

## Appendices

1. Summary (frequencies) from semi-structured interviews
2. In-depth analysis of data (p. 12)
3. Patterns/trends in data (p.40)

### 1. Summary (frequencies) from semi-structured interviews

**\*\* Multiple Response Questions (Percentage and totals are based on respondents)**

#### Study Sites

Intervention	Number	Non-Intervention	Number
Turbi	3	Burgabo	3
Funam Qumbi	3	Rawan	4
Toricha	3	Qatamur	3
Huri Hills	3	Sololo Makutano	2
Dambala Fachana	3	Funan Nyata	3
Dadach Lakole	3		
Kargi	2		
Kurkum	3		
Bori Jucntion	3		
<b>Total</b>	<b>26</b>		<b>15</b>

#### Demographic Information

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>Gender</b>				
Male	7	24.1	1	8.3
Female	22	75.9	11	91.7
<b>Age</b>				
20-29	5	17.2	3	25.0
30-39	7	24.1	2	16.7
40-49	8	27.6	5	41.7
50-59	6	20.7	0	0
≥ 60 Years	3	10.3	2	16.7
<b>Size of House Hold</b>				
≤ 3 Members	1	3.4	1	8.3
4-6 Members	12	41.4	6	50.0
7-9 Members	12	41.4	4	33.3
≥ 10 Members	4	13.8	1	8.3
<b>Chronically ill member in House Hold</b>				
Yes	4	13.8	1	8.3
No	25	86.2	11	91.7
<b>Head of House Hold</b>				
Male	23	79.3	8	66.7
Female	6	20.7	4	33.7
<b>Reason for Female as head of HH</b>				
Death of spouse	5	100.0	3	75.0

Other	0	0	1	25.0
<b>Vulnerabilities for Female headed HH</b>				
Tough livelihood	3	60.0	1	33.3
Decision making	1	20.0	0	0
Old age	0	0	1	33.3
Responsibilities	1	20.0	1	33.3
<b>Barriers for access to critical assets for persons &gt; 65 years or have a disability</b>				
None > 65 years	26	89.7	9	81.8
> 65 years	3	10.3	2	18.2

#### **Notes on Demographic Information**

Composition of House Hold with categorization into ≤ 5 Years; 6-18 Years; 19-64 Years; ≥ 65 Years ongoing.

#### **Ownership of Assets**

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>**What assets do you own</b>				
Live stock	20	58.8	8	23.5
Phone	9	26.5	4	11.8
House	1	2.9	0	0
Clothes	0	0	1	2.9
Radio	1	2.9	1	2.9
Solar	0	0	1	2.9
<b>**In your community, who would be considered a poor person/HH</b>				
Few/no livestock	17	42.5	9	22.5
No resources/assets	7	17.5	2	5.0
No wealth/money	3	7.5	3	7.5
Disabled	3	7.5	1	2.5
No children	0	0	1	2.5
<b>**In your community, who would be considered a rich person/HH</b>				
More livestock	23	60.5	12	31.6
Resources/Assets	3	7.9	0	0
Wealth/Money	3	7.9	3	7.9
<b>Who makes the decision to sell assets</b>				
Male	15	55.6	6	54.5
Female	4	14.8	1	9.1
Both	8	29.6	4	36.4
<b>**What gender roles are associated with men?</b>				
Care for livestock	15	37.5	10	25.0
Provide for family	15	37.5	6	15.0
Security	3	7.5	0	0
<b>**What gender roles are associated with women?</b>				
Cooking	18	45.0	7	17.5
Care for children	5	12.5	2	5.0
Fetch water	6	15.0	3	7.5
Domestic	5	12.5	1	2.5
Burn charcoal	3	7.5	1	2.5

Farming	1	2.5	0	0
Fodder	2	5.0	1	2.5
Firewood	5	12.5	3	7.5
Care for livestock	0	0	2	5.0
Care for elderly	1	2.5	0	0
<b>**What gender roles are associated with Boys?</b>				
Care for livestock	25	64.1	11	28.2
Security	1	2.6	0	0
School	5	12.8	4	10.3
Fetch water	0	0	1	2.6
<b>**What gender roles are associated with Girls?</b>				
Cooking	3	7.7	2	5.1
Fetch water	19	48.7	7	17.9
Domestic	6	15.4	3	7.7
Firewood	15	38.5	5	12.8
Care for livestock	1	2.6	0	0
School	4	10.3	2	5.1
Get married	1	2.6	1	2.6
<b>Have these gender roles changed with the current drought?</b>				
Yes	19	70.4	3	30.0
No	8	29.6	7	70.0

#### Participatory Vulnerability Capacity Assessment (PVCA) process

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>Do you know what a PVCA process is and what it entails?</b>				
Yes	3	10.7	1	9.1
No	25	89.3	10	90.9
<b>Participation in PVCA process</b>				
Yes	3	37.5	1	100
No	5	62.5	0	0
<b>If yes, what were your priorities</b>				
No response/Did not participate in PVCA	26	89.7	11	91.7
Environmental Conservation	1	3.4	0	0
Environmental Practices	0	0	1	8.3
Sale of animals	1	3.4	0	0
Selling animals	1	3.4	0	0
<b>Were your priorities covered in the process and community action plans</b>				
Yes	2	50.0	1	100.0
No	2	50.0	0	0

#### Notes on PVCA process:

A response for the question about how they have applied the actions to the current drought in your life was missing for most respondents either because the answer wasn't provided or because they did not participate in the PVCA process. The three responses for this question (2 in the intervention group

and 1 in the non-intervention group) highlighted conservation (1), harvest fodder (1) and livestock stayed longer (1) as ways that they applied the actions to the current drought.

#### Diversification of Livelihoods (Remittances)

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>In this present drought, have you or anyone you know received remittances from family members or relative?</b>				
Yes	3	10.3	0	0
No	26	89.7	12	100.0

#### Diversification of Livelihoods (Migration)

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>When do they migrate?</b>				
Rainy season	9	33.3	5	41.7
Don't migrate	7	25.9	3	25.0
Last year	4	14.8	2	16.7
Start of year	1	3.7	0	0
During drought	6	22.2	2	16.7
<b>Where do they migrate?</b>				
New location	13	43.3	6	20.0
Near location	2	6.7	1	3.3
Search for water	7	23.3	3	10.0
Same location	3	10.0	1	3.3
Better pasture	7	23.3	1	3.3
<b>Who are the main people who migrate in the family or community?</b>				
Boys	15	37.5	5	12.5
Young men	27	67.5	11	27.5
Mature men	13	32.5	2	5.0
Elderly	5	12.5	1	2.5
Women	3	7.5	0	0
Girls	3	7.5	0	0
<b>**Who are the most affected in the community when the crisis hits hard and why?</b>				
Boys	7	17.1	1	2.4
Young men	1	2.4	0	0
Elderly	10	24.4	6	14.6
Women	18	43.9	8	19.5
Girls	5	12.2	0	0
Men	13	31.7	6	14.6
Chronically ill	5	12.2	0	0
The poor	2	4.9	2	0
All	0	0	0	4.9
<b>Other ways those livelihoods are being diversified or adopted</b>				
Casual work	5	20.0	4	33.3
Business	6	24.0	1	8.3

Sell livestock	1	4.0	0	0
Sell firewood	1	4.0	0	0
Small scale farming	1	4.0	2	16.7
None	11	44.0	5	41.7

### Social Safety Nets

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>Are they on Hunger Safety Net Program?</b>				
Yes	15	51.7	5	41.7
No	14	48.3	7	58.3
<b>How often do they get?</b>				
Not on Safety Net Program	14	48.3	8	66.7
Monthly	4	13.8	0	0
After 2 Months	7	24.1	3	25.0
After 3 Months	2	6.9	0	0
After 4 Months	1	3.4	0	0
Annually	1	3.4	0	0
Once	0	0	1	8.3
<b>Who gets it?</b>				
No response	24	82.8	10	83.3
Elderly	1	3.4	1	8.3
Family	1	3.4	0	0
Mother	3	10.3	1	8.3
<b>How much do they get?</b>				
≤ 2999 Shillings	4	26.7	1	20.0
3000 – 3999 Shillings	0	0	2	40.0
4000 – 4999 Shillings	2	13.3	0	0
≥ 5000 Shillings	9	60.0	2	40.0
<b>Are they recipients of any other cash programs?</b>				
Yes	1	3.4	2	16.7
No	28	96.6	10	83.3
<b>Who is providing the money?</b>				
No response/Not on other cash Program	28	96.6	10	83.3
Orphan Vulnerable CLD Program	0	0	1	8.3
PACIDA	1	3.4	0	0
RED CROSS	0	0	1	8.3
<b>How much?</b>				
No Response/Not on other cash Program	28	96.6	10	83.3
3000	1	3.4	1	8.3
4000	0	0	1	8.3
<b>How often?</b>				
No Response/Not on other cash Program	28	96.6	10	83.3
After 2 Months	0	0	1	8.3
After 3 Months	1	3.4	0	0
Dry Season	0	0	1	8.3
<b>Are they part of a savings group or have another source of getting money?</b>				

Yes	11	37.9	2	16.7
No	18	62.1	10	83.3

### Social Safety Nets (School Retention)

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>Have the children dropped out of school?</b>				
Yes	7	24.1	2	16.7
No	22	75.9	10	83.3
<b>**Why have the children dropped out of school?</b>				
Not able to afford fees and food items	6	66.7	2	22.2
Migrated with the animals or parents to another place	2	22.2	0	0

### Purchasing power; Benefits of cash programming, markets, sales

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>Are they able to buy items from the market?</b>				
Yes	19	65.5	12	100
No	10	34.5	0	0
<b>Which is the nearest market to you?</b>				
KARGI	2	6.9	0	0
KORI	1	3.4	0	0
MAIKONA	0	0	3	25.0
MARKOHA	1	3.4	0	0
MARKONA	1	3.4	0	0
MARSABIT	4	13.8	0	0
MEDILE	1	3.4	0	0
MERILE	2	6.9	0	0
MOYALE	10	34.5	3	25.0
ROAD SIDE	1	3.4	0	0
SHIGA	1	3.4	0	0
SHOP	1	3.4	2	16.7
SOLOLO	1	3.4	0	0
TURBI	3	10.3	4	33.3
<b>Distance to the market (KMS)?</b>				
≤ 5 KM	3	13.0	0	9.1
5-10 KM	2	8.7	2	12.1
≥ 10 KM	18	78.8	8	78.8
<b>Are they selling animals in the market?</b>				
Yes	17	58.6	8	66.7
No	12	41.4	4	33.3
<b>**If you are able to buy, which items do you buy most often?</b>				
Sugar	19	46.3	8	65.9
Oil	18	43.9	5	56.1
Maize	24	58.5	11	85.4
Flour	11	26.8	4	36.6

