INPUT PAPER

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Building Disaster Resilience for Sustainable Human Development

Lessons Learnt from Community Based Resilience Analysis in the Horn of Africa

Catherine Fitzgibbon

Yuko Kurauchi

Francis Opiyo

Courtenay Cabot Venton

UNDP Drylands Development Centre

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1. Background

The Horn of Africa (HoA) has long faced droughts and other natural disasters. But in recent years, as the impacts of extreme events have begun to worsen, partially as a result of climate change, already stressed communities have been pushed to the limit of their adaptation and coping capacity. Therefore, supporting communities to become resilient in the face of disasters has emerged as a key goal for governments and development and humanitarian stakeholders in the region. As a consequence, programmes and funding strategies are increasingly realigning themselves around resilience-building objectives. This is largely perceived as a positive step amongst Governments and other agencies working in the region, since it helps fill in the gaps of traditional risk and vulnerability oriented approaches, by extending their foci to the potentials, opportunities and capacities of 'at-risk' populations to cope with inevitable future disaster-related shocks and other socio-economic stresses.

Nevertheless, there are still significant challenges in translating the disaster 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 Community Based Resilience Analysis (CoBRA) project in 2012, with the financial support from the European Commission Directorate General for Humanitarian Aid and Civil Protection (ECHO). The CoBRA methodology is one of the first practical analytical tools developed to identify indicators for measuring community resilience as part of ECHO's wider Drought Risk Reduction Action Plan.

After providing a brief overview of the CoBRA model and field work methodology (section 2), the report outlines and analyses the key findings of four full CoBRA assessments, which were undertaken between June and August 2013 in three counties in Kenya (Marsabit, Turkana and Kajiado) and two districts of Karamoja in Uganda (section 3). The report also provides some of the main feedback generated during review and validation workshops attended by community representatives and technical stakeholders from the local government and non-governmental groups (section 4), which took place at each of the four field sites between September and November 2013. The report then highlights how the findings of the CoBRA assessments inform wider debate and learning on the future disaster resilience and disaster risk reduction (DRR) policy, planning and programming processes at national, regional and broader levels including the discussion on the post-2015 framework for DRR or HFA2 (Section 5).

[1] http://www.disasterriskreduction.net/fileadmin/user_upload/drought/docs/Katie%20Downie%20-%20Technical%20Consortium%20presentation%20to%20FSNWG%20211113.pdf. Retrieved 28 February 2014.

2. Overview of the CoBRA Model

2.1. CoBRA Model

The CoBRA model, presented in Figure 1, was developed through a literature review, stakeholder consultation and field testing during 2012 and 2013.

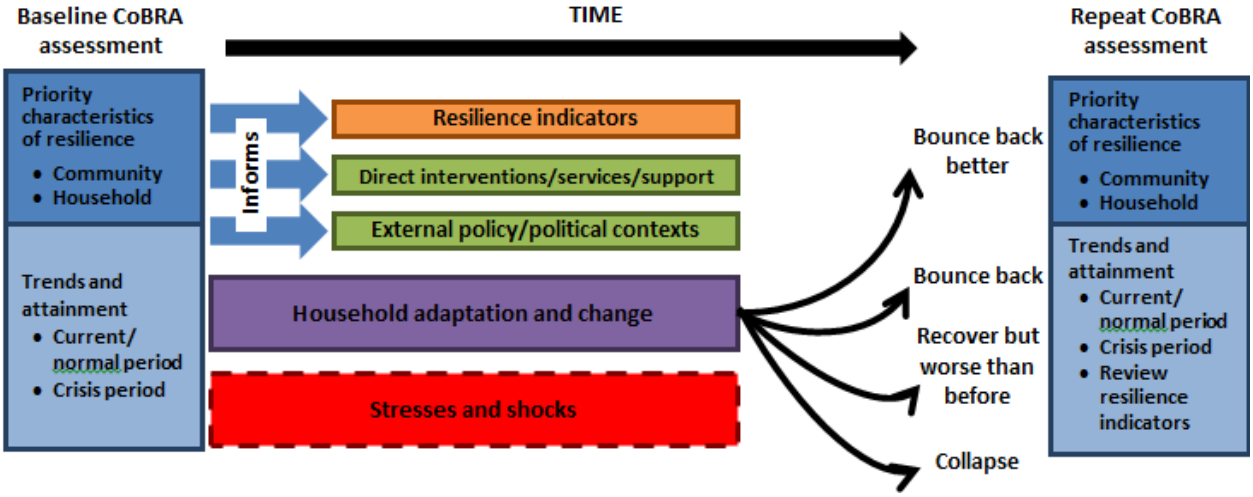


Figure 1: CoBRA Conceptual Model

The hypothesis underpinning the CoBRA conceptual framework is that households would define themselves as resilient if they were able to feed their families adequately every day and meet basic needs on a consistent basis in times of shock and stress as well as in 'normal' times without external relief. 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. Over time, various factors – including policies, support, changes in context or autonomous household adaptation and change – can also influence how communities cope with and overcome various shocks and stresses.

Those households that are able to bounce back to their condition in the pre-crisis period, or even to improve their situation, may be considered resilient. They may have other sources of income and production or some form of contingency buffer exceeding the expected losses arising in a crisis period, or resume levels of income and production in a timely manner after the crisis period. Those households that are collapsing or recovering but worse off than previously may be considered not resilient.

2.2. CoBRA Objectives

During development of the CoBRA methodology and implementation guidelines, it became clear that little consensus exists among stakeholders as to which components or characteristics of disaster resilience are most important. Consequently, the study team decided not to identify any particular components but rather to allow communities themselves to define resilience. This was particularly important because resilience covers such a wide range of activities and indicators. As a result, the methodology that emerged has four broad objectives:

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.

The CoBRA methodology should not be perceived as a comprehensive or stand-alone tool for measuring resilience. The approach is largely a qualitative assessment tool, based on understanding resilience from a community perspective. It does not provide a quantitative measurement of the number or proportion of a population that has achieved resilience. The approach aims to learn from positive experiences by identifying households perceived to be resilient – to understand what those households have or do differently that enables them to cope better with shocks or stresses.

