitment has been made for resilience enhancement in the region (i.e., as much as 1.3 billion US dollars[1]), numerous "resilience" initiatives have been implemented in a largely fragmented manner with little coordination and synergies with each other. The lack of consensus and consistency as to the most appropriate approach to measure resilience undermines the ability of stakeholders to objectively monitor and verify the success (or failure) of their efforts for programming to build resilience.

It is in this context that the UNDP Drylands Development Centre (DDC) initiated the Building Drought Resilient Dryland Communities in the HoA project in 2012, with the financial support from the European Commission Directorate General for Humanitarian Aid and Civil Protection (ECHO). Under the framework of the ECHO's Drought Risk Reduction Action Plan (DRRAP), the project intends to build on the ongoing efforts to measure resilience and introduce a robust analytical tool, i.e., Community Based Resilience Analysis (CoBRA), through which to understand resilience at the community and household levels. In particular, it focuses on assessing how communities define and experience resilience and linking these findings with development and humanitarian interventions for drought in the HoA region, inter alia Ethiopia, Kenya and Uganda.

## 1.2 Project Overview

The project was designed with an overall objective to reduce drought/disaster risks and improve human livelihoods in disaster-prone communities. More specifically, it aims to establish an integrated enabling DRR planning and programming framework at national and regional levels in the HoA, effectively promoting local resilience building and vulnerability reduction. Towards this objective, at the project inception, CoBRA was devised as a conceptual framework and methodology for measuring and assessing the impacts of community-based DRR interventions on local resilience building. It has become clear in the development and testing of the methodology, however, that the multi-dimensional and longer term nature of resilience makes assessing the impact of any one specific project on resilience outcomes in the short term difficult, if not impossible.

At the same time, it became evident that CoBRA helps identify both contextual and more universal characteristics of resilience. These findings are instrumental in informing the ongoing region-wide efforts to develop measurable composite resilience indicators of change.

Using qualitative, process-oriented tools, CoBRA intends to identify the key building blocks of community resilience and assesses the attribution of various development/humanitarian interventions in attaining these resilience characteristics. Inter alia, the CoBRA methodology has four broad objectives:

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1   Downie, K. (November, 2013). Technical Consortium: Our Approach to Resilience. Presentation made at Food Security and Nutrition Working Group Meeting, Nairobi, Kenya. Available at: http://www.disasterriskreduction.net/fileadmin/user_upload/drought/docs/Katie%20Downie%20-%20Technical%20Consortium%20 presentation%20to%20FSNWG%20211113.pdf.

1. Identify the priority characteristics of disaster resilience for a target community;
2. Assess the community's achievement of these characteristics at the time of the assessment (generally carried out during a 'normal' period) and during the last crisis or disaster;
3. Identify the characteristics and strategies of disaster-resilient households; and
4. Identify the most highly rated interventions or services in building local disaster resilience.

A CoBRA assessment then uses these findings to develop specific conclusions and recommendations for relevant stakeholders working to build resilience locally.

This conceptual framework and methodology have been developed and refined in a highly participatory manner through a series of consultations, field testing and feedback sessions, as follows:

- The first draft framework was prepared based on an extensive review of existing literature and consultations.

- The document was presented at the 2nd Africa-Asia Drought Adaptation Forum, held in Nairobi, Kenya, in October 2012 and revised further based on consultation feedback.

- The prototype methodology was field-piloted in Marsabit, Kenya, and Karamoja, Uganda, in November-December 2012.

- An updated conceptual framework and methodology based on the field assessment results was presented at the 5th Africa Drought Adaptation Forum, held in Arusha, Tanzania in February 2013, for additional feedback and revisions.

- Four full CoBRA assessments were undertaken in Kenya (Marsabit, Turkana and Kajiado) in partnership with the National Drought Management Authority and Uganda (Karamoja) in partnership with the Office of the Prime Minister in June-August 2013 and the assessment findings collectively reviewed and validated by the community representatives and the local technical stakeholders in September-November 2013. The validated results have shaped this revised methodology.

- One additional assessment was undertaken in Ethiopia (Yabello) in December 2013 with the leadership if the Disaster Risk Management and Food Security Sector of the Ministry of Agriculture and Rural Development and the African Center for Disaster Risk Management. The preliminary findings of the exercise also provided critical inputs to the document.

The remainder of this document is structured as follows:

- Section 2 presents the conceptual framework that underpins the CoBRA model, including a presentation of the existing evidence base on resilience, as well as a discussion on approaches to measuring resilience.

- Section 3 presents the CoBRA model.

- Section 4 describes in brief the methodology that supports the model. A full guide to the methodology can be found in the CoBRA Implementation Guideline.

# 2. Conceptual Framework

## 2.1 Why a methodology to measure resilience?

In order to help communities onto a path of resilience building, rather than increasing vulnerability, it is clear that a multi-faceted approach at scale is required. This is in sharp contrast to the current fragmented, largely sectoral and project-based approach to interventions. In drought affected areas, where protracted crises with spikes in need are the norm, tools are required that help to take an integrated approach to resilience, documenting evidence of groups of interventions that have high impact.

The rationales to develop a methodology to measure resilience include:

- Currently, limited tools exist to measure resilience as a long-term multi-dimensional concept. Programme/ project monitoring tends to be undertaken on sectoral basis, and national level monitoring of many development indicators is not done frequently enough, or at a scale that allows for differentiation across livelihood groups, ecological zones or wealth groups.

- All actors need to prioritise interventions which best spur positive change in steering households and communities towards resilience pathway rather than addressing all sectors equally or providing the assistance based on the political will/fund availability. A multi-faceted approach can help to engage decision making that looks at issues more holistically, recognising the interconnection between different facets of resilience.

- A resilience measurement tool will provide a valuable basis upon which to develop a composite set of context-specific multi-sectoral resilience indicators. It is often the combination and interaction of these factors that drive or undermine resilience. Baseline data for some of the individual keystone indicators on the current conditions of the individuals, communities or systems may be available through existing regular data collection mechanisms such as Household Economy Approach (HEA), Demographic and Health Surveys (DHS), risk profiling, etc. However, at present, these indicators are largely analysed separately. For example, data on the number of households with members who have completed secondary or tertiary education is rarely analysed alongside data on the diversification of household incomes or levels of conflict and insecurity.

- Key indicators affecting resilience are not comprehensively collected using any widespread agreed methodology, and hence there is no mechanism for consolidating and comparing findings. Peace/ security and governance are the prime examples.

## 2.2 Building on the Existing Evidence Base

### 2.2.1 Common Definitions of Disaster Resilience

Numerous definitions of resilience exist, and for the most part, they broadly reinforce each other. The UNDP defines resilience as: "an inherent as well as acquired condition achieved by managing risks over time at individual, household, community and societal levels in ways that minimize costs, build capacity to manage and sustain development momentum, and maximize transformative potential."[2]

The United Kingdom Department for International Development's (DFID) definition also links resilience with long term development: **"disaster Resilience is the ability of countries, communities and households to manage change, by maintaining or transforming living standards in the face of shocks or stresses - such as earthquakes, drought or violent conflict – without compromising their long-term prospects"**.[3]

DFID attempts to analyse the levels of resilience by raising a question: when a group of people experience a shock or stress, what pathway do they follow? Those who collapse, or recover but are worse than before, are not resilient, and are likely to fall deeper into a vulnerability pathway. Those who bounce back, or bounce back better, can be said to be on a resilience pathway.