Rice	12	29.3	5	41.5
Beans	23	56.1	11	82.9
None	0	0	1	2.4
Tea leaves	1	2.4	0	2.4
<b>**What else do you use cash for?</b>				
Debt repayment	12	37.5	5	15.6
School fees	19	59.4	7	81.3
Support other relatives	0	0	1	3.1
Medical	1	3.1	0	3.1
Buy commodities	1	3.1	0	3.1
Buy clothes	0	0	1	3.1
Buy fodder	1	3.1	0	3.1
<b>**Are there other ways of getting food items?</b>				
Buy on credit	10	26.3	4	10.5
Borrow food or given food	9	23.7	5	13.2
Food distributions	17	44.7	7	18.4
Exchange animals or items or services, work	2	5.3	2	5.3
<b>Are they finding a difference in prices?</b>				
Higher	27	100.0	12	100.0
Lower	0	0	0	0
The same	0	0	0	0
<b>When do you make the decision to sell animals?</b>				
Pay school fees	1	50.0	0	0
Buy food	1	50.0	0	0
Good price	0	0	1	50.0
Rainy season	0	0	1	50.0
<b>At what time do sell assets to sustain key stock</b>				
Well in advance at good price	28	96.6	11	91.7
At distress point at low price	1	3.4	0	0
Don't sell at all and let die	0	0	1	8.3
<b>Dead Animals</b>				
≤ 10 Animals	3	11.1	1	10.0
11-50 Animals	15	55.6	6	60.0
51-100 Animals	3	11.1	2	20.0
≥ Animals	6	22.2	1	10.0

**Notes on Purchasing power; Benefits of cash programming, markets, sales:**

- Distance to markets was categorized into three as follows ≤ 5 KM, 5-10 KM, ≥ 10 KM with the longest distance to market reported as 180KM by one (1) respondent. Only three respondents provided estimates of Time taken to the market with responses provided being 10, 20 and 30 minutes.
- All the 11 respondents who responded to the question on “how decisions are made to sell animals (individually or communally)” indicated that decisions were made individually. 8 of them were in the intervention group while 3 were in the non-intervention group.

**Food Security & Fodder**

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)

<b>**Who is most affected in the family with this food crisis?</b>				
Men	7	17.9	7	17.9
Women	16	41.0	6	15.4
Pregnant women	15	38.5	4	10.3
Lactating women	9	23.1	2	5.1
Children under 5	7	17.9	2	5.1
Elderly	7	17.9	4	10.3
Disabled	2	5.1	0	0
Poor	1	2.6	0	0
<b>How far do they travel to get water and how long does it take?</b>				
≤ 5 KM	5	37.5	4	57.1
5-10 KM	4	28.6	1	14.3
≥ 10 KM	5	35.7	2	28.6
<b>Are people able to access or purchase fodder, supply and pricing</b>				
No	26	89.7	10	83.3
No Response/Missing Data	3	10.3	2	16.7

#### Notes of food security and Fodder

- The questionnaire generated a total of 5 responses for the question “where are people taking their animals to get pasture”. The Non-Intervention group mentioned Ladise (1), Place with water (1), places with pasture (1) Demo (1) while the two responses from the intervention group included 20 KMS (1) AND 400kms (1).

#### Health

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>**What are the health issues for pregnant and lactating women and children under 5?</b>				
Better health services	7	29.2	3	12.5
Malnutrition	2	8.3	2	8.3
No assistance	2	8.3	2	8.3
Poor	2	8.3	0	0
No health facility	5	20.8	0	0
Low blood	1	4.2	2	8.3
Miscarriage	0	0	1	4.2
Blood pressure	0	0	1	4.2
<b>MUAC for pregnant mothers and children under five</b>				
≤ 13.0	1	10.0	0	0
13.1 – 13.9	1	10.0	1	25.0
≥ 14.0	8	80.0	3	75.0

#### Notes on Health

The following questions are still undergoing synthesis:

- Responses to the question “Was MUAC done for pregnant woman and children under five years” were not categorized separately for Pregnant Women and Children Under 5 years as outlined above.

#### Markets

Variable	Intervention	Non-Intervention
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	Frequency	Percent (%)	Frequency	Percent (%)
<b>Are there price fluctuations of commodities?</b>				
Yes	27	93.1	9	75.0
No	2	6.9	3	25.0
<b>Slaughter rate – has it increased or decreased the prices of meat?</b>				
Increased	24	82.8	9	75.0
Decreased	1	3.4	3	25.0
Constant	4	13.8	0	0

## Social Capital

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>**In this period, how are social networks functioning?</b>				
Networks	10	32.3	2	6.5
Share resources	4	12.9	3	9.7
Community meetings	3	9.7	0	0
Elders	5	16.1	3	9.7
Good	3	9.7	3	9.7
Not good	1	3.2	0	0
Security	1	3.2	0	0
Share water	1	3.2	1	3.2
<b>Information on Drought prediction?</b>				
Yes	0	0.0	1	50.0
No	3	100.0	1	50.0
<b>Did you know there was a drought coming?</b>				
Yes	2	6.9	1	8.3
No	27	93.1	11	91.7
<b>**Where did you get information to make decisions before the drought, during the drought and after the drought?</b>				
Community Leaders	21	72.4	7	24.1
Radio	2	6.9	0	0
<b>**What community institutions exist here?</b>				
School	29	78.4	8	21.6
Health Facility	11	29.7	4	10.8
<b>**Which are the most critical in relation to drought or other stress for decision making?</b>				
Food security	2	5.7	1	2.9
Diseases	13	31.7	6	17.1
No water	3	8.6	2	5.7
Cancer	2	5.7	1	5.7
Conflict	2	5.7	0	2.9
Animals	2	5.7	0	0
Family separation	1	2.9	0	0
None	2	5.7	2	5.7

<b>**How are decisions made concerning migration, negotiation for utility of resources, information sharing and vulnerability?</b>				
Elders	40	97.6	14	34.1
Community leaders	13	31.7	4	9.8
Community meetings	8	19.5	6	14.6
Community committees	3	7.3	0	0
Share information	1	2.4	3	7.3
None	1	2.4	1	2.4
<b>**How has this drought affected you from the previous serious droughts mainly the 2011?</b>				
Severe	27	71.7	11	28.9
Death of livestock	8	21.1	3	7.9
No water	0	0	1	2.6
<b>**Having gone through this experience, what would you do differently in the future?</b>				
Sell livestock	7	36.8	8	42.1
Save money	8	42.1	5	26.3
Reduce animals	0	0	1	5.3
Another system	1	5.3	0	0
Avoid loss	1	5.3	0	0
GOK support	0	0	1	5.3
No plan	1	5.3	0	0

#### Natural Capital

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>**How are natural resources (water, pasture, vegetation cover and trees) managed?</b>				
Water management	4	10.5	2	5.3
Elders	4	10.5	3	7.9
Community initiative	6	15.8	0	0
Environmental management	12	31.6	4	10.5
Care for tress	3	7.9	0	0
Not managed	9	23.7	3	7.9
<b>**How are these regenerated for the sustainability of the environment and livelihood?</b>				
Plant trees	1	12.5	0	0.0
Reduce animals	0	0.0	1	100.0
Set rules	2	25.0	0	0
No regulations	1	12.5	0	0.0
Land is communal	1	12.5	0	0.0
Elders committee	2	25.0	0	0.0
Fall-back area	1	12	0	0.0
<b>**What are the restrictions or regulations in use and management of pasture?</b>				
No regulation	9	25.7	4	11.4

No cutting trees	7	20.0	0	0
Don't care	2	5.7	1	2.9
Misuse of resources	9	25.7	2	5.7
Plant trees	2	5.7	0	0
Overstocking	3	8.6	0	0
Committees	1	2.9	0	0
No education	1	2.9	0	0
Restocking	0	0	1	2.9
Sale of animals	0	0	1	2.9
Severe drought	1	2.9	1	2.9
Don't know	1	2.9	0	0
Don't fear law	1	2.9	1	2.9

### Conflict

Variable	Intervention		Non-Intervention	
	Frequency	Percent (%)	Frequency	Percent (%)
<b>Have there been incidences of conflict in this current drought?</b>				
Yes	23	79.3	12	100
No	6	20.7	0	0
<b>**Where conflict has occurred, how was it managed?</b>				
Community leaders	3	8.3	1	2.8
Elders meetings	7	19.4	1	2.8
Peace meetings	8	22.2	3	8.3
Community initiative	4	11.1	0	0
Conflict resolution	1	2.8	1	2.8
GOK	3	8.3	0	0
None	1	2.8	6	16.7
<b>**How do they anticipate to mitigate the occurrence of conflict in the present situation?</b>				
Peace meetings	19	54.3	5	14.3
Seminars	6	17.1	2	5.7
Education	2	5.7	0	2.9
Community committees	3	8.6	0	0
Law	1	2.9	0	0
Security	1	2.9	0	0
Leaders	2	5.7	3	8.6
None	1	2.9	4	11.4
Don't know	1	2.9	1	2.9

## 2. In-depth analysis of data

Most of the below resilience strategies contribute to more than one capacity, but for the sake of presentation it has been placed in the category where it is the best fit.

Resilience Strategy	Intervention	Non-intervention
	Qualitative observations	Qualitative observations
	Quantitative indicator	Quantitative indicator
	Combined interpretation of quantitative & qualitative data	

## Anticipatory capacity

Resilience Strategy	Intervention	Non-intervention
PVCA/DRR/ action plan	<p><b>Turbi – They were able to destock at an opportune time, save their animals and have cash in hand. With the cash they were able to invest in food, water trucking and fodder. Because of this investment they were able to save the remaining animals. Some even undertook rainwater harvesting. DRR training (score 4) enabled early decision-making; they implemented their action plans and absorbed the adverse effects of the shock. All this contributed to their resilience. Score 4</b></p> <p><b>Funa Qumbi - They preserved grazing land closer to the village (after DRR training) and used it for milking animals and breeding stock. They sell animals – last year July 2016, went up to Marsabit, sold 80% and used money to buy grass and water. This was influenced by the DRR training. They also called into the local radio stations and expressed their situation and got assistance. They lobby Government for assistance needed. Water committees manage water and collect money</b></p> <p>Toricha - DRR training in the community provided important knowledge on proper water management, destocking, range land management. During this drought the community applied destocking but this could be more timely if the EW information were more accurate.</p> <p><b>Dombola Fachana – CMDRR approach was used by CIFA &amp; Concern as a result they set aside ranching areas and zoned</b></p>	Burgabo - Have no fall back plan – no knowledge or information on coping or adapting.