2.3. Approach for Data Collection

Figure 2 outlines the phases and procedures undertaken for a typical CoBRA assessment.

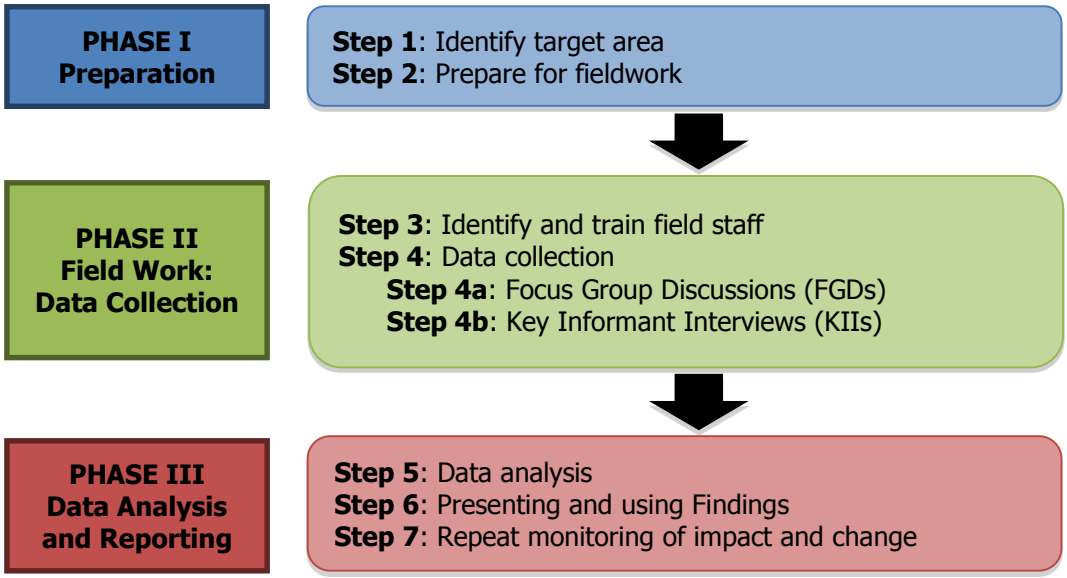
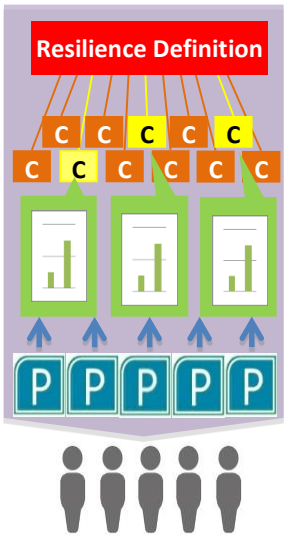


Figure 2 : Phases and Steps in Undertaking a CoBRA Assessment

The CoBRA methodology adopts participatory qualitative approaches in the form of focus group discussions (FGDs) in the sample communities, each with approximately 15 male, female or youth representatives, and key informant interviews (KIIs) with the nominated "resilient households" to identify and prioritize the characteristics of resilience. Box 1 provides the overview of steps followed and the key questions addressed through the FGDs and KIIs. In each field site, data collection was undertaken by three to four teams of four facilitators and one supervisor. Participating voluntarily, all the assessment team members are based and working in the assessment locations with various governmental and non-governmental organizations.

Box 1: CoBRA Field Assessment Steps and Questions Addressed



FGD Step 1. Agree on the definition of resilience: What does a 'resilient' community look like? What are the main hazards or shocks facing the community?
FGD Step 2. Identify resilience characteristics: What does a 'resilient' community look like? What are the characteristics of a resilient community?
FGD Step 3. Prioritize resilience characteristics: Which resilience characteristics are the most important for the community (each FGD member ranks the three most important characteristics)?
FGD Step 4. Rate the community's progress in attaining the priority resilience statements: On a scale of 0 to 10, to what extent has this community achieved each of these characteristics in the current period, and in the last crisis period?
FGD Step 5. Identify the households in the community that have achieved (fully or partially) the resilience characteristics and list their common features and attributes
FGD Step 6. Identify interventions that have contributed to household resilience: What interventions have helped to enhance households' level of resilience, and what additional/future interventions would help to build resilience further?
KII with nominated resilient households: What factors or characteristics have contributed to your household's resilience? How did your household become resilient? 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?

2.4. Identification of CoBRA Assessment Field Sites

Field sites were chosen to represent a range of drought-affected locations in Kenya and Uganda, and specific study sites were selected to ensure representation of different livelihood zones and levels of intervention (see Table 1). Two sites, Marsabit and Turkana, are considered highly prone to drought, having experienced two severe droughts in the last five years (2009 and 2011). In both instances, the counties were declared highly food insecure and were the subject of significant humanitarian response. By contrast, the semi-arid Kajiado county in Kenya and the Karamoja sub-region in Uganda are also prone to drought but to a much lesser extent. Kajiado has not been considered highly food insecure for several years, and Karamoja was last the subject of a Famine Early Warning System Network food security alert in July 2008.

Country	County/Sub-Region (Locations/Districts)	Assessment Periods	# of FGDs	# of KIIs
Kenya	Marsabit (Marsabit Central, Laisamis and Maikon)	4-15 June 2013	41	41
Kenya	Turkana (Turkana North, South, Central, East, West and Loima)	24 June-6 July 2013	42	42
Kenya	Kajiado (Kajiado Central, Mashuru, Loitoktok, Kajiado North and Isinya)	19-30 August 2013	36	40
Uganda	Karamoja (Kotido and Kaabong)	15-26 July 2013	36	36

Table 1: CoBRA Field Assessment Sites

3. Findings

3.1. Introduction

This section summarizes the consolidated findings from the CoBRA field work conducted in the four sites. The findings are presented in the following categories:

- What are the main hazards or shocks facing the communities? (Section 3.2)
- What are the characteristics of a resilient community? (Section 3.3)
- To what extent has the community achieved those characteristics? (Section 3.4)
- What does a resilient household look like? (Section 3.5)
- What interventions contributed to household resilience, and what additional interventions would best build resilience? (Section 3.6)
- How did key informants achieve and maintain resilience? (Section 3.7)

3.2. Main Disasters or Shocks (FGD Step 1)

The main hazard reported in all the FGDs in all four sites was drought. All sites also reported that the timing of the CoBRA assessment coincided with a relatively 'normal' period with minimal shocks or stress. In Marsabit, the drought of 2010-2011 was identified as the most recent crisis period. In Turkana, communities reported that, while past droughts had been longer, the drought of 2010-2011 was the most severe, and its impacts were exacerbated by extremely high food prices, reduced coping capacity and a slow/limited humanitarian response. In Karamoja, the drought of 2010-2011 was referred to most frequently and agreed upon as the main crisis period. In Kajiado, communities viewed drought as the most significant contributor to livestock losses and the single most important factor limiting their resilience capacity. Communities reported the most recent drought, of 2009, as the main crisis period. Other hazards or crises reported included floods, conflicts, livestock diseases and human diseases.