2    UNDP (2013). Changing with the World: UNDP Strategic Plan 2014-2017. New York: UNDP.
3    DFID (2011). Defining Disaster Resilience: A DFID Approach Paper. London: DFID.

When examining the concept of resilience, it is important to note that resilience, like vulnerability and risk, is a dynamic concept. In addition, resilience is multi-dimensional that requires the simultaneous measurement of several factors, both short and long term. This goes against the current orthodoxy of monitoring and evaluation practice, which tends to be highly sectoral.

For the purpose of this publication, the term resilience refers to disaster resilience rather than drought resilience. Although drought is recognised as the most frequent and major stress experienced by communities in the drylands of the HoA, it is not the only shock/stress experienced. While it is important that shocks and stresses are not pre-determined or limited, this needs to be balanced with the need to define what a community is resilient to, and whether it actually experiences disaster or is chronically vulnerable.

## 2.2.2   Existing Models for Disaster Resilience

Existing resilience models can be categorised generally into two groups:

- Models that attempt to capture and describe a system-wide approach to resilience (e.g., DFID, Technical Assistance to Non-Governmental Organizations [TANGO], Practical Action, Fraser, etc.); and

- Models that attempt to define and measure the characteristics of resilience at a community level (e.g., Food and Agriculture Organization of the United Nations [FAO], Oxfam, Tulane University, etc.).

The framework presented here draws from and builds upon part of the both models. However, CoBRA also differentiates from these models in that it is designed to be a participatory and community based methodology and a practical package that can be applied in many contexts. Annex 1 outlines a brief summary of the above mentioned and other existing resilience conceptual models.

The first step in assessing the impacts of interventions on community/household level resilience is a careful understanding of the characteristics of resilience that are to be measured. The CoBRA methodology intends to analyse community and household level characteristics of resilience, which can be used to develop indicators for quantitative impact assessment, and identify the underlying factors or interventions that have the greatest impact on building resilience through participatory qualitative approaches, namely focus group discussions (FGDs) and key informant interviews (KIIs).

Figure 1: The TANGO Resilience Assessment Framework



TANGO 2012. Adapted from DFID Disaster Resilience Framework (2011) , TANGO Livelihoods Framework (2007), DFID Sustainable Livelihoods Framework (1999) and CARE Household Livelihood Security Framework (2002)

## *System-Wide Approaches*

CoBRA is not a system-wide model for disaster resilience, which encompasses a much wider range of factors than those captured in this study. However, it is very important to relate the model developed here to the

wider system, as the findings that come out of this approach will need to be informed by other processes and actors.

System-wide approaches seek to define a range of activities, actors and processes that are part of a resilience building system. For example, a recent paper by TANGO International presented a composite framework for assessing resilience, with a specific focus on food security shocks in Africa (Figure 1).[4] It is adapted from the DFID Disaster Resilience Framework (2011), TANGO Livelihoods Framework (2007), DFID Sustainable Livelihoods Framework (1999) and the CARE Household Livelihood Security Framework (2002). The overall objective of the TANGO resilience assessment framework is to enable policymakers and practitioners to have a comprehensive understanding of the factors and processes influencing vulnerability and resilience at the household and community levels.

The main focus of the CoBRA on community or household level resilience is largely in line with the adaptive capacity section of the TANGO model – the three blue ovals in Figure 1. Specifically, the aim is to measure the ability of households to cope with shocks or stresses by determining and measuring the common characteristics of those households over time and monitor if they are on a resilience pathway or a vulnerability pathway.

## Characteristics of Resilience

Numerous efforts are ongoing to define the characteristics of resilience at a community and/or household level. The results generated from these efforts are rather diverse with fewer consensuses. The characteristics recommended across the different models thus far encompass income, food security, assets, access to basic services, social safety nets, ecosystem health, livelihood strategies, adaptive capacity, governance, and stability, to name a few.

The methodology presented here is intended to draw from these existing tools and processes. While there are many factors that contribute to resilience, in order to ensure the practicality of the methodology, CoBRA seeks to select a reasonable number of representative resilience characteristics. On one hand, it acknowledges the multi-faceted and multidimensional nature of the concept, which cannot be represented by a few indicators; on the other hand, a tool that captures all possible facets of resilience would be too cumbersome to be of any practical use.
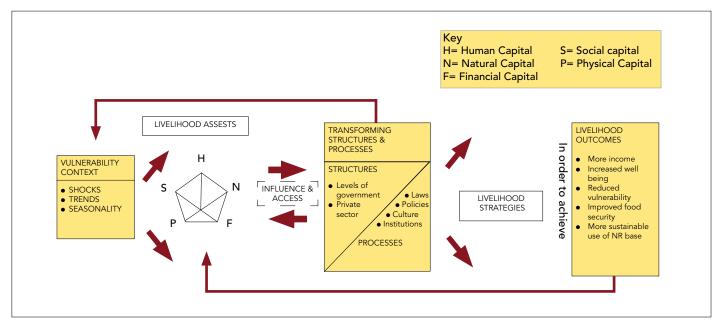
With these points in mind, the Sustainable Livelihoods Framework (SLF) is used as a method of categorising and mapping the potential characteristics of resilience. SLF presents the main factors that affect people's livelihoods and typical relationships between them. It identifies five core asset categories or types of capital upon which livelihoods are built: financial, human, natural, physical and social (Figure 2 and Table 1). It is important to note that the CoBRA adopts SLF as the building blocks of resilience but as means to group indicators into relevant categories for ease of comparison.

## Capital and Capacity

One of the key differences that emerges from the literature and the consultation is that "resilience" is not only about capital, which is the key focus of the SLF, but also about capacities. Capital tends to describe the assets, skills and services that households and communities have, largely representing rather static factors. Capacity indicators measure more dynamic factors including the ability of households to expand and contract their capital in response to shocks, stresses or changes, and rely on skills and linkages to adapt in a positive way.

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4    Frankenberger, T., et al. (2012) Enhancing Resilience to Food Security Shocks in Africa: Discussion Paper. Retrieved from *http://www.fsnnetwork.org/sites/default/files/discussion_paper_usaid_dfid_wb_nov._8_2012.pdf*

Figure 2: The SLF Framework[5]



Clearly adaptive capacity is an essential element to achieve resilience, but not an end in itself like adequate food, income, water, education, etc. In this model, adaptive capacity will be be measured but within or as part of the various livelihood outcomes. Similarly, it is very important to identify negative coping mechanisms. Many households could be perceived resilient in the short term, because they are able to cope by engaging in unsustainable or unethical practices, for example increased sale of firewood/charcoal without considering longer-term ecosystem impacts, or early marriage of daughters. It is important to identify communities where resilience may be supported by negative adaptive capacity, as these will need to be re-classified as not resilient.

Table 1: Definitions of SLF Components[6]

| Dimension | DFID Definitions |
|---|---|
| Physical Capital | The basic infrastructure (water supplies, roads, railways, telecommunications) that people use to function more productively. |
| Human Capital | The sum of skills, knowledge, labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood outcomes. |
| Financial Capital | The cash that enables people to adopt different livelihood strategies. This can be in the form of savings, or a regular source of income such as a pension or remittance. The inputs that support livelihoods, as well as the producer goods (tools, equipment, services) that contribute to the ability to increase financial capital. |
| Natural Capital | The natural resources (land, forests, water) and associated services (e.g. erosion protection, storm protection) upon which resource-based activities (e.g. farming, fishing etc.) depend. |
| Social Capital | Access to and participation in networks, groups, formal and informal institutions. Peace and security. Governance and political relationships. |

## 2.3  Measuring Resilience

The identification of appropriate indicators to measure resilience is a key debate among stakeholders working in the area of resilience building. The conceptual framework for this study is based on the premise that resilience can be measured in two ways:

- A universal measure or indicator(s) of resilience supports understanding of whether resilience is increasing, decreasing or staying the same; and

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5   DFID (1999). Sustainable Livelihoods Guidance Sheets. London: DFID.