	<p><b><i>them for dry and wet seasons. This did not work because the animals grazed freely and the pasture diminished before the drought. However CIFA also facilitated cross border peace meetings whereby common grazing and water points were agreed. Pastures were paddocked, rules established and fines strictly enforced. Now as a result community and individuals have saved between 35-40% of their livestock &amp; 10% of cows. The reason this has worked is because the fines and the laws are implemented.</i></b></p> <p>On EWS, they informed us that NDMA called a meeting with the sector heads and chiefs on the weather patterns, however the DRR committees were not involved and information did not trickle to the community. Overall scored 4.</p> <p>Dadachi Lakole - they had a DRR training and did alerts whereby they had green, orange and red flags. They had the orange flag but did not do anything, by the time they reached the red flag, the animal body condition was bad and so not sellable. They learnt rangeland management- they fenced it used the hay during the drought. It helped a little because they had not fenced a big place and so got just a little hay. Since they didn't apply this training after much discussion they scored this 1.</p> <p>Bori Junction - CIFA and Concern did DRR training, learnt a lot on environment, cordoned pasture but left goats to graze, did not put knowledge to application (did not change). Scored 1 as it didn't help them. Community also prone to flooding (Ethiopia river floods) with risk to livestock, humans and houses. However have not done much about it. During a flood the community rushed to save children and animals that were affected.</p>	
	<p>Combination of all the quantitative section affirms that there were a few communities that had recall about PVCA and priorities were taken into consideration. But most do not recall participating in such a thing. It is possible that regular people were not involved, only leaders.</p> <p>Turbi's response confirms the quantitative in terms of destocking highlighted.</p>	<p>From the qualitative and quantitative data it is clear that there were no such community processes (even informal) that inspired collective action to respond to the drought.</p>

	Action plan top priority destocking and pasture management as second confirmed by qualitative responses & quantitative data.	
	<p>The low level of recall suggests participation of only selected persons in the PVCA/DRR process, however clear action plans indicate that once the action plans were finalised by the few there was an attempt to bring the entire community on board to implement these.</p> <p>An instance of initial failure and subsequent corrective action in Dombola Fachana indicates a gradual strengthening of local institutional mechanisms during the process. There are few instances of action plans that didn't deliver the desired change, but overall the early decision-making enabled by the process, does point to significantly greater anticipatory capacity within these communities.</p>	
Acting upon EW	<p>Turbi - used both traditional (through studying animal intestines, observations of clouds/rain-markers, behaviour of livestock &amp; birds; info flow through chiefs &amp; institutions like churches/social gatherings) and modern methods (local radio stations) to make decisions. Saw there was no rainfall – they migrated in May after failed April rains, sold animals and got good prices in June/July. The communities found the market useful at the onset of the drought for trade, but later in Oct markets became dysfunctional.</p> <p>Funa Qumbi – Raised awareness of their situation through radio information and got assistance support. Were able to ask county to help them in the emergency. Had traditional info that said there would be rain and radios said no rain, got caught in the predicament – they did not use it to act.</p> <p>Toricha - During this drought the community applied destocking but this could have been more timely if the EW information were more accurate. EWS not considered reliable.</p> <p>Hurri Hills - EWS info was contradictory and people were unsure of what to do.</p> <p>Dombolo Fachana - EWS info is usually reliable but does not give time lines on onset of rain. The meteorological department prediction received is also sometimes unreliable and need to be contextualized for community use and decision making. Use both traditional and scientific EW info. NDMA held a meeting with sector heads on the rainfall</p>	<p>Burgabo - Traditional forecasting was used so were aware of drought and expected there would be no rain. There is a clan known for local forecasting. 8 years ago, one of the foretellers forecasted this drought. In a meeting with one of the traditional foretellers recently he predicted even the remaining livestock will all die. There is another forecast that it may not rain for 4 years. An 80 year old person says it's the worst drought they have seen. However because of the inaccuracies and frequent droughts, the traditional system is slowly losing credibility.</p> <p>Rawana - Had EWS info both traditional and radio said no rain, however did not use this info.</p> <p>Quatamor - EWS traditional predictors said it would be severe drought and advised to destock livestock to avoid loss but communities did nothing with it. Another forecast said it will rain in March 2017, but it didn't.</p> <p>Funanyate – Had early warning information, destocked in good time, at good prices, helped in food security –</p>

	<p>predictions; however DRR committee was not involved and thus info did not trickle down. The community early warning systems include traditional forecasts methods that involve study of animal intestines to determine whether there will be rain or not, study of stars by traditional forecasters who look at specific stars that are associated with prediction of availability of rains or not. The community also depend on local radio for weather forecast information for a few HHs that own radios, community also looks at livestock, birds (migration patterns) and trees (shading and flowering patterns) behaviour to predict rainfall.</p> <p>Kargi - Did not receive any information on rainfall. No rains long rainfall season and short rains in 2016, 2017 rainfall have not received.</p> <p>Dadach Lakole - Early warning information through observing trees behaviour- drying of trees or greening will indicate drought or rainy season. Observing rain clouds in the sky for rains, observing stars that are associated with coming of rains. Last year the long rains failed while the short rains were significantly depressed. There was no accurate early warning information received especially from the formal systems including government while the traditional systems of forecasting predictions were inaccurate.</p> <p>Bori Junction – Radio announcement predicted rain in June, however rain started in March 2017. The traditional system accurately predicted the rainfall.</p>	<p>which later has declined with no food aid.</p> <p>Sololo Junction - EW info was contradictory – traditional forecasting was relied upon, but the rainfall received was less than what was predicted. This drought is more serious than 2011. An elderly man claims this is the worst drought he has experienced since he was born.</p>
	<p>Except for 2 respondents 27 others didn't know there was a drought coming. All make decisions based on information from community leaders with the exception of 2 individuals in the intervention community who base their decisions on information from the radio.</p>	<p>Except for 1 respondent 11 others didn't know there was a drought coming. All make decisions based on information from community leaders.</p>
	<p>Rely on info from community leaders (traditional forecasters) who are not able to give timelines. Scientific EWS info from the govt. did not trickle down because the DRR committees were not involved in the dissemination. Where it is received (through radio) it is perceived to be unreliable, lacking in accuracy, contradictory and not contextualised for community use and decision-making. Cognitively traditional EW is trusted however because of</p>	

	<p>the inaccuracies these are losing credibility. No significant difference between I &amp; NI in terms of use of EW systems.</p>	
<p>Education with the possibility of remittances (also transformation because some proportion of the villages are not taking kids out of school to migrate) (also adaptive – because intergenerational change)</p>	<p>Turbi – <b>Woman (60 yrs) sent her children to school. The kids then were able to get employment in Isiolo. They have sent remittances because of which she has been able to invest in a shop and become more food secure.</b> Many here feel that in an emergency it helps for children to be educated no matter how little the education. The school enrolment is good, girls are going to school and able to help parents in the future and even now, the educated who have jobs are supporting their parents in the drought, so find it useful. The men felt education was good, but there was no employment so the effects could not be felt. They feel this is a way to go in the future. HSNP has been seen to help pay for school fees. Scored 3 because not everyone who has been educated has been able to get employment.</p> <p>Kargi - School (County Government) - In 1969 the first school was started in Kargi by the Catholic Mission of Marsabit. Currently there are 3 primary schools and 1 high school which started last year. The county government school is scored 2 since it is a low performing school. This is because of being understaffed (few teachers) and low food supplies. Large number of dropouts because of lack of school fees; Shortage of food; Follow livestock for long distances and hard for them to return back when school reopens</p> <p>Toricha - The primary school in the community was seen as being important although it is up to class 3; with the current drought more girls have stayed in school while boys withdrawn to go out and graze animals and search for pasture. School dropouts in this period have also been related to the lack of fees in some cases due to loss of livestock to the drought an asset that would be liquidated to pay fees. Not making much difference.</p> <p>Hurri Hills - School, not fully equipped, good for access to education. <b>A man (65 years) sent his child to school who then found employment in Nairobi. With the</b></p>	<p>Burgabo - High dropout rate due to not being able to pay fees &amp; migration. Particularly vulnerable are the children who graze and ones that have migrated, since there is no food at school. There is also water scarcity at the school since the community could not fuel the borehole machine. Scored 1.</p> <p>Rawana - FHI has constructed a water tank, fence, toilet, kitchen, provided uniforms. Has 115 pupils and goes upto Class 8. For secondary school 30 children go to Marsabit and Moyale. 5 children dropped out of school due to lack of school fees last term. Last year got food from the GoK, but none this first term of 2017. Kids fed at school so were less affected by drought. Felt education good, as kids were the future development and this was the way forward. Both men and women scored it at 4.</p> <p>Quatamor - children not going to school and expect a 100% drop out due to a lack of school fees.</p> <p>Funanyate - Primary school in the community most important up to class 6 and was constructed by world vision. This was burnt down during the post poll violence but re-constructed by the county government; it has an estimated 200 pupils and 3 teachers. The school has also been affected by the current drought due to lack of water thus forcing some families to take their children when they migrate in search of pasture. The school receives food from</p>