3.3. Characteristics of a Resilient Community (FGD Step 2 & 3)

Focus group participants were asked to state as many characteristics as they could think of to describe a resilient community. Typically each group provided 15 to 20 statements. The participants were then requested to rank and score the statements by importance. Each member was given six beans to rank the three most significant statements (three beans for the most significant statement, two for the second and one for the third) in terms of priority for building resilience. The bean scores were then totalled for each statement. For ease of comparison, the statements were grouped into the five sustainable livelihood framework (SLF) categories.

Table 2 lists the characteristics most commonly cited across the four study sites. It is important to note that there was little variation; the statements/characteristics were ranked similarly in all sites.

Overall, **education**, **water for humans** and **peace and security** were the most highly ranked characteristics of a resilient community. In most focus groups, statements addressing education often referred to and ranked secondary and tertiary levels of education as well as primary. In addition, while communities tended to have access to water in some form, the FGDs stressed the consistent availability of clean water as the main characteristic. In relation to peace and security, many communities felt their overall situation was better at the time of the assessment. However, many focus groups prioritized the statement with the caveat that any deterioration of peace and security or instability in governance system could have an immediate and substantial impact on overall community resilience.

SLF category	Resilience characteristic	Full statement
Financial	• Access to credit	• *People would have good access to affordable credit and would be saving money (through banks, microfinance institutions and community savings and credit).*
	• Productive farms	• *Farmers would be more productive and profitable (i.e., they would have inputs like quality tools, oxen, fertilizers and improved knowledge of good farming practices).*
	• Employment	• *There would be many opportunities for jobs and other forms of paid employment through government, factories or other businesses.*
	• Diversified income generating activities (IGAs)	• *Many households would be involved in other IGAs such as small businesses and trading.*
	• Livestock herds	• *Pastoralists would have herds large enough to sustainably support their families.*
	• Pasture and fodder	• *There would be sufficient pasture (or fodder) for livestock at all times of the year.*
	• Health care for livestock	• *The community would have access to high-quality and affordable animal health services, including veterinary services and vaccinations, whenever they need them.*
Human	• Education	• *All children would be able to complete primary/secondary/tertiary education.*
	• Food security	• *All households would be able to feed themselves well every day.*
	• Health care for humans	• *The community would have access to quality and affordable basic health care locally.*
Natural	• Natural resource management	• *Local rangelands and other natural resources would be well managed so they do not become degraded over time.*
Physical	• Access to markets	• *The community would have easy access to markets to buy goods and sell their produce.*
	• Irrigation	• *Farmers would be irrigating land to improve the production of crops for consumption and sale.*
	• Roads	• *There would be good-quality roads to the community.*
	• Sanitation	• *Everyone would have good sanitation.*
	• Shelter	• *Everyone would live in good-quality housing.*
	• Telecommunications	• *There would be a reliable mobile phone network to all communities all the time.*
	• Water for humans	• *The whole community would have access to sufficient, good-quality water at all times of the year.*
	• Water for livestock	• *Livestock would have access to sufficient water at all times of the year.*
Social	• Peace and security	• *The whole community would enjoy continual peace and security.*

Table 2: Highly Ranked Community Resilience Statements by SLF Categories

3.3.1. Analysis by Gender and Age

Statements were also analysed according to gender and age groups (Table 3). While some similarities in priority statements can be observed among the groups, there were also some key differences:

- Women consistently mentioned **education** and **water for human consumption** as priority resilience characteristics.
- Men tended to focus on **peace and security**, **education** and **water for human** consumption.

- Youth focused on **education**, but they were often more concerned with characteristics that build income and wage opportunities, including **access to markets**, **access to credit**, **employment** and **roads**.

Gender/age group	Marsabit	Turkana	Karamoja	Kajiado
Women	Peace and security Education Water for humans	Education Diversified IGAs Water for humans	Productive farms Education Livestock herds	Education Water for humans Health care for humans
Men	Peace and security Water for humans Education	Education Peace and security Water for humans	Productive farms Peace and security Education	Education Water for humans Health care for humans
Youth	Education Peace and security Water for humans	Education Access to markets Access to credit	Education Access to markets Access to credit	Roads Education* Water for humans* Employment*

*These three characteristics received the same scores.

Table 3: Top Three Resilience Characteristics by Gender and Age Group

3.3.2. Analysis by Livelihood Group

Table 4 summarizes the top resilience characteristics by livelihood group. In almost all livelihood zones, **education** featured as a prominent characteristic of resilience.

Livelihood	Marsabit	Turkana	Karamoja	Kajiado
Agropastoral	Peace and security Water for humans Education	Peace and security Education Food security	Productive farms Education Health care for humans	Water for humans Education Health care for humans
Pastoral	Education Peace and security Water for humans	Education Irrigation Water for humans	Productive farms Livestock herds Peace and security	Education Health care for humans Water for humans
Agricultural	-	-	Productive farms Access to credit Education	Education Irrigation Access to markets
Peri-urban	Peace and security Education Water for humans	-	Peace and security Education Access to credit	Education Roads Productive farms
Urban	-	Education Diversified IGAs Water for humans	-	Roads Access to markets Education
Fishing	-	Education Water for humans Diversified IGAs	-	-

Note: Empty cells indicate the livelihood group was not interviewed in that location.