6   Ibid.

- Composite and contextually specific indicators of resilience support understanding of how local drivers of resilience are expanding or contracting, and the impact of interventions on those drivers.
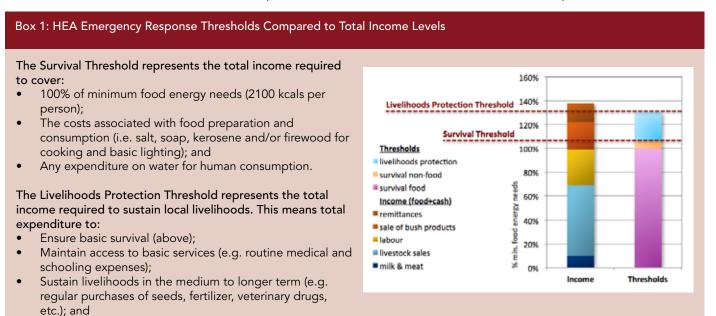
## 2.3 A Universal Measure of Resilience

In order to quantitatively and qualitatively measure resilience, there is a need to reach a consensual definition as to which households are resilient and non-resilient, and clarify the differences between these two groups. At what point do you cross over to being a resilient household, and at what level of resilience? Unfortunately, currently, there is no overall or universal threshold of resilience, which can be used to measure absolute and comparable levels of resilience across different contexts: e.g., is the percentage of population in a village/sub-region/country who are resilient growing or declining?; and how does the proportion of resilient households vary among different village/sub-region/country?

In the case of the most common climate-related shocks (such as drought and flood), households generally experience a reduction in income and production, largely related to a decline in weather-dependent activities, including rain-fed agriculture and livestock production. The hypothesis in this study is that households would define themselves as resilient when they were able to feed their families adequately every day and meet basic needs on a consistent basis both in stressful and 'normal' times without external relief. Being able to quantifiably measure this 'ability to cope' would then provide a universal indicator of resilience.

One of the most commonly used monitoring tools for tracking livelihood wealth groups and wellbeing is the HEA. Using detailed household-level data to compare conditions in a reference year to those in the current or modelled year, it assesses the impacts of changes on households' ability to meet a set of defined minimum survival and livelihoods protection requirements. It collects data on all sources of household income and assets, as well as information on how these various sources expand and contract in response to shocks and stresses.

Box 1 demonstrates the HEA model more concretely in visual terms, and demonstrates how income sources are combined to identify the point at which a household no longer has a food deficit and therefore can, in theory, subsist without external assistance. For the purpose of analysis, this study proposes to link the 'resilience threshold' to the 'livelihoods protection threshold.' In the case of the most common climate-related shocks (such as drought and flood), households generally experience a reduction in income and production, largely related to a decline in weather-dependent activities, including rain-fed agriculture and livestock production. Households could be considered resilient if they have other sources of income and production or some form of contingency buffer exceeding the expected losses arising in a crisis period, and if they can resume levels of income and production in a timely manner after the crisis period.

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**Box 1: HEA Emergency Response Thresholds Compared to Total Income Levels**

The Survival Threshold represents the total income required to cover:
- 100% of minimum food energy needs (2100 kcals per person);
- The costs associated with food preparation and consumption (i.e. salt, soap, kerosene and/or firewood for cooking and basic lighting); and
- Any expenditure on water for human consumption.

The Livelihoods Protection Threshold represents the total income required to sustain local livelihoods. This means total expenditure to:
- Ensure basic survival (above);
- Maintain access to basic services (e.g. routine medical and schooling expenses);
- Sustain livelihoods in the medium to longer term (e.g. regular purchases of seeds, fertilizer, veterinary drugs, etc.); and
- Achieve a minimum locally acceptable standard of living (e.g. purchase of basic clothing, coffee/tea, etc.)



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7   Food Economy Group Consulting and Save the Children (2008). The Household Economy Approach: A Guide for Programme Planners and Policy-Makers. London: Save the Children.

HEA data exists in most countries in Africa, while to varying degrees. HEA tends to be mapped on a livelihood zone basis and may not be adequate to identify specific households or communities that are resilient. However, it can define livelihood zones and wealth groups within them that are 'resilient' both generally, and in times of drought or other shocks. Hence it provides an excellent entry point for resilience analysis to identify hotspots where significant proportions of a community are not resilient to shocks and stresses.

In cases where comprehensive or recent HEA data is not available, food security and similar surveys, such as seasonal needs assessments conducted by Government agencies and the United Nations Word Food Programme (WFP), may be used to provide panel data. These assessments often do not capture as wide a range of variables as HEA. They rarely break down populations into as many localised food security groupings and are hardly modelled for different shock events. However, they can provide an indication of the groups and regions that are unable to feed their families. This again provides a useful proxy for inability to cope with a shock (as well as in normal years), i.e. areas that are not resilient.

## Composite and contextually specific indicators of resilience

While a universal measure of resilience is very useful for comparing across communities, this type of measure doesn't provide important information on how a given community reaches a resilient status, and the types of capital and capacity that allow them to reach this status within the unique local conditions. Composite and contextually specific indicators of resilience enable us to understand how key local drivers of resilience are changing and affecting overall or universal resilience levels.
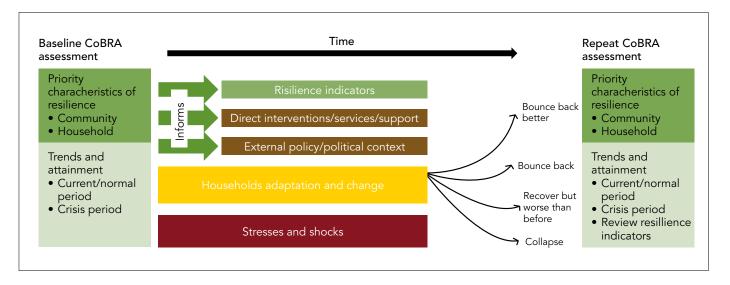
The four assessments to date have consistently highlighted highly similar household characteristics of resilience. Community characteristics are more varied, but with strong commonalities. Linking these characteristics with quantitative indicators that could be tracked over time is the logical next step for the CoBRA methodology. These gaps are the core focus of the CoBRA assessment, described in greater detail in the following section, with a focus on the key factors, or the priority characteristics, which contribute to disaster resilience building at community and household levels.

# 3. Community Based Resilience Analysis (CoBRA)

Building on the various models and components of resilience described above, and based on stakeholder consultation and the results of four full CoBRA assessments, a conceptual framework for a quantitative impact assessment of interventions to build resilience was developed and refined.

When the conceptual framework for CoBRA was originally developed, strong emphasis was placed on the comparison of resilience attainment rates within communities between normal and crisis periods (i.e., quantitative assessment). After a series of technical consultations, it became evident that there is greater value in the other aspects of the CoBRA assessment findings, particularly the key factors, or priority characteristics, that contribute to building resilience to disaster at community and household levels (i.e., qualitative assessment). Such data have been perceived as extremely critical to the process of identifying the resilience impact indicators and prioritizing climate-resilient policy, planning and programming decisions. The revised conceptual framework for the CoBRA model is illustrated in Figure 3.