	<p><b>remittances, he is able to ensure food security for his family and all his other children stay in school.</b></p> <p>Dombola Fachana - High dropout rate (40/140), school performance poor too. Many parents migrated. One of the 5 schools (Manyatta Garbaseb) closed once parents migrated. There has been a school feeding program by the national Government. FH, government have been carrying out water trucking. The school was scored 2 or 3 because of the challenges in the area.</p> <p>Dadochi Lakole - Schools sustained and feel this is good (class 1-7, 4 teachers, 280 pupils), no drop outs, water facility and politicians during campaign supported feeding not government, value education hence score 5.</p> <p>Kargi - Large school drop outs due to no food being provided, or fees or migration.</p> <p>Funa Qumbi - Funded by CIFA, CARITAS, CDF: School in the community was also reported as a key development intervention this is basically a primary school up to class 6 (4 teachers and 300 pupils) During this drought though school retention has been compromised due to migration, lack of permanent water source in the school and the stopping of school feeding programme by the government. The school got water and food from GoK, however the last term – Jan-April the school did not get any. Men scored 2, women 3</p> <p>Bori Junction - The area has no school and they travel to Lakole to school. Drop outs reported for both primary &amp; secondary school due to lack of school fees.</p>	<p>the govt. feeding programme although this is not on a regular basis. They feel ‘School is Life’. They have no classes and is not running well. Scored 1 – they also do not have a nursery school.</p>
	<p>Remittances – only 3/26 have received remittances</p> <p>Dropout – SSI indicates higher dropout rate 7/22.</p>	<p>0/12 have received remittances.</p> <p>Dropout – SSI indicates lower drop-out rate 2/10.</p>
	<p>This disproportionate difference in quantitative data on drop-outs is more likely due to the sampling than a significant difference, especially since the qualitative data tells a different story. Seasonality calendar indicates that children drop-out during the drought. There are a few examples of intervention communities where children have not dropped out, but equally there are examples of intervention communities where they have. The 2 case studies (in intervention not Non-intervention) of investment in education as building resilience in an anticipatory way resulting in</p>	

	remittances is significant. Also significant is the interesting dynamic of more girls staying in school compared to boys because of given gender roles (migration of boys). However, given that even non-intervention communities like Rawana have good education (though no stories of converting this into remittances) it cannot be conclusively stated that there is a significant difference between I & NI.	
Toilets	Kargi – 102 (only those with permanent structures) out of 200 households in Kargi town were assisted by Solidarites to construct toilets. Scored 3 because hygiene is comparatively better, but open defecation still takes place. Funan Qumi – Sanitation was also pointed out as key in preventing spread of diseases. PACIDA/CARITAS, did a CLTS mobilisation and provided the slab and structure for 14 latrines in the village. Ranked 4 by both M and F; had reduced flies and incidence of diarrhoea.	
	Toilets/sanitation was not queried in the SSI	
	Toilets were indicated as a strategy contributing to resilience in 2 intervention and no non-intervention community along with the anecdotal (unsupported by data) claim of better hygiene and lower incidence of disease. Funan Qumbi had 14 latrines in a village of 300 households. The above claims were probably from taking pride in the infrastructure they have. The CLTS if total would've been much higher than 14. This is thus an aspirational adaptive strategy and currently there is insufficient evidence that this was actioned meaningfully.	

## Absorptive Capacity

Resilience Strategy	Intervention	Non-intervention
Reliance on NGOs/agencies Relief (food/NFI) Price fluctuations & food security	Kargi - During a drought, the price of maize and beans fluctuates, but the highest fluctuation is in the price of sugar which most consider an essential commodity for survival. FH - food distribution (till HSNP started), education on FGM, child sponsorship for primary education. In primary school FH provides books and uniforms to many children; and very few children are assisted through secondary school in the form of scholarships (10k shillings). FH has been speaking about cultural norms lie FGM to communicate the ill-effects. Scored 4 because of the scholarships which also cover hospital treatment. Food relief from	Funanyate – When livestock market is good, there is food availability. The price of commodities increases with severity of the drought (Sugar 14/kg, rice 100/kg and beans 100/kg). Food security declines even after rainfall. There is currently on-going food distribution by the government (county and National) but this is still inadequate. Qatamur – Until Sept 2016 they could sell shoats and buy goods since then it has been difficult since 1kg of sugar is 160, maize

	<p>county govt. last received in March 2017. Pacida – do something on food security – 1<sup>st</sup> phase 600 people, 2<sup>nd</sup> phase 400 people. They also give schools – 3 primary and 1 secondary. Pacida food distribution Dec 2016 &amp; March 2017 food distribution, sugar, milk, beans, oil... towards a balanced diet.</p> <p>Kargi – PACIDA - Assisting lactating mothers – porridge, milk; Elderly people – porridge, milk, oil, beans;</p> <p>Pregnant mothers - _____</p> <p>A full carton of milk per household; 13000 shillings for households which have had a death of a livestock.</p> <p>PACIDA came twice in the last year during drought. When they come, what they bring is sufficient and good. Score 3 because they come infrequently (twice a year) compared to FH.</p> <p>Dombolo Fachana - Food security started declining since March 2016 there have been efforts by both county and National governments to provide relief to affected HHs although the community complains that the quality of the relief food is poor and not suitable for children, older persons.</p> <p>Dadach Lakole - The food security situation in the community has also been affected some HHs have received food aid 5 Kgs maize and beans from the county and national government. Food prices have also gone up.</p> <p>Bori Junction – Food purchasing power began depleting in Oct 2016 and people began the hard task of burning charcoal which are sold as an alternate source of livelihood. Price of goods (sugar 130, Maize 50, beans 130, rice 100)</p> <p>Kurkum - Food from county and national government</p> <p>ACK (Anglican Church of Kenya) distributes food</p> <p>Hurri Hills - Concern targeting nutrition and health – has helped vulnerable groups.</p> <p>Turbi – relief &amp; food donations received</p>	<p>100 and beans 100. Some relief food distribution by PACIDA, Caritas and County government (all in March). Government relief usually ends at Maikona and due to lack of access (logistical exclusion) getting access to food, services and goods is difficult compared to major towns. Score 1 as it isn't enough to sustain Sololo Junction – for food supply this community depends on Ethiopia where prices are affected by the drought there. Affordability is low compared to 2 years ago when a similar situation was experienced</p> <p>Rawana - Had food distributions from Government</p> <p>Qatamor – vulnerable community because limited services from NGOs and GOK, isolated, no infrastructure.</p>
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	<p>Bori Junction - Many emergency donations were announced through radio &amp; TV but very little relief food was received in April 2017 (maize 3kg, beans 1kg per HH). Sorghum received through WFP &amp; WV food for work though small amounts and not to all households. The community (~60HH) has had food distribution by WFP (food for asset) arrangement although this has been reduced by half. 20kgs of maize, 2 litres of oil and 20kgs of beans and had been getting it for many years. WVI did food for work in the past.</p> <p>Kurkum - dependence on the government is the most preferred coping strategy because they bring a lorry full of food and everyone shares this making everyone happy. This is as against the HSNP in which only 50 people receive benefit which is not shared.</p>	
	<p>19/29 able to buy items from the market Maize, beans &amp; sugar are items most often purchased from shop</p> <p>Ways of getting food – food distribution 17, buying on credit 10, borrow or given food 9, exchange animals or items or services/work 2</p>	<p>12/12 able to buy items from the market Maize, beans &amp; sugar are items most often purchased from shop</p> <p>Ways of getting food – food distribution 7, borrow or given food 5, buying on credit 4, exchange animals or items or services/work 2</p>
	<p>Food distribution is the predominant food security strategy in both I &amp; NI communities though there are complaints of inadequacies, poor quality and lack of access for remote communities. Food distribution from the government is the most preferred because of the quantity and equal access by all in the community. NGOs and churches also play an important role. Regular food distribution is preferred over occasional. After food distribution, buying on credit and borrowing/receiving food are the other food security strategies in both I &amp; NI communities.</p> <p>The high price fluctuation of food particularly in those communities which are dependent on Ethiopian markets is identified as an issue in both I &amp; NI communities which increases the dependency on food distribution. In select communities NGOs go beyond that to nutritional supplements, child sponsorship as well as touching upon social and health issues like FGM.</p>	
<p>HSNP / safety nets / cash transfer</p> <p>Social protection</p>	<p>Kargi – Out of a total population of 870, 75% receive cash (KSH 5400) every 2 months. However only 1/6 women in the FGD is a beneficiary. Scored 4 because initially a large sum is received and subsequently a regular amount. This allows</p>	<p>Rawana – have beneficiaries of HSNP</p> <p>Funanyate - At least a quarter of the population gets the HSNP – approximately 150HHs. During selection, all of them</p>

	<p>for investment in buying cattle, paying school fees and helping others (share/donate). The elderly – every 2-4 months get KSH 4000/. Kargi also receives cash transfers.</p> <p>Turbi – till Aug food security was good; Sept-Oct food security begins to decline; Nov-Feb food insecurity timed with cash transfer by HSNP</p> <p>Toricha - Have the HSNP program, beneficiaries got KES 5000 every 2 months to be picked from Maikona town. This is seen as far and incurs a transport cost. Cash transfer by Concern.</p> <p>Hurri Hills - HSNP 500HHs helpful and people getting money most vulnerable helped. Received HSNP and food relief, used for iron sheets and food.</p> <p>Dadoche Lakole - HSNP only assists 5 HHs in the community.</p> <p>Bori Junction - HSNP targets 30HHs in the community used for restocking livestock, payment of school fees &amp; HH items. The 2 persons who identified themselves as beneficiaries in the FGD looked poor.</p> <p>Dombolo Fachana - Less than 10HHs benefit from the HSNP and the money is used for restocking, construction of houses like purchase of iron roofing sheets.</p> <p>Bori Junction – 30/130 HH as well as 5 orphans receive benefits. Cash transfer planned for 50 HHs</p> <p>Kurkum - HSNP benefits 50 HHs. Initially they are given a large amount and subsequently KSH 4.5k every 2 months. All in the FGD have for registered but only 2 of the 8 were selected as beneficiaries as per the criteria.</p>	<p>had initially been registered. When the distribution was done, the beneficiaries were sifted and ‘randomly’ 150 HHs were selected. They found that those who are most vulnerable are getting included: 5 elderly and 8 orphans. Each receives KSH 5000 every 2 months, in Moyale through an equity agent. Fare to and fro is KSH 200/-Most HHs under this programme have used the money received to purchase livestock, pay school fees and iron sheets for roofing. Some of the poorer HHs have bought animals and this has helped their livelihoods. Scored 5 because it sustains the people who get it.</p> <p>Cash transfer for 120 Households by Red Cross for 4 months (April-June)</p> <p>Qatamura – 60/124 HH benefit; no cash transfer</p> <p>Sololo Junction – cash transfer by government for elderly and orphans has cushioned them during this dry spell.</p>
	<p>15/29 are on the HSNP 1/29 recipients of other cash programme Cash used for (a) school fees 19 (b) debt repayment 12</p>	<p>4/12 are on the HSNP 2/12 recipients of other cash programme Cash used for (a) school fees 7 (b) debt repayment 5</p>
	<p>The team decides not to use this as comparator because it equally cuts across both intervention and non-intervention communities. There are other safety net programmes apart from HSNP targeted to others which explains why many are not covered under the HSNP. The qualitative data affirms the targeting of the most vulnerable within the HSNP. The qualitative data points to a trend of the HSNP used first to purchase livestock, then school-fees, iron sheets and other household items. Many of the communities ranked the HSNP as the best coping mechanism in this current drought. The large</p>	