Table 4: Top Three Resilience Characteristics by Livelihood Group

Some notable differences include:

- Pastoral areas consistently prioritized **water for human consumption**, which is logical given that they are generally least likely to be located close to permanent water sources. **Access to livestock inputs** was also highly rated when considered as a group: livestock herds, water, pasture and health inputs, etc.
- Peri-urban groups in Marsabit and Karamoja tended to mention **peace and security** more than the other groups. Many of the peri-urban groups were made up of pastoralists who were formerly more mobile and had larger herds but have become

sedentary as a result of insecurity as well as lack of water and pasture, livestock diseases, etc.

3.3.3. Analysis by Intervention Level

In each assessment site, survey sites were also selected to represent a range of core and peripheral locations. Before the field work, all sublocations (Kenya) and sub-counties (Uganda) in the target area were mapped to identify those with high, medium and low access to services and interventions such as higher level basic services, roads, mobile phone network coverage, cash transfers, market access, etc. (Table 5).

Intervention level	Marsabit	Turkana	Karamoja	Kajiado
High	Peace and security Education Water for humans	Education Diversified IGAs Water for humans	Productive farms Education Health care for humans	Roads Education Water for humans
Medium	Peace and security Education Water for humans	Education Water for humans Diversified IGAs	Productive farms Education Livestock herds	Water for humans Education Roads
Low	Water for humans Peace and security Education	Education Peace and security Health care for humans	Productive farms Education Health care for humans	Education Health care for humans Water for livestock

Table 5: Top three resilience characteristics by intervention level

- Access to **water for human consumption** and **education** were consistently mentioned as key characteristics of resilience for both high and medium intervention areas.
- By contrast, low intervention areas, while also ranking **education** highly, put more emphasis on **human health** and to some extent **peace and security**.

No significant patterns emerged in the resilience characteristics identified by the different intervention level groups. All groups gave priority to characteristics generally identified with education. Peace and security and health were mentioned more regularly by the low intervention groups, which may reflect the fact that as insecurity increases the provision of many basic services decreases, as does NGO activity. This highlights the critical role insecurity plays in perpetuating an area's low intervention status.

3.4. Extent to Which Community Achieved Resilience Characteristics (FGD Step 4)

Focus group participants were asked to score the extent to which they had achieved their priority characteristics of resilience. They scored each statement twice: first for the current period (agreed to be a normal period) and second for the last significant crisis period. The scores are ranked on a scale from 0 to 10, with 10 being perfect attainment of that characteristic (for example, the entire community has access to sufficient safe water at all times during a calendar year), and 0 being no attainment (no one in the community has access to sufficient safe water at all times of the calendar year). This section did not include gender-based analysis because focus groups were asked to rank the attainment of resilience characteristics for the entire community. Therefore any differences between men and women in the same community would be based on perceptions.

Table 6 provides the overall average scores of the perceived attainment rates for the top-ranked community resilience characteristics in normal/crisis periods in the four assessment

sites. The top-ranked statements were not the same in every location; cells are left blank where that statement was not relevant to the location. Clearly, **the scores represent the focus group participants' context-specific perceptions, which are not statistically significant and should not be compared among the assessment sites**. However, they do provide a useful sense of how the community members perceive different aspects of their resilience. This can be especially critical for measuring less quantitative factors such as peace and security.

Characteristic	Current	Crisis	Current	Crisis	Current	Crisis	Current	Crisis
	Marsabit		Turkana		Karamoja		Kajiado	
Overall average	3.7	2.4	2.5	1.3	4.8	1.9	3.5	2.3
Three highest scoring statements								
Pasture and fodder	6.7	2.1	-	-	-	-	-	-
Peace and security	6.1	4.1	3.3	1.8	7.1	2.2	4.5	4.2
Water for livestock	5.9	2.9	-	-	5.2	1.6	4.4	1.4
Livestock herds	-	-	3.2	2.0	-	-	-	-
Natural resource management	-	-	3.1	0.7	-	-	-	-
Education	-	-	-	-	5.6	2.2	-	-
Access to markets	-	-	-	-	5.2	2.3	-	-
Access to credit	-	-	-	-	-	-	4.4	3.2
Three lowest scoring statements								
Access to credit	1.0	0.5	1.4	0.8	3.7	1.3	-	-
Productive farms	2.0	0.0	-	-	-	-	-	-
Telecommunications	2.1	1.1	-	-	-	-	-	-
Irrigation	-	-	0.9	0.6		-	2.5	1.6
Roads	-	-	1.8	1.1	-	-	2.1	1.4
Livestock herds	-	-	-		3.6	3.8	-	-
Employment	-	-	-		4.0	1.3	2.1	1.3

Table 6: Community Attainment of Resilience Characteristics – Top-Ranked Statements

Peace and security and **water for livestock** are the characteristics of resilience that had the highest attainment scores in the current period for most locations. This is likely due to favourable climatic patterns in the recent past and relative social stability.

While **access to credit** was scored highly in Kajiado (implying this was a characteristic that most of the community had attained), it was one of the lowest scoring factors for the three other sites. This is likely because of the proximity of Kajiado county to the capital city of Nairobi and the presence of many microfinance institutions in the area. Other characteristics that received a low score from two of the four sites include **irrigation** (Turkana and Kajiado), **roads** (Turkana and Kajiado) and **employment** (Karamoja and Kajiado).

When the levels of resilience achieved in a normal period and a crisis period are compared, several points can be noted:

- In most locations, communities did not perceive that they had progressed towards attaining their priority characteristics of resilience (i.e., score mostly less than 5 out of 10 even in a normal period). This highlights the chronic underlying vulnerability of all these communities.
- It is not possible to compare the scores of one site with those of another to assess relative levels of resilience. First, as the assessments in each site were conducted

independently, the scores cannot be seen as relative to each other. Further, because each site had variations in its priority characteristics, the communities were not always ranking the same set of indicators. For example, in terms of food security and other human development indicators, Kajiado is relatively better off than the other sites, but its resilience scores were similar to the other areas. This may demonstrate the context-specific and dynamic nature of resilience concepts: while some characteristics are universally and persistently viewed as important (such as education), the priority of other characteristics changes over time as the members of a community transform their lives and livelihoods. An example is the recent shift of livelihoods from pastoralism to agriculture and other alternative livelihoods in Kajiado.