Figure 3: Revised CoBRA Model



*Basic components of the CoBRA model*

Over time, various factors – including policies, support, changes in context or autonomous household adaptation and change – can influence the resilience of communities to shocks and stresses. Resilience level may be assessed based on how communities cope with and overcome various shocks and stresses: those that are able to bounce back to their condition in the pre-crisis period, or even improve their situation, may be considered resilient, while those that are collapsing or are recovering but are worse off than previously may not be resilient.

To measure resilience and the impact of interventions on resilience, baseline information must be established. Doing so involves answering these fundamental questions:

- What are the main characteristics of resilience at community and household levels?
- Which households are more resilient and able to cope with shocks and stresses?
- What kinds of factors are affecting their ability to cope?
- How do communities score their attainment of these priority characteristics in a normal period and in a crisis period?

The scoring exercise provides important data on community perceptions concerning their status and their progress towards resilience. The characteristics can also be used to develop indicators to quantitatively assess resilience, using existing survey data.

Performing repeat assessments helps to monitor not only trends in communities' priorities in characteristics of resilience, but also their progress in attaining resilience characteristics over time. A careful balance must

be struck, however, between the need to maximize the accuracy and robustness of the findings and the need to maintain the methodology as a cost-efficient, user-friendly and practical tool.

## Basic components of the baseline assessment

Combining FGDs in the sample communities and KIIs with the nominated "resilient households", the CoBRA assessment addresses a range of questions, namely:

- What the main crises or hazards affecting the communities assessed?
- What are the characteristics of a resilient community in that context?
- To what extent has the community attained those characteristics?
- What does a resilient household look like?
- Which recent/ongoing factors and/or interventions have contributed to improve resilience of some (or all) of the households in the community?
- What additional interventions would further build resilience?

Through FGDs, communities are asked to identify and prioritise the characteristics of resilience they consider to be most important. Similarity and differences of priority characteristics in different contexts or among different gender/age/likelihood groups can be compared. Once communities have identified the most important characteristics, they are asked to assess how far these characteristics have been achieved in both a normal and a crisis period.

Various charts and diagrams can be used as the means for mapping and presenting the multi-dimensional indicators that comprise resilience in that context. Figure 4 illustrates the relative resilience scores from the Marsabit field testing undertaken in June 2013, using the five SLF components of resilience. The bar chart on the left shows how communities ranked the relative importance of their defined indicators of resilience, and the right diagram indicates how they scored the extent to which the communities meet these resilience criteria in the current and the last major crisis period.
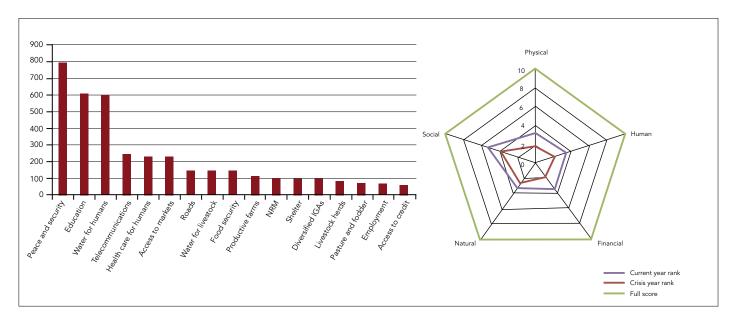
Figure 4: Aggregated Community Resilience Characteristics Attainment Scores by SLF Categories



## Assessing the Impact of Interventions

These priority characteristics of resilience can then be adopted as part of the indicators with which to monitor the changes in local resilience situations, using existing panel data. It should be noted, however, that resilience is a "holistic" assessment, not a project specific measurement. As such, the CoBRA findings and results should ideally be incorporated into a regular system-wide monitoring framework to track progress along a resilience pathway in the long run. The value of CoBRA lies in the ability to identify the priority characteristics that drive or undermine resilience in an area, which can then guide holistic planning, monitoring and evaluation processes at community, district and wider levels.

# 4. Methodology

Figure 5 outlines the phases and steps undertaken for a typical CoBRA assessment. This section provides the brief overviews of each phase and step. Detailed descriptions of the assessment procedures are outlined in the CoBRA Implementation Guidelines, which were developed as part of the project.

Figure 5: Phases and Steps in Undertaking a CoBRA Assessment

| PHASE I<br>Preparation | Step 1: Identify target area<br>Step 2: Prepare for fieldwork |
|---|---|
| PHASE II<br>Field Work:<br>Data Collection | Step 3: Identify and train field staff<br>Step 4: Data collection<br>　　　Step 4a:  Focus Group Discussions (FGDs)<br>　　　Step 4b: Key Informant Interviews (KIIs) with resilient households |
| PHASE III<br>Data Analysis<br>And Reporting | Step 5: Data analysis<br>Step 6: Presenting and using findings<br>Step 7: Repeat monitoring of impact and change |

## 4.1   Phase I: Preparation

### Step 1: Identify Target Area

The very first step taken during the preparation phase is to establish the **target population(s)** to be assessed and identify the lead and supporting agencies responsible for undertaking the assessment.

In selecting a community for a CoBRA assessment, two issues need to be considered: 1) current perceptions of resilience (or non-resilience); and 2) the geographic coverage of the community to be assessed. The agency or group of partners who are proposing the assessment should consider on what basis the community is currently considered non-resilient. An area may be selected for a CoBRA assessment due to the fact that it is particularly disaster prone/affected. Given there are currently no universal or widely accepted indicators of resilience, it is worth considering indicative factors or indicators that exist to demonstrate non-resilience. This could include proportions of the population receiving humanitarian assistance, perceived food insecure or under malnutrition.

A CoBRA assessment maps out holistic and multi-dimensional issues facing the area that cannot be addressed by any single organisation, programme or sector. Consequently, CoBRA findings can be of relevance to a wide range of actors working in an area.  These actors may want to combine resources to jointly train the team and undertake the CoBRA assessment for the area/livelihood zone(s) where they all operate. Joint assessment teams help avoid the bias in responses from communities that may exist if the entire field work is done by a single agency associated with a specific project or programme. It is useful to identify two lead agencies in the CoBRA assessment team. A primary lead agency from an appropriate Government department with local level presence will ensure the assessment has a high level of legitimacy and buy-in from both Government line departments and other local stakeholders.

Each member of the CoBRA methodology team may have slightly different motivations and purposes and these should be clarified before undertaking the field work. The CoBRA assessment has four broad objectives:

1. Identify the priority characteristics of resilience for a target community;[8]
2. Assess the communities' achievement of these characteristics at the time of the assessment and during the last crisis/disaster;
3. Identify the characteristics and strategies of resilient households; and
4. Identify the most highly rated interventions or services in building local resilience.

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8    A target community can be defined as a similar agro-ecological or livelihood zone with a single or adjacent administrative district(s)/locality(ies).

The team members' commitment to repeated or longer term application of the methodology's approach should also be considered in the levels of training and amount of baseline data collected.

## Step 2: Prepare for Field Work

As soon as implementing partners are identified, the lead agency should develop a CoBRA assessment plan for the field work. The plan should set out how the assessment will be undertaken from field training to final reporting. It is a live document regularly updated in the planning process as the roles and responsibilities of different partners are clarified. It can also be used as a proposal document to secure additional resources and support. The assessment plan should articulate:

- Implementing partners (lead and supporting partners);
- Roles and responsibilities of each partner;
- Objectives of the assessment;
- Target population to be assessed;
- Resources and budget required; and
- Timeline for all field work, analysis, validation and reporting.