	<p>amount of initial capital followed by smaller regular amounts was cited as a reason for favouring this since major investments could be made with the first tranche. The cost incurred in travel to collect this money however is a drawback.</p> <p>While the little qualitative data on cash programming can be considered, we choose not to rely upon the quantitative data that seems skewed probably because of the disincentive to disclose being a beneficiary of cash transfer within a household survey. This study was not able to adequately tease out the effectiveness of cash programming in this context, though the effective use of HSNP and its high ranking would seem to imply the effectiveness of cash in hand to cope with the drought.</p>	
<p>Leveraging social capital / networks e.g. credit</p>	<p>Kargi – There are high levels of social capital in terms of sharing resources within the community and helping those in need. Vulnerable families build a connection with rich families: The rich family gives the poor family a camel as a 10 year (long-term) loan. After 10 years a female camel will be returned to the rich family. After the poor person’s daughter gets married and a gift is received during the wedding (as dowry), the camel can be returned and the loan settled.</p> <p>This is also done within clans &amp; relatives; a camel is given, when the camel gives birth, female calves go back to owner and male ones remain with the person.</p> <p>Many shops operate on credit. During the drought, items can be purchased on credit and during the rainy season when animals are healthy, these animals are sold to fetch a better price and the money is repaid.</p> <p>Kurkum - In a drought situation, elders call a meeting. They would send youth to slaughter 4 camels, then the entire village is full of meat. There are 3 churches in this community which help direct some kind of support to the community during drought. Also, here they tell of the same story as Kargi of loaning a camel to vulnerable families who in turn return the same in time (typically after receiving dowry at the daughter’s wedding).</p>	<p>Burgabo - The community social networks still functional as communities are able to share resources with the most vulnerable households.</p> <p>Rawana – Food price increased later in the year and there were cases of traders closing down due to high levels of credit already given to customers.</p>
	<p>Types of social networks: networks 10, elders 5, share resources 4, community meetings 3, share water 1, security 1</p> <p>How decisions are made concerning migration, negotiating resource sharing,</p>	<p>Types of social networks: share resources 3, elders 3, networks 2, , share water 1, community meetings 0</p> <p>How decisions are made concerning migration,</p>

	etc. – Elder/leader 53, community meetings 8, community committees 3	negotiating resource sharing, etc. – Elders/leaders 18, community meetings 6
	<p>The culture of sharing resources and helping those in need during drought cuts across I &amp; NI communities as evidenced in the detailed norms that were described. The instances of local shops during drought allowing customers to purchase essential items on credit and pay for it later when they are able to sell livestock at better prices – are also across I &amp; NI communities however Rawana’s experience shows there was a limit to which this was possible. For comparability, the team was searching whether by undergoing resilience interventions whether intervention communities were better able to build on and leverage existing social capital for concrete resilience outcomes as compared to non-intervention communities.</p> <p>Regarding how decisions are made concerning migration, negotiating resource sharing, etc. both I &amp; NI communities show a similar trend of relying on elders/leader and using community meetings.</p>	
Water infrastructure/ maintenance (also adaptive & anticipatory)	<p>Kargi – The piped water has been a welcome relief for the women who used to walk 2km to fetch water previously (initially scored a 5). But since it is low pressure (gravity fed), and most villages find it hard to access, it was then scored a 4. People walk for 10kms to look for water to a place called Dhakane where there is a borehole drilled by Caritas. People buy diesel and hired a lorry for private watering of animals.</p> <p>Turbi – There have been several NGO projects around water. PACIDA &amp; PISP. 5 of these tanks are working and 6 dysfunctional. The ones that are working only last a day and women have to walk 7km to fetch water. Water pans are then used for human &amp; livestock for 3 months. In September/Oct water trucking began and assistance came in. Men 2 (short duration), Women 4 (access). Sept-Oct Water trucking starts for both animals and humans privately &amp; NGOs. Nov onwards water trucking increases intensively.</p> <p>Funa Qumbi – (Worst water stress) Had water tanks (PACIDA &amp; CARITAS) underground and when exhausted after 3 months they used this to store water from water trucking June 2016 onwards. They paid for water so able to cope. But paying for water meant less money to buy food and selling livestock to buy water. Managed water well through water committees. Scored 5 because the storage</p>	<p>Burgabo - Permanent source of water – borehole and other communities came to water animals and settle in the area but no pasture. GoK and Chinese companies helped with water pans. Water trucking has been taking place. Their water availability is better than neighbouring community of Anchacha. Scored 3.</p> <p>Rawana - Have permanent water sources sold water, and animals watered and paid all through the drought. They have a strong water user committee to manage the borehole. Though not sure if they are accountable as previous committee had misappropriated funds. Repairs done from Government scored 5</p> <p>Quatamor - The area is a fall-back area for pasture, have water tanks and catch water, payment done by community, entirely rely on water trucking (KSH 25000-30000) as no permanent source have 3 tanks, 1 not working, but does not sustain. Water charged at KSH 20 for 20 litres. Score 3 as tanks from (red cross, county</p>

	<p>facilities enabled them to purchase water and cope with the severe water stress.</p> <p>Toricha – The main water source underground pan dried up in June 2016 this lasts the community for 3-4months when filled up, are currently depending on water trucking. They have many water tanks – underground (ADS MKE) and overhead (ADS &amp; Caritas) which were used to store water brought by water trucks (FH, PACIDA, County &amp; private).</p> <p>Hurri Hills - Water a big challenge – have no water source and rely on trucking – very expensive. Water storage and tanks done by NGO found to be useful - quantity small, and finishes quickly, population also increasing.</p> <p>Dombolo Fachana – High water stress. There is a pan which was deepened by GoK and the water lasted them a long time but ran out for 3 weeks. With the next rains, it has filled up. Have water tanks (ADS) and piped water from a bore hole though broken (panels stolen) and has not worked for the past 4 years. Since January, they have had water trucking from the county government and FH, also to schools and the dispensary. Score 3. Desilting of the water pan done by Government. They found this pan most useful, it was initially excavated by the Ewaso Nyiro Board at Gada Harmo 2 years ago. The pan held water until about 3 weeks ago. Now with the few rains it is full. It has helped them the most and they scored this 5.</p> <p>Dadache Lakole - Have a Chinese constructed water pan which gives them some good water. The community has constant water supply when the pan is filled up mainly gets water from the run-off water from Ethiopia. ADS put in 6 tanks with iron sheets and gutters. 2 of them collect a good amount of water and 4 are used as storage. The water from the tanks is used at occasions and not for daily purposes. They have a borehole about 12kms away. The ladies spend half a day to fetch water. Scored 3.</p>	<p>gov &amp; PACIDA) have helped them, but it doesn't sustain since there are many households and livestock and only 3 tanks.</p> <p>Funanyate - Underground water tank constructed by CIFA, the tank is filled up with rain water although currently silted therefore capacity reduced; want it desilted. This is the reserve water source used only when there is water stress in the community. The community also has 3 water pans that last 4 months. (Funanyate water pan 5km away, Oda borehole 12km away). No water trucking received. Scored 4</p> <p>Sololo Junction - No permanent source of water except water pans. 200 per trip to access water from Sololo town where there is a larger water pan for household use. Until March 2017, there was water in the fall back areas, then dried up. Those who could afford have done water trucking alone (15k per trip). Other livestock have to trek 25km to access water for animals. Dams built in 1952 have kept them going. Despite being silted it is able to last 1 year.</p>
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	<p>Bori Junction - Water tanks storage and catchment provided by ADS MKE &amp; CCS 4 years ago has a capacity of 10,000 litres although this capacity is not completely reached due to inadequate rainfall. They also build an underground tank (5 yrs ago), they use it for 2 months. The water tanks are only used when there is water stress in the community, those that are more vulnerable are given priority in access for the water tanks including pregnant, lactating mothers and older people, the community also has a shallow well excavated by ADS-MKE that is used for two months, there is also a pan that was excavated by the road construction company which has a larger capacity although this carries a lot of dirt and needs treatment before use and this is not available. Dams – have a big one which was built during the colonial era and collects a lot of water, but now capacity diminishing because of siltation, have another dam 10kms away which migrating communities use. Scored 3 because the dam needs desilting, do not sufficiently benefit and the tanks need a larger catchment area. Water pans received water from Ethiopian rivers. No water trucking received since they were not considered as vulnerable as other communities.</p> <p>Kurkum - Solidarites helped with a water tank on top of hill, water piped to village</p>	
	<p>Distance walked to collect water: ≤5km 5; 5-10km 4; ≥10km 5</p>	<p>Distance walked to collect water: ≤5km 4; 5-10km 1; ≥10km 2</p>
	<p>More people in intervention communities walked more than 10km – ...? Except for Funa Qumbi where as a result of the resilience programming &amp; PVCA water committees are able to better manage water resources, both I &amp; NI communities have received similar support from government, NGOs and other stakeholders in terms of storage tanks and water pans. In some cases piped water schemes were provided but there have been significant challenges with that. Water trucking was done of their own initiative as well as through support from others.</p>	
<p>Use of savings/loans (or micro-enterprise) <i>(also anticipatory since the saving)</i></p>	<p>Kargi - Project BOMA fund from USAID A women’s savings group with a rotating fund of around KSH 20k and groups of 3 women start a new enterprise. Along with the rotating fund, phones for</p>	<p>Rawana - Strong women’s saving groups – lend each other and the community’s money; however not collecting and repaying. The women’s saving</p>