Nonetheless, there are interesting comparisons to be made in the differing gaps between the normal and crisis periods. Karamoja communities felt they had attained the highest level of resilience overall, but proportionately their scores dropped more significantly than elsewhere during a crisis period. There are several possible explanations for these results. One is that communities are better able to withstand shocks in Kajiado as a result of their higher level of development and access to markets. Conversely, as communities in Turkana already have such a low level of resilience, it is hard for the scores to fall further during a shock. Additionally, while Turkana is chronically underserved in all sectors, during crises it receives relatively comprehensive levels of humanitarian support in terms of food aid, cash transfers, water tankering, etc. This in turn may make the community feel more supported in crisis times, even though only for the short term. Karamoja, by comparison, is not so chronically underserved but may not have such comprehensive and timely response programming in place. Hence its communities are more heavily affected by shocks and crises.

3.5. What a Resilient Household Looks Like (FGD Step 5)

Focus group participants were asked to describe the characteristics of households that were more resilient compared to others, that is, the households that had attained many or all of the resilience characteristics prioritized. The top characteristics of a resilient household, cited consistently by focus groups across all four locations, were:

- Having a member with employment or wage labour;
- Having a business or other IGAs less dependent on the weather;
- Having a large herd; and
- Having a large farm.

These are all largely related to diversification of risk, in the form of either alternative or reliable forms of income or significant assets (such as herds and land) that allow a family to absorb or mitigate the impacts of shocks and stresses. The section on interviews with key informants contains more detail on the interplay between the factors that propel a household towards greater resilience.

Focus groups were further questioned about whether the number of resilient households was increasing, decreasing or staying the same. Table 7 shows the average proportion of focus group members citing increasing resilience. As above, not every group was interviewed in every location, and therefore blank cells are left where the data were not gathered. Some of the findings include:

- Women tended to be more optimistic than men and youth, with the exception of Turkana, where youth were the most optimistic.
- There was little consistency across livelihood groups. In Marsabit and Kajiado, over 75 percent of the pastoral respondents felt that resilience was increasing, whereas in Turkana and Karamoja 25 percent or less expressed that optimism. Agropastoral groups were very positive in Karamoja and Kajiado, but there was much more pessimism in Marsabit and Turkana. The proportion of urban and peri-urban groups sensing an increase in resilience similarly ranged from none to three quarters of the respondents.
- Groupings by intervention levels also showed no clear patterns.

	Marsabit	Turkana	Karamoja	Kajiado
Overall average	60%	46%	52%	63%
Gender/age				
Women	69%	40%	62%	73%
Men	56%	43%	40%	46%
Youth	60%	58%	47%	67%
Livelihood groups				
Agropastoral	38%	9%	67%	60%
Pastoral	76%	25%	10%	73%
Agricultural	-	-	50%	86%
Peri-urban	60%	-	75%	0%
Urban	-	18%	-	33%
Fishing	-	100%	-	-
Intervention level				
High	17%	59%	54%	50%
Medium	81%	36%	50%	67%
Low	71%	25%	50%	75%

Note: All figures below 50 percent are highlighted. Empty cells indicate the assessment did not focus on that livelihood group in that location.

Table 7: Proportion of Households Citing Increasing Resilience

The main explanation given by respondents for increasing resilience related to the positive spiral of improved access to education in the assessment locations: more educated children lead to better access to diversified IGAs, they felt, which in turn results in higher household and community prosperity and a more empowered community.

By contrast, the reasons for decreasing resilience were largely associated with concurrent drought, conflict, disease, limited resources and lack of employment/income-generation opportunities.

3.6. Interventions That Contributed to Household Resilience (FGD Step 6)

Communities were asked to list all the services and interventions they had benefited from in the last two to five years. A reasonably wide range of sectoral and public, non-governmental and private interventions was mentioned. These included water, education, livestock restocking, cash transfers, health services, mobile phone coverage, inputs to productive farms, roads and other livestock support. From this long list, each focus group was asked to identify jointly the three current or previous interventions that had been most beneficial in building their resilience, and to explain why.

Groups were also asked to list the three additional interventions they felt would best build their resilience. Many communities restated interventions similar to those mentioned in the

first list, with the justification that the current provision or scale of intervention was too limited and should be expanded. The most commonly cited interventions (combining present and future) are summarized in Table 8.

Type of intervention	Marsabit	Turkana	Karamoja	Kajiado	Total
Education Bursaries and scholarships; construction or renovation of school facilities, including boarding facilities	38	40	33	46	157
Water Water source improvement, improved storage capacity	48	35	33	33	149
Health care Improvements to health services, staffing or facilities	20	26	29	32	107
Inputs to productive farms Irrigation, greenhouses, oxen, agricultural extension services, etc.	16	12	25	19	72
Restocking Programmes restocking livestock, particularly with drought-resilient breeds or animals such as camels	28	15	10	3	56
Access to credit or other forms of business support	12	17	18	7	53
Roads	12	9	9	15	45
Cash transfers Transfer of resources targeted at the most vulnerable populations such as the chronically food insecure (e.g. hunger safety net programmes) and children (e.g. child sponsorship programmes)	18	20	-	-	38
Other livestock support Livestock markets, health services, fodder for production, etc.	10	3	5	7	25
Mobile phone coverage	15	-	1	2	18
Markets Safe and constant access to markets for buying/selling goods	-	4	5	9	18

Table 8: Resilience-building Interventions Most Commonly Cited by Focus Groups

The table shows the repeated and clear priority given to **water**, **education** and **health** interventions. These interventions reflect the high ranking given to these factors as characteristics of resilience by all focus groups. Water interventions were prioritized for obvious reasons, particularly for improving food security and livelihoods. These included any interventions that expanded water sources and water storage facilities, such as tanks at household level or water pans at community level. Education was seen as a benefit in itself and one that would also lead to improved life chances, such as employment for children. Interventions such as scholarships, bursaries and boarding schools were regularly cited as important for ensuring that children completed higher levels of education.