## 4.2   Phase II: Field Work

## Step 3: Identify and Train Field Staff

The quality of data collected will depend to a large extent on the skills and experience of the team selected to undertake field work. A CoBRA assessment team normally comprises a Team Leader, Assessment Supervisors and Facilitators. The Team Leader should be a senior technical specialist who has successfully completed a CoBRA training-of-trainers session or led several assessments in the past. The number of Supervisors and Facilitators will vary depending on the size of the assessment and the days available to carry it out. In general, one Supervisor will support four Facilitators. Ideally Supervisors and Facilitators should be drawn from a range of local participating agencies. A well-balanced team would consist of a mixture of men and women, representing different sectors, fluent in local languages and who have experience in community mobilisation and facilitation. A comprehensive training and continued and timely field support and supervision are pre-requisites.

Table 2 summarizes the key modules to be covered in the training of the assessment field team, i.e., Assessment Supervisors and Facilitators. It comprises the classroom and field trial sessions.

Table 2: Model CoBRA Assessment Team Training Modules

| Day | Indicative Programme |
|---|---|
| Day 1-Classroom (1/2 day) | - Introductions<br>- Background to CoBRA and conceptual framework<br>- Mapping disturbance and shocks in the target location<br>- Defining resilience<br>- Mapping interventions and change in the target location<br>- Defining the community<br>- Listening, hearing and recording |
| Day 2 - Classroom (Full day) | - Introduction to CoBRA assessment field tools<br>- FGDs – Resilience impact statements<br>- FGDs – Resilient households<br>- FGDs – Resilience building interventions Practice FGD<br>- KIIs with resilient households |
| Day 3 - Field Practice Session | - Trial FGDs<br>- Trial KIIs with resilient households |
| Day 4 - Classroom (full day) | - Field practice session debrief<br>- Planning for fieldwork |

## Step 4: Data Collection

Following the training, the full field data collection exercise will be carried out which include FGDs and resilient household KIIs (Table 3).

Table 3: CoBRA Data Collection Processes

| Data collection Process | Description |
| --- | --- |
| FGDs | Separate groups of between 12-20 men, women, youth representing households from the target (and control) communities. Number of FGDs per location/livelihood zone and overall to be determined by sampling framework. |
| Resilient Household KIIs | Semi-structured interviews with adult members of households identified as resilient (approximately two informants per site). |

Detailed procedures to be followed for the data collection are available in the Implementation Guidelines. The information provided by each tool is outlined below:

## Step 4a: Focus Group Discussions

Each FGD takes the participants through the following process:

- **Explain the process and manage expectations:** At the start of each FGD, Facilitators were encouraged to spend some time explaining the purpose and rationale of the CoBRA assessment to the community participants. It is particularly important that participants understand the FGD is an information gathering exercise to enable a better understanding of their communities' aspirations and challenges. It is not linked in any way to current or future programming, funding or other support, although organizations and policymakers may use findings when planning in the future.

- Reach a consensus on the 'community' being discussed: The term "community" is central to CoBRA and the term must be understood consistently by all participating in the FGD. Therefore, one of the introductory conversations in the FGD is to ask participants to describe their 'community' in terms of numbers of people or households, geographic coverage and general livelihoods.

- Understand 'Resilience': Resilience is not a well-known term in most communities and many local languages have no specific translation. Facilitators must spend some time discussing what the term means for communities in that particular context.

- Agree the last 'crisis': FGD participants are asked to describe the last 'crisis' or 'disaster' affecting the community as a whole. Again it is important to establish the frequency, extent and severity of crisis years (or periods) experienced in a particular community. In some contexts, there may be no well defined 'crisis' period that systematically hits the wider community or livelihood zone. Where no clearly defined crisis can be identified, it will be difficult to 'score' communities' attainment of resilience characteristics in a crisis period (see step 4 below).

- Develop a list of outcome statements describing resilience: drawing on the above, FGD encouraged to develop outcome statements that describe how their community would be if ALL households had achieved resilience (i.e., resilience characteristics). Participants can think the characteristics as widely as possible (without duplication) to describe a resilient community.

- Prioritize resilience characteristics: Once the long list of statements is complete, each participant is given six beans or stones and requested to select the three most important statements about resilience for the community. They put three beans on top of the most important, two on the second and one on the third. The statements are then put in priority order from the highest to the lowest total bean score.

- Rate the trend or change in achievement of resilience characteristics: Participants are then asked to consider trends in their priority characteristics of resilience. More specifically, they are asked to come up with a joint answer to the question: "over the last five years, has your community's attainment of this characteristic got better, worse or stayed the same?" as per the score code shown in Table 4.

Table 4: Changes in Priority Resilience Characteristics

| General Change | Score |
|---|---|
| In the last 5 years what is the overall change in your community's attainment of this characteristic? | To be used on FGD recording sheet |
| Significantly better than before | 5 |
| Slightly better than before | 4 |
| Same as before | 3 |
| Slightly worse than before | 2 |
| Significantly worse than before | 1 |

- Rate the communities' progress in attaining the priority resilience statements: Participants are asked to score the extent to which they had achieved their priority characteristics of resilience. This is done on a scale from zero to ten, with ten being totally achieved or in place and zero being completely absent. They scored each statement twice: first for the current period (e.g., normal period) and second for the last significant crisis period.[9] This stage of the FGD can be the most challenging as some resilience statements are more difficult to attribute a quantitative score than others. This is particularly true for non-household based characteristics to do with social or environmental capitals, e.g., "forests would be well managed." Statements may also score zero in both normal and crisis years e.g. "we would have access to a paved road." An example list of resilience statements and scores for one FGD is shown in Table 5.

Table 5: Example Resilience Characteristics/ Statements and Scoring for an FGD

| Prioritised Characteristic of Resilience | Total bean score | Change in Last 5 years | Extent achieved (scale 0-10) Current Period | Extent achieved (scale 0-10) Crisis Period |
|---|---|---|---|---|
| All households have members educated to tertiary level | 28 | 4 | 0.5 | 0.5 |
| All households have access to clean water all year round | 21 | 3 | 4 | 0.5 |
| All households enjoy peace and security at all times | 18 | 2 | 9 | 2.5 |
| The rangelands are managed well so there is always good grazing | 11 | 3 | 7 | 1.5 |
| Households have access to saving and credit facilities | 9 | 2 | 1 | 1 |
| Community would have its own well-functioning market to sell livestock | 8 | 3 | 0 | 0 |

- **Identify the households in the community that have achieved (fully or partially) the resilience characteristics:** The participants are asked to: 1) consider who are the households in their community for which all or part of the prioritized resilience statements are true both in the current period and even during the specified crisis period; and 2) describe the key common features of such households and what they have done to become or stay resilient. They are also asked whether the number/proportion of these 'resilient' households is increasing, decreasing or staying the same in the community.

- Identify interventions that have contributed to household resilience: Participants are asked to list all types of services and interventions that their community has benefited in the recent years.[10] The list should emerge solely from participants and Facilitators should not prompt or list any specific interventions or projects. Once the list is complete, participants are asked jointly identify the top three most effective types of interventions in building resilience and explain why. They are also asked to name and justify the types of interventions that should be implemented in the future, again explaining why. The intention here is not to showcase specific projects and organizations, but rather to learn from the general types of activities that the communities feel are helping them to build resilience, as this gives important evidence for possible scaling up. The inputs from the communities will need cross-referenced and compared with those from other stakeholders on interventions that are not as visible.