<p><i>is done before the drought)</i></p>	<p>communication and a safe box which is kept locked for 3 months is given to the group. Typically, these groups start small shops, they sell sugar or they could even use the money to buy or sell livestock.</p> <p>Kargi - A lady who runs a grocery store in the village. During a drought, the price of maize and beans fluctuates, but the highest fluctuation is in the price of sugar which most consider an essential commodity for survival. Most families cannot afford to pay for groceries during a drought and so she gives out a generous line of credit to everyone for their purchases. They are all able to repay their dues after the drought period finished. There has never been a case of someone defaulting on this payment.</p> <p>Kurkum - BOMA group – loans from revolving fund for women’s business like shops where food is bought and sold. 2 out of the 4 women in the FGD have received BOMA grants. Not every woman in the community is covered at the moment because BOMA is registering one group at a time.</p>	<p>groups save between KSH 20-50, have been registered with MoSS, opened an account and got donations from Ministry of Arid and Semi-Arid Lands 70,000/- . They bought bulls for fattening but these were lost to drought. They contribute towards fees of children, hospital fees etc. They have lent out to members and non-members 150,000 not sure they will get this money back. It supports their livelihoods. The men and youth groups are not so strong but the 4 women groups in the village are going strong because the women support each other. Women scored this 4 because of the support it provides; men scored it 3 because of the structure and ability to access external money.</p>
	<p>11/29 are part of a savings group (pg. 5)</p>	<p>2/12 are part of a savings group.</p>
	<p>A slightly higher proportion of individuals in intervention communities are part of a savings group as compared to non-intervention communities. However, the evaluation team has decided not to use this as a strategy for comparability since these savings groups are not a part of existing resilience programming and is not even a norm among pastoralist communities. Groups in Turbi &amp; Rawana have started enterprises.</p>	
<p>Health services</p>	<p>Turbi – most services are good except for in-patient services which are not there. Children are vaccinated. Score men 2; women 3. Men compare it with better health standards of Bubisa while women felt their health &amp; children’s health have improved. Human health is better than 2011 because of improved infrastructure and health facilities (even though this drought is more severe than previous one).</p> <p>Kargi - Health centre (no dispensary); It has a maternity ward but no drugs. A health centre only in name. Patients are referred to Marsabit. There are 2 nurses, ambulances and Community Health Workers.</p>	<p>Burgabo - Health unit – provides nutritional services &amp; regular clinics during drought which preserves maternal and child nutrition during a drought. The presence of the dispensary has helped management of diseases in this and nearby communities and enabled other agencies to provide nutritional services. 1 nurse (who is often busy in other work or on leave) &amp; enough drugs, but lacking maternity facility. Burgabo has been hit with a dysentery outbreak associated with non-</p>

	<p>Kurkum – there is no dispensary here, just an empty hall. When someone falls ill a car is called from Kargi at a cost of KES 5000. Most of the time it is difficult to find a buyer of an animal at that time to get this money. Lactating and pregnant mothers have to walk the long distance.</p> <p>Toricha - Health facility – not equipped and functional, no medical personnel; they are benefitted by Concern Worldwide outreach services – MCH, immunisations, nutrition treatment &amp; screening.</p> <p>Dombola Fachana - There is a health centre and a newly constructed dispensary (not working). The health centre has 2 nurses and 1 community health worker. The maternity facility is not equipped and no supplies. They go to Sololo for delivery however vaccination is carried out in the health centre. Mothers and children are most affected. Breastfeeding mothers do not have sufficient milk and babies. Health was scored 2 because the health centre does not provide all the services and they have to travel elsewhere.</p> <p>Bori Junction - The community accesses medical facility in Bori town (11km away) although the facility is not fully equipped in terms of drugs and personnel. For serious issues they go to Moyale. Until last month Concern did an outreach clinic which has not stopped. 2 local health facilities do not function. Scored 1. Access to medical treatment has been affected for some HHs due to loss of livestock / asset that's liquidated to access medical facilities.</p>	<p>disposal of carcasses. Particularly vulnerable are the children who graze and ones that have migrated, since there is no food or schools. Score 2</p> <p>Quatamor - Health service not present but benefit from Concern nutrition outreach (every 2 weeks) and this is helpful – malnourished children received plumpy nuts &amp; medication. Score 1 since medication is not provided regularly</p> <p>Funanyate – monthly mobile medical services by Concern – antenatal care and nutrition supplies treating malnutrition and this helped a lot. This is no longer happening. Own health facility not equipped or staffed and they have to go to Odda for treatment. Scored 0.5</p> <p>Rawana - Have a dispensary with one medic, is well equipped with drugs, and good service, very dedicated staff. Does not have power or lab and maternity facility not working. If need an ambulance, get it from Sololo. There is 1 bed, and deliveries conducted by staff. Scored 4.</p>
	<p>Under 5 MUAC: <math>\geq 14</math> is 8; 13.1–13.9 is 1; <math>\leq 13.0</math> is 1 i.e. 1/10 children are at moderate to severe risk</p> <ul style="list-style-type: none"> <li>• <math>\leq 11.5</math> is severe; 11.5-13.5 is moderate; 12.5-13.5 is mild risk; <math>\geq 13.5</math> is no risk of malnutrition</li> </ul>	<p>Under 5 MUAC: <math>\geq 14</math> is 3; 13.1–13.9 is 1; <math>\leq 13.0</math> is 0 i.e. 0/4 children are at moderate to severe risk of malnutrition</p>
	<p>MUAC measure does not establish a definitive difference in nutritional status between I &amp; NI communities</p> <p>Even with health services no significant difference is observed between I &amp; NI communities.</p> <p>Even though the government is still the main provider of primary health services, the facilities are often dysfunctional with high absenteeism and lack of facilities. Concern Worldwide contribution is seen as valuable and a reliable</p>	

	<p>provider of health &amp; nutrition services. The similar MUAC measures among under 5s could be due to Concern's widespread nutritional support. The high cost of travel (up to KSH 5000 to hire a vehicle) combined with the difficulty to liquidate livestock assets during a drought demonstrates the importance of geographic access &amp; remoteness as a factor in accessing health services.</p>

## Adaptive capacity

Resilience Strategy	Intervention	Non-intervention
<p>Livestock market systems</p> <p>Destocking</p> <p>cross-border market / interdependence of livelihood systems</p>	<p>Dombola Fachana - Markets only in Moyale which is too far to travel. There the prices were low even before the body condition deteriorated. They said that they would have sold their animals if they had information. Traditional predictors had said that the rainfall would be low. The information from NDMA was around March this year, which was already too late. They felt the markets did not work due to the following reasons: the market was too far, cross border trade was a challenge-sometimes border closed due to security, other times they were harassed and not allowed through, there were issues around diseases and quarantining of animals. Then down country markets were so far, that if they did not get a good price, they sold at low prices and hardly recovered any costs. So, markets are scored 1. For the emergency, the Government gave them fodder for 2 months, there has been an off-take program for their animals last week but animals are very weak and prices low. Livestock body conditions started declining in June 2016 and by August livestock deaths have been reported and on the rise to date. The community destocked at household level to pay for school fees and also commercially during drought although there were distress sales in the community from Dec 2016 to Feb 2017. Due to the effect of the drought on the livestock body condition the prices were not favourable in most cases.</p>	<p>Sololo Junction - Markets were good until January 2017, then March 2017 onwards animal condition started deteriorating and prices dropped – lost a lot of animals. 60% cattle and 50% shoats died. Fall back area 3 yr cow being bought for 1000; Moyale (main market) is far 5 yr cow 5000, (otherwise 50k). Male goat 5000. Adult camel 20-30k (normally 100k), young camel 15k. Significant drop of market prices in Ethiopia hence the collapse in market. Rawana – later in the year livestock market depleted due to poor body condition after which livestock migrated in search of pasture &amp; water. Finally, livestock began to die and those still alive were trapped at Rawana with scarcity of pasture. Burgabo - The community due to lack of information does not destock at a commercial level only minimal personal destocking to cater for immediate needs. Previously bulls and non-lactating goats didn't die as much during drought, however unusually this year all the animals are dying at a similar rate. Opportunistic traders from Isiolo buying livestock at 200? Which are now doing well as there is pasture in Isiolo.</p>

	<p>Kargi – Body condition of livestock is weaker and it is even hard for some to go and look for water and pasture. The % loss is as follows: 94% - cattle died; 90% shoats died; 45% of camels died; 20% of donkeys died. Livestock sales: No one is selling livestock since it is weak and no one buying either. Currently NDMA slaughter weak animals (off take) at KSH 2000 for about 100 shoats. Despite the above the community ranked selling animals as a coping strategy, 3<sup>rd</sup> behind piped water &amp; HSNP cash.</p> <p>Turbi – FHI set up livestock market (score 3) in 2013 which reduced the market distance. Revenues from this helped maintain the market and helped pay school fees and hospital bills. June-Aug good sales at good price; Sept-Oct prices decline. The market collapsed in April 2016 due to livestock weakening &amp; mass livestock death. There was a failure to timely destock since there was an expectation of rainfall which didn't come. Score 3</p> <p>Dadach Lakole - Livestock body conditions started declining in July 2016 while livestock deaths started to be reported in January 2017. There was destocking in March 2017 although the market started collapsing in Feb 2017.</p> <p>Bori Junction – Livestock market is poor because the main market is in Moyale (Ethiopia) and it has many more middlemen and also involves insecurity compared to markets in Kenya. Traders took advantage of drastic body condition and bought livestock at throw away prices. Livestock disease (sombess) affecting livestock. Possibility of livestock migration from other parts (Ethiopia) causing the spread of this disease. No vaccination available till now.</p> <p>Kurkum There is no market for livestock here. All animals are weak. The distance from the location is far. It is 100kms from Marsabit. Travel to Merile 180km can take 4-5 days by walk where the market is where buyers buy cattle.</p>	<p>Funanyate – Livestock market was good in May 2016 as camels were sold at 80000, shoats 7000, but the market declined in October (camels 50000, shoats 2000). In Feb 2017 livestock death began and is still continuing. So far 70% of the cattle and 40% of the shoats have died.</p> <p>Qatamur – March-Sept 2016 the livestock body condition was good because of a single day's rain. In September 2016 weak and young animals were left at home putting more pressure on water as it was required for both human and animal use. Shoats were mostly affected in Oct 2016, Camels in Nov 2016 and cattle in Jan 2017. In Jan 2017 the livestock market was seriously affected.</p> <p>Livestock death immediately after rains due to pneumonia since there is no shelter for animals– in both I &amp; NI villages.</p>
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	<p>Hurri Hills - Markets non-existent especially for livestock.  Funa Qumbi - Sold animals early and used the money to buy grass and water for animals.  Turbi's action plan <b><i>They were able to destock at an opportune time, save their animals and have cash in hand. With the cash they were able to invest in food, water trucking and fodder. Because of this investment they were able to save the remaining animals</i></b></p> <p>Rain is killing livestock (pneumonia).  Don't know how to protect animals in the rain since we don't have houses (only small temporary shelters).</p>	
	<p>Quantitative comparison pg 10, pg 7 last 3 questions  Selling assets to sustain key stock – in advance at good price 28; at distress point low price - 1  When is decision to sell animals made?  Pay school fees – 1; buy food – 1  Animal mortality: ≤10 animals 3; 11-50 animals 15; 51-100 animals; 3; ≥100 animals 6  Respondents citing nearest market – Moyale 10, Marsabit 4, Merile &amp; Kargi 2  Distance to market - ≥10km 18, 5-10km 2, ≤5km 3  Are you selling animals in the market? 17/29</p>	<p>Selling assets to sustain key stock – in advance at good price 11; don't sell &amp; let die - 1  When is decision to sell animals made? Good price – 1; rainy season – 1  Animal mortality: ≤10 animals 1; 11-50 animals 6; 51-100 animals 2; ≥100 animals 1  Respondents citing nearest market – Turbi 4, Moyale &amp; Maikona 3  Distance to market - ≥10km 18, 5-10km 2, ≤5km 3  Are you selling animals in the market? 8/12</p>
	<p>No major difference is seen in the quantitative indicators above that relate to market, decisions and animal mortality.  Both I &amp; NI communities faced the same challenges of failed rain, decline in pasture, decline in animal health, migration, destocking, reduction of prices in market, distress sale and the eventual collapse of markets. But the seasonality calendars brought out a different timeline for different communities this is not divided along the line of I &amp; NI communities, but mostly on location, access to markets, disease, availability of water &amp; fodder. There are some examples from Intervention communities like Turbi where the PVCA process helped planned advance destocking allowing for investment that eventually saved the remaining livestock. They were also able to sell animals in the market for longer than other communities. The decline in livestock price came 2 months after most others. But on the other hand markets for NI communities like Sololo Junction functioned well till Jan 2017 and only when the Ethiopia prices dropped in January did it lead to worsening animal condition, dropping prices and animal deaths in March.</p>	