Health interventions were also perceived as critical. Household resilience can be seriously undermined by the illness of a household member, leading to a significant loss of productive

time and income, especially when health facilities and services are lacking or costly. Agricultural interventions also ranked highly in three of the four sites.

3.7. How Key Informants Achieved Resilience

The second major form of data collection for a CoBRA assessment is key informant interviews undertaken with members of households identified as resilient. Between 36 and 42 KIIs were undertaken in each assessment site, providing a total of 159 interviews for analysis. KIIs followed a semi-structured interview format that examined the following four areas:

- Composition and characteristics of the household;
- Pathways to resilience;
- Ability to cope with recent shocks and hazards; and
- Priority interventions recommended by resilient households.

3.7.1. Composition and Characteristics of Resilient Households

The KII record sheet records the age, gender, education level and economic activity of all members of the household interviewed. The size of resilient households varied considerably from 1 to 14 members, with an average household size of 6 members for each site (Table 9). The table also shows the average educational attainment of members of resilient households and the average literacy rate for the area. Although the average literacy rate is not a directly equivalent comparison, it suggests that resilient households have significantly **higher education levels** than average. Additionally, the majority of school-age children in these households were reported to be in full-time education. In areas where very low proportions of the population have education, those with education are far better placed to access any job opportunities that arise. Education also improves commercial and financial literacy, enabling households to engage better with markets and develop IGAs.

Location	Marsabit	Turkana	Karamoja	Kajiado
Average household size	6.0	5.7	6.2	6.4
Percent of households with at least one member who has completed primary school	74%	69%	66%	89%
Percent of households with at least one member who has completed secondary school or higher	48%	43%	34%	69%
Average literacy rate for the area[2]	26%	18%	21%	55%

Table 9: Size and Education Levels of Resilient Households

All 159 key informants had household member(s) engaged in one or more of the following activities:

- Wage employment or casual labour;
- Business or petty trade;
- Livestock raising;
- Agricultural production; or
- Fishing (only in Turkana).

[2] This is not a directly comparable statistic as it refers to individuals, not households; however, recent data on education completion rates per household are not easily available.

Table 10 shows the percentage of households benefiting from different income sources. In all sites, the great majority of resilient households had **multiple income sources**; only in Marsabit did the proportion of such households fall below 90 percent. Marsabit was also the only site where a significant number of resilient households relied exclusively on livestock, consisting of pastoralists with large herds. The table also shows that the diversified income sources do not replace their traditional agricultural or pastoral activities but are in addition to them. Turkana is the only site where more of the resilient households interviewed benefited from diversified livelihood income than from on-farm or fishing income.

In all assessment sites, the diversification of income sources emerged as the key characteristic of resilient households. Most were supplementing traditional on-farm activities with wage and/or business incomes. Table 11 shows the percentage of key informants who had multiple income sources and then breaks down the type of income relied upon.

Location	Marsabit	Turkana	Karamoja	Kajiado	Total / average
Total number of key informants	41	42	40	36	159
Percent with multiple income sources	75%	90%	98%	100%	91%
Percent with agricultural, pastoral or fishing income	80%	78%	95%	98%	87%
Percent with income-earning activities/small business income	48%	83%	80%	86%	74%
Percent with wage or casual labour income	51%	45%	53%	58%	52%

Table 10: Income Sources of Resilient Households

These findings strongly reinforce the defining characteristics of resilient households cited by focus group participants. These characteristics were the only findings that were uniformly accepted by the participants in the validation workshops as valid in each assessment site.

Interestingly, a study by the Kenya National Bureau of Statistics and Society for International Development (2013) highlighted the clear link between individuals' educational attainment and participation in the labour market in Kenya:

> "People with no education in Kenya are 1.7 times more likely to have no work than people with secondary education or above. Employment for pay is higher for individuals with a secondary education in both rural (21.3 percent) and urban (43.2 percent) areas, even though employment for pay in urban areas is twice the employment for pay in rural areas. Overall, individuals living in urban areas who have no education are twice as likely to be without work as their rural counterparts. Higher educational attainment is associated with lower participation in agricultural activities."

3.7.2. Pathways to Resilience

When respondents were asked how they became (and remained) resilient, responses were consistent in all assessment areas. Virtually all respondents cited their **multiple income sources** as the reason for their resilience. In particular, resilient households often mentioned non-farm income sources, which are generally less dependent on rain and thus less affected by drought.

Another regularly repeated theme was the use of **one income source to expand or improve others and build assets**. For example, households with a wage earner or business regularly explained that income from either of these sources had been saved and used to start or grow businesses, expand livestock herds or invest in agricultural production. The value of education in enhancing incomes was also repeatedly mentioned. Again, resilient households noted that having multiple incomes and more assets (especially bigger herds) enabled the households to keep more children in school for longer. Typically, these households could afford to sell livestock to pay school fees, which increased employment chances. Hence resilient households were in a positive spiral of income growth and asset accumulation.

Good livestock management, particularly timely destocking and restocking of herds, was repeatedly mentioned by resilient households in pastoral areas. The proceeds from timely sales of livestock were used to support the remaining livestock (for example, to purchase water, fodder, health care); pay for the households' basic needs, such as food and school fees; and restock after the crisis period. This ensures that household herd sizes can 'bounce back' relatively quickly following a shock, including drought.

Over one quarter (27 percent) of respondents mentioned the role of **saving and loans** in expanding their income or income sources. This was most common in Kajiado and least in Karamoja. The majority of households were involved in some form of savings and credit group structures, while others borrowed from family or friends. In Karamoja, dowry payments were mentioned as an income used to start businesses or grow herds.

A few respondents cited their good household management or their business-mindedness as factors supporting their resilience (see Box 4). Two respondents cited support they received from NGO projects as factors in making them resilient. One household was given a camel as part of a restocking project and another was a beneficiary of a voucher redemption project.[3]

Box 2: Examples of interviewees' pathways to resilience

Marsabit: *"I knew in the middle of the year it was going to be bad so I sold five goats and used the money to hire a vehicle to take the rest of my herd to where there was pasture."*
"I went to the mission school; the nuns gave me a scholarship to complete secondary. Then I got a job with an NGO. My wife is a teacher. We also trade goats."