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9  Clarity around normal and crisis years are established at the beginning of the FGD.

10  Participants are asked to consider community and private sector initiatives not just Government/NGO/UN etc.

## Step 4b: KIIs with Resilient Households

Whenever possible, resilient households in the assessment community should be identified by the FGD participants. They may also be identified via other key informants or the assessment field team's own networks. KIIs are semi-structured interviews to explore what helped the households emerge from cycle of crisis onto a pathway of resilience, and what factors lead to one group coping while others collapsing and falling deeper into the trap of vulnerability. More specifically, the interviews address the following information about resilient households:

The composition, educational level and livelihood/economic activity of each member.

Other sources of income to the household.

- What factors or characteristics (including and in addition to those raised by the FGD members) have contributed to your household's resilience?
- How did your household become resilient? Was the household always resilient or has it become resilient? Over what timescale?
- Why do you think your family coped better with shocks and crises affecting the community?
- What interventions do you think would best build wider resilience in this community?
- What types of interventions and support would best assist others in their community to achieve their resilient status?

## 4.3   Phase III: Data Analysis and Reporting

### Step 5: Data Analysis

All data collected from all KIIs and FGDs is entered into standard excel spreadsheet formats for compilation, aggregation (where possible) and analysis. Key tasks in the analysis of field data include:

- Map communities' resilience statements against sustainable livelihoods framework (SLF) categories.

- Sum and weigh/normalize bean scores for all statements to get rankings of priority resilience characteristics overall and disaggregated by different groupings.

- Score the achievement of priority characteristics in normal and crisis periods and plot on radar diagram, according to the SLF categories (comparisons can also be made within SLF categories if relevant, for instance between health and education as components of human capital).

- Disaggregate results as required between livelihood groups or target and control sets of communities, depending on sampling strategy.

- Compile and aggregate the features and attributes of resilient households.

- Compile list of ongoing and future priority resilience building interventions most frequently mentioned.

Quantitative results from the above analysis are then analysed alongside the more qualitative descriptions and explanations provided by FGD participants and resilient households to complete the various sections of the final report form. In particular, findings can be used to identify the resilience indicators that could be incorporated into systematic monitoring processes.[11] These indicators can be both capital (static) or capacity (dynamic) that measure both the current status of attainment and its potential or actual capacity for change – see Annex 2 for examples.

### Step 6: Presenting and Using Findings

Once CoBRA data has been analysed and preliminary findings are available, these should be presented, discussed and validated with local communities and other stakeholders. This task will involve convening a meeting, or series of meetings, in the assessment area. Ideally, participants should include community representatives from each of the survey locations, CoBRA field team members and representatives from local

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11   education or health management information systems; early warning/food security information systems; living standard or household income and expenditure surveys; etc.

government and other partner organisations. It may be necessary to hold a separate meeting for community members who may be less literate and for whom results may have to be presented differently. It is useful to split participants into groups to review the different findings and feed back in plenary. Feedback is useful in explaining or enriching findings. The Assessment Team Leader should incorporate feedback into the final CoBRA assessment report.

The final report presents the findings as per the four main objectives of the CoBRA assessment, namely:

1) The priority characteristics of disaster resilience for a target community;
2) The communities' perception on their progress in the achievement of these characteristics;
3) The features and strategies of existing resilient households; and
4) The relative value given to various interventions or services in building local disaster resilience.

In completing the report, the author will examine findings with reference to feedback from the validation workshop as well as other contextual and background information on the area. Together, these reference documents will be used to develop conclusions and recommendations including suggested quantitative indicators that could be used to track local resilience more systematically.

The CoBRA report can be a useful decision support tool for stakeholders in policy, strategic and programme/project planning for the assessment area. This wealth of information can play a key role in identifying characteristics of households that are resilient, gaps in action and interventions that seem to make a critical difference. However, it should be restated that this methodology is only one component of a broad resilience framework – the findings should be used in conjunction with wider analyses and in coordination with other actors. For example, if access to education is identified as a key component of resilience through the CoBRA assessment, more qualitative analyses will be required to identify the best way to improve that access and examine any institutional or policy barriers that need to be addressed, etc.

A two page CoBRA assessment summary report card can also be developed that highlights the key findings and recommendations for each community assessed. This enables to compare the CoBRA findings from different locations. It is also a useful way of disseminating findings to a wide audience, including local officials and communities themselves.

## Step 7: Repeat Monitori.ng of Impact and Change

A single CoBRA assessment can provide a useful baseline understanding of the drivers of local resilience. A key recommendation of the initial CoBRA assessment is a suggested composite list of quantitative indicators that could then be incorporated into existing/ongoing data collection processes to track the attainment rates of the priority resilience characteristics more quantitatively. However, repeat monitoring will be essential if local partners would like to monitor changes in the communities' priority characteristics, their ranking and impacts (if any) of new or scaled-up resilience building interventions over time.

Building resilience takes time. Consequently partners should not expect to see significant changes in such a multi-dimensional measurement in the short term. The timing of the repeat assessments will need to be considered in terms of seasonality, timing and frequency of crises, etc. The CoBRA assessment implementing partner(s) can decide what is the most appropriate repeat monitoring period given their specific objectives, resources and timeframe. Implementing partners need to acknowledge that monitoring change in overall levels of resilience is a long-term commitment. Clearer guidance on repeating CoBRA assessments will emerge as the CoBRA methodology develops further.

A repeat CoBRA assessment will need to produce summary data analysis reports showing time series data, tracking any changes in responses between the baseline and repeat assessments. The development of conclusions and recommendations will require examination and analysis of both sets of data.

# Annex 1: Indicative lists of Existing and Emerging Resilience Models and Frameworks
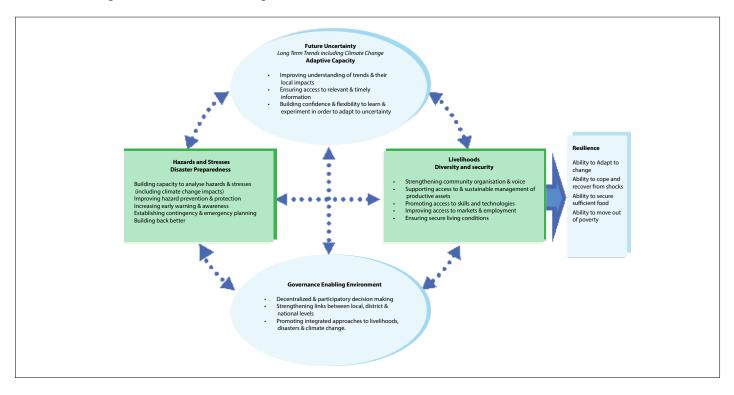
## (A) System-wide Descriptive Models

### 1) TANGO/DFID

This is a widely cited model that comprehensively maps the components of and factors affecting resilience (Please refer to Figure 1 in Section 2.2.2). It draws on livelihood models and climate change adaptation thinking in the inclusion of many factors. The TANGO/DFID model helps to conceptualise resilience as a dynamic process which ultimately coalesce to put households on positive or negative 'pathways.'[12]