	<p>Another NI community (Funanyate) also saw a delayed decline in the market and livestock deaths like Sololo Junction. Hence while searching for a pattern across the communities; the other factors listed above dominate the seasonal trends of the other systems. Those communities that use the Moyale market have a higher vulnerability due to middlemen, challenges of cross-border trade, cross-border disease and price fluctuation depending on Ethiopian markets. According to the Director (Ministry of Livestock, Marsabit) the traditional pastoralist mind-set which is disinclined to destock even during distress is another significant factor. Examples of this were seen in our qualitative data too. He says the newer generation is more open to commercial livestock trading. The plan for a new abattoir in the County with large scale slaughter &amp; marketing is hoped to assist with these challenges. Recent sporadic rains have resulted in several animals dying due to pneumonia because of the absence of animal sheds.</p>	
<p>Migration</p> <p><i>This type of migration seems to be more absorptive than adaptive because this is more as a means of keeping livestock alive than adapting livelihood strategies over time.</i></p>	<p>Turbi – June-Aug migration to lalesa, shirr, away to look for enough pasture. Sept-Oct to Moyale and Bathan rero as it received small rainfall. Nov-Feb camels migrate to Ethiopia and trapped in those areas as their body condition deteriorated.</p> <p>Kargi - Migration of some members of families; some of which are children to Turkana or even to different counties in search of pasture. Children drop out of school when the family migrates. Also, to Mount Kulala, Shegel, Karole, Merthi Migration from June 2016 to look for water and pasture, reason for migration may be conflict. People do migrate with these livestock since it is their livelihood and no other thing to depend on. Place to migrate: Ririma – borehole; Bagasi – Shallow well; Dakhang – Borehole; Kurkum – shallow well</p> <p>Dadachi Lakole - Migration mainly with livestock to pasture rich areas including Bathare, Laki, Ajal, Dirr (Ethiopia). Due to adopting a more sedentary lifestyle women and children left behind; migrated and have had some food by GoK.</p> <p>Kargi - Migration due to fodder and food search.</p> <p>Funan Qumbi – Migration to Laki, Waso, Bathan rero searching for pasture and water and were trapped there due to too much body weakness.</p>	<p>Burgabo – In May/June there was migration from Burgabo however found many other pastures depleted. At the same time there was in-migration (others migrating to Burgabo from Anchacha looking for pasture). ‘Trapped’ as animal health deteriorated and there was no pasture – many died – increased vulnerability. Most affected were women, children and elderly that were not able to migrate. They feel the need to evacuate households that had migrated to other areas because now those places don’t have water.</p> <p>Rawana – livestock migration to Bathan rero and later to Waso and Wajir.</p> <p>Funanyate – Livestock migration began in June to Ethiopia (Laki) and returned back (especially camels) as pasture depleted. Migration also to Shurr.</p> <p>Qatamur – Migration to borders of Isiolo, Rawaye and Huri Hills. Qatamur used to be fall-back areas but currently they are driven to find pasture elsewhere.</p> <p>Sololo Junction – Short intense rains on a single day in Nov filled the dams and there was an influx of migrants. Nov-March 2017 was dry. Late April rains have come. Migration was to Isiolo,</p>

	<p>Toricha – Between March-April food security was stable. In May livestock migration to Lalesa, Shurr and Toricha itself becomes a fall-back area for others. In June food insecurity begins and human life threatened, price of goods increased. In Nov the livestock market collapsed.</p> <p>Jan 2017 livestock destocking and cash transfer by Concern Worldwide.</p> <p>In Feb 2017, little rainfall is received so livestock migration to Huri Hills. In Feb relief food distribution begun by County Government and PACIDA.</p> <p>Dombolo Fachana - Migration is usually planned in terms of wet grazing areas and fall back dry grazing periods. The wet grazing areas (Demo, Amballo, Basir, Bathan Rero). During dry seasons fall back areas closer to the settlements are used to save on trekking distances, currently only livestock migrate while the larger families are more settled in the area in order to access services, schools, health services.</p> <p>Bori Junction – Livestock migrate to Bathan Rero and in-migration from Degodia &amp; North Horr Sub counties and Ethiopia.</p> <p>Kurkum - all husbands of women and all sons of old men migrated. One entire family migrated for 7 months (September to April). Another group of about 20 men migrated to the border of Isiolo county.</p>	<p>livestock still in Isiolo. Albjan, Eldas, Wajir also migration areas.</p>
	<p>When – Rainy season 9, don't migrate 7, during drought 6</p> <p>Where – New location 13, Search for water 7, search for pasture 7</p> <p>Who migrates – young men 27, boys 15, mature men 13, elderly 5, women 3, girls 3</p>	<p>When – Rainy season 5, don't migrate 3, during drought 2</p> <p>Where – new location 6, search for water 3</p> <p>Who migrates – young men 11, boys 5, mature men 2, elderly 1, women 0, girls 0</p>
	<p>No significant difference quantitatively, although it does confirm the observations made in the qualitative section. Like migration of men/boys while women/girls/elderly stay on to continue access to services (school, health, safety nets). Also confirmed are observations that increasingly migration takes place to new locations since water/pasture has depleted from traditional fall-back areas.</p>	



	<p>The seasonality calendars shows common timelines across the communities in terms of early warning, rainfall, food security, migration, livestock body condition and market trends which are all intricately connected with each other. In terms of migration there was stability in food security between March-April 2016 and migration began in May 2016 as food insecurity began from June 2016. Similar to the livestock market systems, the few differences in migration patterns across communities is not divided along the line of I &amp; NI communities but dependent on location, access to markets, disease, availability of water &amp; fodder.</p>	
<p>Pasture regeneration / Stocking in advance</p>	<p>Hurri Hills - Training on environmental conservation and each HH planted trees at their homes for soil erosion, water catchment and prevent logging of indigenous trees.  Bori Junction - Have bad environment but burn a lot of charcoal.  Funa Qumbi - PACIDA in 2015 planted about 2 acres of land with fodder, have not seen the fodder, it did not germinate nor did they harvest it. It was a good idea, but not translated into reality. The men ranked it at 1, the women at 4 in anticipation for the future that they would benefit from it. They purchase fodder and get it from Meru, Laikipia at 400/- a bale.  Dombolo Fachana - The last long rains were depressed and erratic thus did not support pasture regeneration in most areas, pasture levels have also declined due to lack of adequate seeding, over-grazing.</p>	<p>Sololo Junction – complete pasture depletion including fall back areas. Traders brought hay all the way from Meru @ 400-500.</p>
	<p>How are natural resources managed?  Environmental management 12, not managed 9, community initiative 6, elders 4, water management committee 4, care for trees 3  How are natural resources regenerated?  Setting rules 2, elders committee 2  Restrictions/regulations on use of pasture – no regulation 9, misuse of resources 9, no cutting trees 7</p>	<p>How are natural resources managed?  Environmental management 4, not managed 3, community initiative 0, elders 3, water management committee 2, care for trees 0  How are natural resources regenerated?  Reducing animals  Restrictions/regulations on use of pasture – no regulation 4, misuse of resources 2</p>
<p><i>Interpretation of quanti comparison pg. 10 &amp; 11. No big difference</i>  Both I &amp; NI have environmental management mechanisms and they rely on elders, water management committees, etc. For regeneration of these natural resources some intervention committees (Dombolo Fachana) have mechanisms to set and implement rules and impose sanctions in order to ensure regeneration whereas NI communities don't.</p>		

	Traditionally people have had emergency pasture areas (unregulated) but Hurri Hills is an exception of people set aside and people using over a period of time.	
Diversification of livelihood portfolio	Bori Junction – Food purchasing power began depleting in Oct 2016 and people began the hard task of burning charcoal which are sold at meagre prices as an alternate source of livelihood.	Sololo Junction – Capacity to cope with droughts continually being depleted. Continually populations are moving to towns and getting into casual jobs. Women involved in charcoal burning and selling firewood along the highway.
	Livelihood diversification – Business (6), casual labour (5), Sell firewood (1), Sell livestock (1)	Livelihood diversification – Business (1), casual labour (4)
	Entrepreneurial capability of some individuals in the I higher than NI though there hasn't been any programmatic intervention on enterprise. Resilience programming has worked on diversification – ____, poultry, greenhouse in drylands, haymaking in Moyale, charcoal, firewood, etc. Those communities situated along or near the highway are able to diversify into casual labour and highway enterprises. The road has enabled this.	
Diversification of asset base? <i>(more camels less cows – but did this work – since this time many camel deaths).</i>	Qualitative observations	Qualitative observations
	Quantitative comparison	Quantitative comparison
	Interpretation of quanti comparison	