Karamoja: ***"****I was the only son in a family with four sisters. We got cows as bride price for each one so I inherited a large herd. I sell animals each year to pay for school fees. My oldest now has a job in Kampala and also sends money for schooling."*

Kajiado: *"After finishing secondary school I got a job as a farm manager for three years. I used the knowledge I gained to start my own farm growing vegetables. With the money I made I bought more land to expand production and build a shop. I also now rent some of the land."*
"My husband died and left me a cow. We now have three, so we always have milk. I worked as a farm labourer to pay school fees, my oldest got bursary from CDF to complete secondary. Now she has a job and pays school fees for my other children."

[3] The beneficiary was a trader in the project whereby the most food insecure were issued with vouchers for a certain locally available food item – milk, meat or fish. The vouchers could be redeemed with local traders who were in turn paid by the project. The increased and stable demand assisted in growing the traders' business.

3.7.3. Ability to Cope with Recent Shocks and Hazards

The majority of key informants referred to drought as the major hazard they had faced. Most indicated that they were better placed to cope with this crisis than others due to their **additional income sources and assets**. Those with wage and business income noted that these income sources were not so affected by drought and therefore could be relied upon through these periods. **Timely sale of livestock** was repeatedly mentioned by pastoral households as a coping strategy as well as a longer term route to resilience (i.e. longer term adaptation). **Moving livestock** to areas of good grazing and water was also mentioned by households with livestock.

Other coping strategies that were mentioned with less frequency included the use of savings (sometimes through savings or credit groups or structures); loans from friends and family; credit from traders; and reduction of expenditures and consumption.

A minority of respondents (approximately 10 percent) mentioned specific interventions as useful coping factors. These included cash/food for work schemes; cash transfers such as the hunger safety net programme in Marsabit and Turkana; training from NGOs; peace forums; and water tankering.

On the whole, it was clear that resilient households coped better with drought than others due to their higher and more diverse incomes. These are a result of longer-term adaptation and investments during and beyond drought crisis periods, such as keeping children in school or starting businesses in non-drought periods. Good herd management, including the timely sale of livestock, was the most significant short-term or immediate coping strategy that took place during or before a hazard period for pastoral groups.

3.7.4. Priority Interventions

Key informants were asked for the three most important interventions to improve their communities' resilience. Table 11 lists the four intervention areas most commonly cited by each of the four assessment sites.

Ranking	Marsabit	Turkana	Karamoja	Kajiado
1st	Livestock production inputs	Access to credit, business support	Agricultural production inputs	Access to credit, business support
2nd	Access to credit, business support	Irrigation	Education	Good livestock management practices
3rd	Water	Education	Access to credit, business support	Education
4th	Agricultural production inputs	Water	Water	Agricultural production inputs

Table 11: Resilience-Building Interventions Most Commonly Cited by Key Informants

The commonality of interventions cited across and between assessment sites shows a clear preference for interventions that increase productive assets and business skills, and hence income. Although many or all of these interventions were also mentioned by focus group participants, key informants generally rated them higher. This is understandable, as the majority of these households have small businesses and a more business-oriented approach to their on-farm activities.

It is also notable that resilient households did not mention interventions related to humanitarian response, such as restocking and cash transfer programmes. Interestingly, in Kajiado, many respondents referred to actions that should and could be taken by households themselves rather than externally delivered interventions. This reflects a much greater level of self-reliance at this site, which has not had the same history of NGO and governmental humanitarian and development programmes. Consequently many idiosyncratic actions or interventions were mentioned in this area alone, such as "people should practice rotational grazing techniques" and "store acacia seeds for fodder".

4. Feedback from the CoBRA Findings Joint Review Processes

The findings of the CoBRA analyses were presented to local stakeholders, both community representatives and technical stakeholders, across all the sites where the assessment was conducted in both Kenya and Uganda:

- 3-4 September in Marsabit, Marsabit county;
- 2-3 October in Lodwar, Turkana county;
- 29-31 October in Kotido and Kaabong in Karamoja sub-region; and
- 6-7 November in Kajiado, Kajiado county.

The assessment results from Kotido and Kaabong districts were also presented to stakeholders at the national level in Kampala, Uganda, on 28 November 2013.

These sessions proved to be a critical process in the CoBRA methodology as they encouraged dialogue on community and household resilience among a diverse and dynamic set of stakeholders, both those drawn from the community and technical experts. They also helped establish a common local standpoint on the issues under investigation while cultivating ownership of the assessment results. This section highlights some of the main feedback points on the assessment outcomes, putting the findings in context.

In all the review and feedback workshops, participants largely agreed that the ranked resilience characteristics resonated well with the reality in these communities and, in general, the characteristics prioritized by the communities were what the stakeholders expected. They also acknowledged that a common thread of resilience characteristics emerged across all locations, even though the surveyed communities were diverse in terms of nationality, age, ethnicity, religion, sex and socioeconomic status.

The three most commonly cited and relatively equally prioritized resilience characteristics were in the areas of:

- Education;
- Water for humans; and
- Health care for humans.

Peace and security also emerged as a critical priority for resilience, particularly in the northern Kenya assessments (Marsabit and Turkana). The feedback sessions emphatically validated the two most highly ranked resilience-building interventions in all assessment locations, those involving the education and water sectors.

At the same time, all the feedback sessions noted that the communities failed to fully capture and appreciate the contribution of natural resources management to local resilience-building, and the roles and importance of natural resource management were largely subdued both in priority resilience characteristics and resilience-building interventions. This was partly due to lack of awareness; given that these resources have always been present, they are taken for granted. Also, there has been limited community ownership of local natural resources across the assessment sites.

Many feedback sessions also raised a concern that the livestock sector was undervalued and did not feature as significantly as it should in the assessments, given the proportion of the population whose livelihoods depend entirely or partially on this sector. This could be attributed to the fact that the livestock-related characteristics were disaggregated during the analysis (such as large herds, access to livestock inputs and water for livestock) to allow for more in-depth insights and additional detail on potential resilience-building interventions in the sector. There is therefore a need to aggregate the livestock-related characteristics so that pastoralism receives sufficient priority for building resilience.