### 2) Practical Action

Practical Action's **Vulnerability to Resilience** (V2R) framework[13] (see figure below) highlights the key areas the affect a household or communities' ability to be vulnerable or resilient and the inter-relationships between them. The framework seeks to guide development programming in ways that address the core factors that underlay vulnerability. Building resilience is seen as a process that moves people permanently out of vulnerability. This is achieved by strengthening livelihoods, disaster preparedness, building adaptive capacity and addressing different areas of the governance environment.
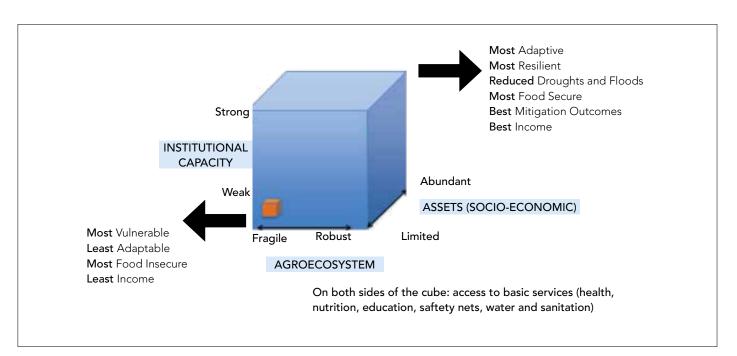


### 3) Fraser, et al. (2011)

This model identifies three critical factors in influencing resilience; socio-economic assets, agro-ecosystem and institutional capacity. It recognizes that reinforcing benefits of all three in maximizing a household's resilience as characterized by its ability to adapt, food security and income. In the model, as illustrated below, it is argued that the pathway to resilience is not necessarily linear and households may be placed in all parts, and move in all directions, around the cube.[14] The inclusion of agro-ecosystem dimension reinforces the importance of environmental health as part of systems resilience.

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12  Frankenberger, T., et al. (2012). Enhancing Resilience to Food Security Shocks in Africa: Discussion Paper.

13  Pasteur, K (2011). From Vulnerability to Resilience: A framework for analysis and action to build community resilience. Practical Action.

14  Fraser, E.D.G., Dougill, A.J., Hubacek, K., Quinn, C.H., Sendzimir, J., and M. Temansen (2011). Assessing vulnerability to climate change in dryland livelihood systems: conceptual challenges and interdisciplinary solutions. Ecology and Society 16(3): 3.

On both sides of the cube: access to basic services (health, nutrition, education, saftety nets, water and sanitation)
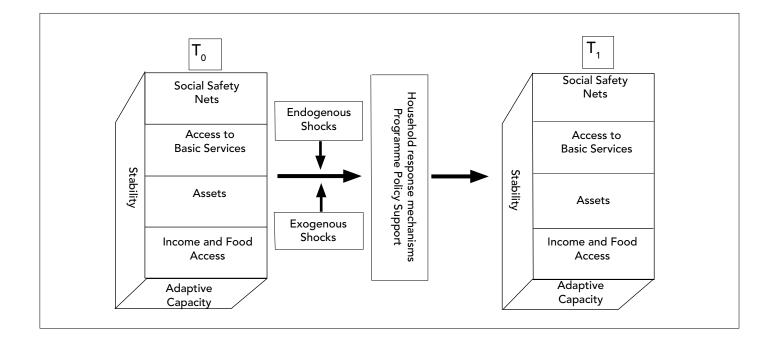
## (B) Models or Studies Attempting to Measure Resilience

Several models have been (or are still being) developed or undertaken in attempt to measure multi-dimensional aspects of resilience. Some studies measure change over time, during or after a shock; or between target and control populations. The dimensions identified for analysis vary as does the type of analysis. A fuller summary and analysis can be found in the background and summary documents for the Expert Consultation in Rome held in February 2013 organized by FAO and WFP with funding from the United States Agency for International Development (USAID) and European Union.[15]

### 4) FAO

FAO's model involves development of a suite of latent variable indices that are derived from a number of observable indicators. These indices are then used to derive a single resilience index that is a weighted sum of the factors generated using Bartlett's scoring method and the weights are the proportions of variance explained by each factor.

15   Frankenberger, T. and Nelson, S. (2013). Background Paper for the Expert Consultation on Resilience Measurement for Food Security. Retrieved from http://www.fsnnetwork.org/sites/default/files/resilience_measurement_background_paper_2.12.2013.docx; TANGO International (2013). Summary of the Expert Consultation on Resilience Measurement for Food Security. [PowerPoint slides]. Retrieved from http://www.fsnnetwork.org/sites/default/files/measuring_resilience_3_3.18.2013.pptx.

The six factors identified are then scored and weighted and plotted on a radar diagram. Scores can be plotted for locations or livelihood groups. This approach, as outlined below, has been used to measure resilience in Kenya (using data from the Kenya integrated household budget survey) and in Palestine using a public perception survey.[16]

## 5) University of Florence (Ciani and Romano, 2013)

The study conducted by the University of Florence expands on the approach developed by FAO[17] by applying it to a specific shock event. It measures food security resilience of rural households affected by Hurricane Mitch in Nicaragua in 1999 and produces a single agricultural resilience index, which is a composite index made up of 11 latent variables estimated through factor analysis. These variables were: income and food access; access to basic services; agricultural assets; non-agricultural assets; household production technological level ;public transfers; private transfers; adaptive capacity; physical connectivity; economic connectivity; household demographics. Though based on the FAO model, the inclusion of additional characteristics enables the assessment of which households are able to tap into alternative options for taking advantage of opportunities and accessing the resources needed in order to deal effectively with shocks, i.e., to adapt.[18]

## 6) Tulane University

Tulane University's Disaster Resilience Leadership Academy and the State University of Haiti also employ a multi-dimensional approach for analyzing resilience and the effects of humanitarian assistance on resilience outcomes in the aftermath of 2010 earthquake.19 A Haiti Resilience Impact and Change Model was developed based on three components: the resilience characteristics of an individual, household or community; the scope and nature of the shock; and the presence and type of humanitarian response. Deconstruction of the composite scores calculated for each of the seven dimensions of resilience illustrate how individuals, households and communities who experience a shock adapt, absorb, erode or fail. A key strategy utilized in developing the evaluation involved stakeholder input to guide design and implementation, help identify resilience indicators of significance in the Haiti context, and develop survey tools.

## 7) USAID

USAID's multi-dimensional approach to measuring resilience in the Horn of Africa and the Sahel seeks to identify resilience factors contributing to food security in the face of droughts. The model focuses on creating indices around six domains of resilience, each of which "contribute[s] to and collectively constitute" resilience: income and food access, assets, social capital/safety nets, nutrition and health, adaptive capacity, and governance. Indicators of stability (over time) are included in each domain. Three "topline" measures, reflecting what USAID considers to be representative of its resilience investments, have been selected: prevalence of households with moderate or severe hunger (based on the Household Hunger Scale), depth of poverty (the difference between mean income and the poverty line), and prevalence of Global Acute Malnutrition.[20]

In Kenya, USAID utilizes WFP planned beneficiary numbers as a proxy for humanitarian assistance needs (i.e., increased resilience will lead to a reduction in the need for humanitarian assistance), which will be normalized by severity of drought using the Water Requirements Satisfaction Index and the Normalized Differences Vegetation Index. If food price increases affect humanitarian assistance responses, food commodity prices may also be used as a normalization factor. This approach attempts to use existing data collection efforts as much as possible rather than rely on new survey data. Data collected through population-based surveys for Feed the Future projects, annual monitoring for a specific project, and other ongoing studies carried out by the government or other institutions are used to acquire appropriate data. In addition, qualitative data and focused surveys will be used to supplement this information.