Participants in the feedback sessions expressed caution with regard to the resilience attainment scores, given that they are based on perceptions, which can be arbitrary and heavily influenced by externalities. For example, participants noted, the focus groups might have been influenced by current seasonal conditions (such as whether the session took place in the wet season or the dry season). Consequently, the feedback sessions concluded that even though these scores are useful for understanding community perceptions, they may not be fully objective. Thus they are not useful for purposes of comparison and should be complemented by other quantitative data.

In all the feedback sessions, participants agreed with the accuracy of the characteristics of resilient households in terms of education level and diversified income sources combined with pastoralism/farming and other IGAs.

In all cases, participants emphasized the important role the assessment results would play as a planning support tool, given that they largely represent community views, perspectives and aspirations on resilience-building. In particular, the stakeholders made the following specific recommendations:

- Continue to support pastoralists as a principal livelihood group, increasing the focus on services and interventions for improving livestock production and productivity.
- Develop opportunities to diversify livelihood options, with a next step of mapping out these opportunities and presenting them by relevance to locations.
- Disaggregate and investigate key characteristics more closely, such as education as a critical factor for resilience, and make an effort to determine what has hindered or improved educational development and what areas require greater investment (quality, enrolment levels, etc.).
- Identify 'keystone' indicators of resilience based on the assessment results for continuous monitoring of progress. For example, are there a number of indicators that can be monitored independently as key markers of resilience? These could then be monitored more effectively without introducing the other variables that could dilute or

introduce noise into the analysis. Similarly, it would be useful to compare CoBRA indicators to existing data sets, such as poverty indicators, Household Economy Analysis data, etc.

5. Conclusions and Recommendations

The consolidated results of CoBRA assessments provide some critical insights into the ongoing process of the Hyogo Framework for Action (HFA) core indicator review and the future directions of the disaster risk management in the HoA and beyond. **The assessments elicited local peoples' frank and honest voices and perspectives on what disaster resilient communities should look like and how the disaster resilient community criteria can be achieved.** The findings lead to a number of practical recommendations to inform ongoing DRR discussions both at specific programme/project and broader policy/planning levels and spur innovative and entrepreneurial capacities of disaster/drought-affected communities in the HoA and beyond.

- **CoBRA results stress the need for future DRR strategic frameworks, including HFA2, to promote coordinated and concerted action among various sectors at different scales towards the common disaster resilience building agenda** – including hardware and software, long-term and short-term, and small and large size investments. Some of the perceived priority characteristics – such as **peace and security**, **secondary/tertiary education** and **roads** – are often not systematically integrated into existing DRR frameworks at policy/planning levels and development and humanitarian support at practice level. Ignoring these costly and long-term interventions and instead focusing on less costly investment may lead to false economies. Communities consistently highlighted interventions that enhance access to markets, savings and credit as highly beneficial for enhancing community/household resilience, and these should be prioritized in the short term. Their success, however, may be handicapped if larger scale interventions continually fail to be developed in tandem. Greater support for a coordinated approach will be required to be incorporated into post-2015 DRR agenda to ensure resilience in the long term.

- **The characteristics identified and prioritized by the communities can in turn be used to identify a locally validated list of keystone disaster resilience indicators through which government authorities and other partners monitor progress and impacts of future DRR agenda actions more systematically.** As mentioned earlier, at present, little consensus exists among DRR decision-makers and technical stakeholders regarding the definitions of resilience and the building blocks or indicators to measure resilience. Including communities' definitions of resilience is important not only as a participatory exercise, but also as a means of understanding dynamic and local contextual factors that drive or undermine resilience. Information and data on how resilience characteristics vary between different locations, groups or contexts will directly support the ongoing decentralization and democratization reforms and help local decision-makers carry out customized and tailored resilience priority setting, planning, programming. The priority resilience characteristics and their attainment scores collected through the initial CoBRA assessment would support the

development of more streamlined monitoring frameworks for sub-national, national and broader DRR/climate resilient development planning processes. The keystone indicators may be monitored regularly throughout the HFA2 implementation process through repeat monitoring to see how communities perceive changes in these characteristics in the face of various shocks and stresses.

- **Ongoing and future DRR framework need to guide national/local policy and planning processes to refocus on activities that build and diversify incomes and assets in the disaster affected/prone communities.** The finding on the link between resilience and higher levels of income and assets derived from multiple sources has important implications for governments and donors seeking to understand how to allocate resources to best build resilience. The high ratings universally given to education, water, health and peace and security, etc., for community resilience mean that these factors will drive change that enables households to develop multiple sources of income and make other positive changes. However, when these findings are compared with national/local policy and programmatic portfolios, there is often a mismatch. For example, completing secondary and tertiary education can link people to broader income-generation opportunities, especially off-farm activities such as wage labour. It clearly resonates with the HFA Priority Action 3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels. However, support for expansion of access to education is largely prioritized at primary level in most countries. Ongoing post-2015 DRR framework discussions should shed light on these critical but less visible linkages more systematically so that they will be adequately addressed in future national/local policy and planning processes. DRR objectives would also need to be pursued in tandem and in close coordination with other sustainable development goals and livelihood frameworks at global and regional levels to optimize their complementarity and maximize their impacts on climate resilient development.

- **Future DRR agenda need to put renewed focus on disaster-environment-resilience nexus and increase emphasis on raising awareness of natural resource management, particularly the critical role the local ecosystems can play in the face of shocks and stresses.** The CoBRA assessment demonstrates a key gap in communities' awareness of the importance of natural resources and of maintaining the long-term health of local ecosystems that form the basis for their livelihoods. Local populations often failed to fully capture and appreciate the contribution of ecosystem goods and services to their resilience building, and the importance of natural resource management were largely subdued both in priority resilience characteristics and resilience-building interventions. This was partly due to lack of awareness; given that these resources have always been present, they are taken for granted. Also, there has been limited community ownership of local natural resources across the assessment sites. Lack of awareness of environment-resilience nexus often lead disaster prone communities to engage in activities that may build diverse incomes that are unsustainable, such as charcoal production.

References

Kenya National Bureau of Statistics and Society for International Development. 2013. *Exploring Kenya's Inequality: Pulling Apart of Pooling Together?* Nairobi, Kenya: Ascent Limited.