## 8) Tufts University/World Vision

In collaboration with World Vision, a research partnership between the Feinstein International Center at Tufts University and the College of Dryland Agriculture and Natural Resources at Mekelle University in Tigray is measuring resilience in Northern Ethiopia by assessing "livelihoods change over time" (LCOT).[21] The LCOT approach captures both static livelihood outcomes (e.g., food security, health status, education level),

16  Alinovi, L., Mane, E. and Romano, D. (2010). Measuring Household Resilience to Food Insecurity: An Application to Palestinian Households.

17  Alinovi, L., et al. (2010). Livelihood Strategies and Household Resilience to Food Insecurity: An empirical analysis for Kenya

18  Ciani, F. and Romano, D. (2013). Testing for Household Resilience to Food Insecurity: Evidence from Nicaragua. University of Florence.

19  Tulane University and State University of Haiti (2012). Haiti Humanitarian Assistance Evaluation: From a Resilience Perspective. Tulane University's Disaster Resilience Leadership Academy.

20  Collins, G. (2012). Measuring the Results of USAID Resilience Investments in the Horn and Sahel. Concept Note.

21  Vaitla, B., et al. (2012). Resilience and Livelihoods Change in Tigray, Ethiopia. Feinstein International Center, Tufts University. October 2012.
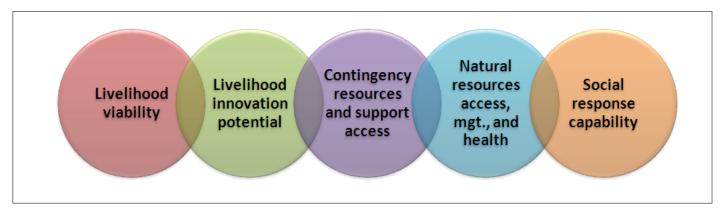
which are typically measured in a fairly linear manner, and more complex outcomes based on dynamic interactions between livelihood strategies, policies and programmes, and institutions, which can enhance or limit household responses. To measure resilience, the study utilizes a number of indices, scores and individual variables to look at changes in seven indicators of livelihoods outcomes and household well-being across years (i.e., from hunger season to hunger season):

- Household Food Insecurity and Access Scale (HFIAS)
- Coping Strategies Index (CSI)
- Food Consumption Score (FCS)
- Illness Score
- Value of Productive Assets
- Net Debt
- Income (per capita daily expenditure)

Findings from the study remain preliminary, as only one year of data has so far been collected (i.e., one hunger season and one post-harvest season), but suggest that programme impact will depend more on factors associated with "change" rather than factors associated with "current status", and that these factors will vary depending on how households change over time (i.e., which resilience pathway households experience).

## 9) Oxfam and Africa Climate Change Resilience Alliance (ACCRA)

The multi-dimensional approaches utilized by Oxfam and ACCRA involve identifying household and community characteristics of resilience, regardless of whether a shock has occurred. It is based on the belief that 'bouncing back' to a highly vulnerable / chronically poor situation is not a sufficient goal. The Oxfam model utilizes the Alkire-Foster method of analysis used by the Oxford Poverty and Human Development Initiative. The method involves developing several composite indices based on a number of indicators that reflect various manifestations of the multidimensional construct of interest, e.g. poverty. The dimensions proposed by the model are shown in the circles below. For each dimension locally contextual indicators are identified, weighted and binary cut-offs developed for each indicator. In a pilot study in Ethiopia 37 indicators were identified and measured for intervention and comparison households.[22]



## 10) Mercy Corps Somalia Study

The Mercy Corps study examines household resilience factors most closely associated with the conflict, drought and governance shocks that resulted in the 2011 famine in Somalia. Again, this study assesses both coping and adaptive strategies adopted by households in response to shocks, as well as other well-being outcomes.

## 11) Catholic Relief Services (CRS) Sahel Study

CRS's Sahelian Resiliency Study analyzed not only exposure to specific types of shocks, but also the types of risk management strategies households adopt in order to deal with them, including coping responses (short-term adjustments until the household returns to its prior livelihood strategy) and adaptive responses (structural changes in livelihood strategies in response to shocks or longer-term stressors).

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22   Hughes, K. (20130). A Multidimensional Approach for Measuring Resilience – Oxfam GB Working Paper. Retrieved from http://oxfamilibrary.openrepository.com/oxfam/bitstream/10546/302641/4/dp-measuring-resilience-010813-en.pdf.

# Annex 2: Components and Potential Indicators of Resilience

| Category | Definition | Examples | Potential Indicators |
|---|---|---|---|
| **Physical** | The basic infrastructure (roads, railways, telecommunications) that people use to function more productively. | *Capital* <br> • Infrastructure – roads, water, electricity, telecoms <br> • Access to new technologies / equipment <br> • Land security / ownership | *Capital* <br> • Access to all weather roads <br> • % households with electricity supply <br><br> *Capacity* <br> • % households with year round access to clean water <br> • Water storage / reserve capabilities <br> • Crop storage / reserve capacity |
| **Human** | The sum of skills, knowledge, labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood outcomes. | *Capital* <br> • Educational and skill levels of household members <br> • Food security of household <br> • Health and nutritional status of household members | *Capital* <br> • % households requiring formal food/cash assistance <br> • % global and severe acute malnutrition rates <br> • Gross / net enrolment rates <br><br> *Capacity* <br> • # Households members with secondary education or higher <br> • # Household members economically active |
| **Financial** | The cash that enables people to adopt different livelihood strategies. This can be in the form of savings, or a regular source of income such as a pension or remittance. The inputs that support livelihoods, as well as the producer goods (tools, equipment, services) that contribute to the ability to increase financial capital. | *Capital* <br> • Income reliability and growth <br> • Opportunities for employment and trade <br> • Productivity of livelihood <br> • Price and income variations <br> • Functioning markets <br> • Risk financing / insurance <br> • Assets owned and goods produced – livestock/ crop /stock <br> • Access to financial services | *Capital* <br> • Income level <br> • % of households with secure access to land for livelihood purposes <br> • Livestock numbers and value <br> • Crop production / value <br><br> *Capacity* <br> • # household sources of earned income <br> • Access to functioning markets <br> • Access to saving and credit facilities <br> • Access to agric / livestock extension services |
| **Natural** | The natural resources (land, forests, water) and associated services (e.g. erosion protection, storm protection) upon which resource-based activities (e.g. farming, fishing etc.) depend. | *Capital* <br> • Access to and quality of natural resources – land / rangeland / forests, water, soil <br> • Sustainable management and regulation of natural resources <br> • Carrying capacity – human and animal populations | *Capital* <br> • Extent of natural tree cover <br> • Households undertaking reforestation activities <br> • # functional NRM/ rangeland management committees <br><br> *Capacity* <br> • % time quality pasture available <br> • Quality of rangeland management <br> • Rate of deforestation |
| **Social** | Access to and participation in networks, groups, formal and informal institutions. Peace and security. | *Capital* <br> • Local kinship support networks <br> • Number, scale and functionality of community organisations / governance structures and self-help groups <br> • Participation in the above groups <br> • Community ability to plan, mobilise resources and implement; <br>   o Conflict reduction <br>   o Improved services <br>   o Natural resource management <br> • Fair and transparent access to resources <br> • Leadership role of women | *Capital* <br> • # functioning local structures / committees <br> • % of households with woman and marginalized groups involved in local planning processes <br><br> *Capacity* <br> • Quality of leaders /institutions (fair, responsive, non-corrupt) <br> • % population living in peace and security <br> • % year there are no incidences of conflict / insecurity <br> • Community resources raised to build resilience |