## Transformative capacity

Resilience Strategy	Intervention	Non-intervention
Access to road	<p>Dombola Fachana - Road has helped enhance movement and access. They are able to access services, food items, do business better, move livestock or go interior on motor bikes to see their animals. Scored 4</p> <p>Bori Junction - Road seen as a positive development; helped access services, goods, etc. Prices of commodities has gone down as they get a lot of things from Moyale. Travel has become easier to Moyale. The village has experienced a lot of accidents because there are no speed breakers, donkeys have been killed, one person was killed as well. Scored 5.</p>	<p>Rawana – <b>Roadside</b> community. Improved access and trade but loss of animals and people. The road has led to many deaths (1 person, 30 goats, 3 cows, 7 donkeys, 7 people injured). They felt it caused more harm than benefit. They did not feel it has brought them more development. They scored it 2 due to the many deaths and losses. The conversation focused a lot on the road and that even as they lobbied politicians to ensure that speed-breakers were placed so as to avoid accidents,</p>

	<p>Dadachi Lakole - The road has had a lot of advantages for them, travel time has reduced, improved access to Moyale, Sololo and also Nairobi which can be travelled in 1 day. Are now able to get food items easily including fresh foods. Scored road a 4. The murrum (laterite) feeder roads have also made accessibility to animals and livestock grazing areas much easier.</p>	<p>this did not happen. Even contacting the national government officials, MPs, counsellors, MCAs none of them have acted on making the road safe.</p> <p>Funanyate - Road has improved communication, movement, access to services and food. The main highway passing through the community is key in terms of access to medical facilities in Odda and beyond. The road is good because it has improved communications, Moyale is now easily accessible, transport costs are lower, there are more vehicles. Food and other commodities are easily available. The Chinese contractors made a big pit which was not filled up and animals fall into it. Scored 5.</p>
	<p>Quantitative comparison</p>	<p>Quantitative comparison</p>
	<p>From the entire trip, the most stark observation made by members of the team that had visited previously was the effect the newly constructed road had made on Marsabit. The communities seconded this and highlighted the improved ease in accessing services, food, medical facilities, lower transport costs, to do business better, move livestock and even access interior villages through improved murrum roads. For those communities situation along the road it has also opened up a range of new livelihood opportunities. On the flip side they emphasised the new risks emanating from frequent accidents that have resulted in the death of numerous cattle and even a person.</p>	
<p>Peace committee / negotiation on resource sharing</p>	<p>Turbi - Conflict resolution – The situation has been peaceful. Relations with neighbouring Borana have been cordial. This is because of the cross tribal conversations and in this drought there has been no conflict. Are anxious about the elections. Score 4</p> <p>Funa Qumbi - There was no conflict, shared resources and had cross border conversations. Scored 5</p> <p>Dombolo Fachana – CIFA peace &amp; resource sharing (see DRR section above)</p> <p>Kurkum - the Rendelle try to stay away from the Boranas who attack the Rendelle when they come close to their pasture grounds. One mother &amp; 2 kids got killed. Some cattle were shot dead during a conflict some years ago. The boundaries</p>	<p>Qualitative observations</p> <p>Funanyate – Security has been stable since devolution.</p> <p>Sololo Junction – Conflict is less. There is more awareness on peace are committed to maintain peace. A few attacks from Ethiopia more on theft of moto bikes and looting shops.</p>

	for these are historic – hence we know which pasture grounds to go to that don't cross these tribal boundaries. There is no peace committee in this village. 5 years ago, they fought with the Gabra tribe over pasture. There is a 50% chance that conflict will recur. A peace committee from Marsabit (Governor) carries out rallies. The Diocese, FH and other projects help to deal with conflict by preparing us in advance of conflict.	
	Incidents of violence during current drought – 23/29 How it was managed – Peace meetings (8), elders meeting (7), community initiative (4), community leaders (3), GoK (3) How do you anticipate mitigating occurrence of conflict? – Peace meetings (19), Seminars (6), community committees (3), leaders (2), education (2),	Incidents of violence during current drought 12/12 How it was managed – None (6), peace meetings (3), elders/community leaders (2) How do you anticipate mitigating occurrence of conflict? – Peace meetings (5), None (4),, leaders (3), seminars (2)
	<p>All respondents from NI communities were able to recall incidents of violence during the current drought, whereas in intervention communities 23/29 were able to recall the same. Given difference in numbers there is a higher confidence among I than NI in peace committees. In the Intervention communities there are more avenues and structures in place to engage in peace dialogue. The numbers show a much higher level of engagement with these structures as compared to non-intervention communities. When asked about how risks of conflict will be mitigated in the future, the intervention communities seemed to rely heavily on peace meetings and seminars but also to a less degree on community leaders/mechanisms.</p> <p><b>Conflict: County Commissioner Peace and Cohesion – Matu Matakindi</b>  Conflict over resources - The county government stakeholders (including Governor) held meetings with all communities (gabra, rendille, boranae and Goao) through their representatives during the onset of the drought held in Jaldesa to come up with agreements to sharing of resources this was generally agreed on and there has not been any incidences reported during this drought that are related to resource conflicts.  Election related conflict - The county is also on the lookout during the upcoming elections through working with the Independent Electoral Board of Kenya to take contestants through elections offences laws so that they can convince their supporters to shun violence during the election. There is no clear Borana candidate.</p>	
Institutional structures/ governance  Advocacy / policy engagement	Dombolo Fachana - They are able to get support from the Government because they have a local member of the county assembly (MCA), they are also able to communicate well with their chief.  Hurri Hills - lobby GoK for food and water.	Rawana – weak institutions

	Kurkum - Voice – elected officials don't answer their phone calls. The village chief is only a messenger for the government and doesn't really translate into improved services.	
	Quantitative comparison	Quantitative comparison
	<p>MIONET is a platform where local organisations are able to highlight issues of the drought, share their own assessment and able to lobby the government over such issues. Even though it's currently at a beginning stage, there is an opportunity for this engagement to become transformative.</p> <p>Through IIED led consortium a policy engagement with NDMA at a national level on EW, drought mitigation. A strategy document is in draft stage titled "Ending drought emergencies". NDMA's mandate is to intervene on drought. At county level they lead on EW &amp; data collection.</p> <p>Chief? Public Health Officer?  For many health structures, there is a building but no maintenance - so unsure whether we can see that as transformative?  NDMA – not able to interview NDMA – one community said NDMA did inform them about rainfall, but often info doesn't trickle down. Often communities don't know what NDMA is.  Ministry of Livestock said they passed on information, but communities did nothing about it. Maybe these institutions provide information/ services but there is a disconnect.</p>	
Leadership / empowerment	<p>This was seen in Turbi</p> <p>A bit of Funan Qumi, there was a leader people in the FGD – they seemed very aware, done many things to adapt their livelihoods, make timely choices (like destocking) felt it was empowerment</p> <p>The knowledge was applied across genders. women were equally empowered &amp; able to articulate roadside communities (women are bolder) than remote communities</p>	How did non-intervention communities fare on these counts?
	Quantitative comparison	Quantitative comparison
	Interpretation of quanti comparison	
	<b>GENERAL OBSERVATIONS INTERVENTION</b>	<b>GENERAL OBSERVATIONS NON-INTERVENTION</b>
	<p>Turbi communities felt they are much better than neighbouring centres like Burgabo and Funan Qumbi because of the (a) highway passing through their town and (b) being near to a water source.</p> <p>The 2016/17 drought is more severe than the 2011 one because of the exhausting</p>	<p>Rawana community spoke of how they received no assistance and had often been neglected by others. At the end of the FGD they still continued talking because they said they did not want to be stopped, they rarely</p>

	of pasture by livestock due to the increase in total number of animals.	had an NGO visit and so wanted to speak all that they needed to express At the end they repeated that they wanted NGOs to assist them and wondered why no one came to assist them. They emphasised that we listen to them because they wanted to be heard and even when the FGDs finished they continued talking.
	Kargi ranking 1. Piped water 2. Cash through HSNP 3. Selling animals 4. Migration of some members of families; some of which are children	Funanyate ranking 1. Road and HSNP 2. Water at 4 3. School at 1 4. Dispensary at 0.5
Gender roles	Yes 19, No 8 Most affected by drought – Women 18, men 13, elderly 10, boys 7, girls 5, poor 2 The quantitative data indicates that there is a significant number of respondents who have reported that gender roles have changed in intervention communities whereas in non-intervention villages most have reported that these haven't changed.	Yes 3, No 7 Most affected by drought – Women 8, men 6, elderly 6, poor 2, boys 1
Having gone through this experience what would you do differently in the future?	Save money 8; sell livestock 7	Save money 5; sell livestock 8

### Ministry of Livestock – Livestock director - (Mr. Stephen Riungu)

Ministry's strategies:

- Promoting livestock markets through:
  - Commercial livestock off-take but communities refuse to destock; Seen as an inter-generational issue where the next generation more open to commercial livestock trading; building of an abattoir in the county that will be used for slaughtering of livestock on large scale for marketing
  - Outreach for animal health services – informing communities about the drought and linking traders who offer good price to communities
  - Early prediction
  - Policy on (currently in draft stage)
    - rangeland management – land is mainly managed communally – consulted with a range of stakeholders
      - Pasture regeneration, there are inadequate seed banks in the county in some areas there are efforts to rehabilitating and re-seeding & fodder

production. There are also fodder production initiatives by the ministry in Jaldesa and Hurri Hills.

- Levels of animal stocking – to reduce pressure due to over grazing the county also intends to introduce fees to those pastoralists with excessive number of animals
- animal health, Control and management of animal diseases through improved disease surveillance, improved lab facilities for disease detection, community disease reporting, the Africa development bank is also building a quarantine centre, the world bank also looking at regional project between Kenya and Ethiopia to promote rangeland management, joint vaccination, livestock insurance has also been done at pilot level by the government to ensure reduced losses through a protective approach to loss prevention
- large scale marketing,
  - adding value to livestock products includes diversification within the livestock products like milk processing in the county in Karare.
  - Development of other value chains including goat milk, camel milk, value addition of livestock products like hides and skins, fish production, poultry farming, kales
- strengthening of local institutions and other cross cutting issues.
- Cross-border trade and movement
- Livestock research is not funded and there is a gap in this area, so focus of research is on small livestock – sheep and goats.

#### **Conflict: County Commissioner Peace and Cohesion – Matu Matakindi**

Conflict over resources - The county government stakeholders (including Governor) held meetings with all communities (gabra, rendille, boranae and Goao) through their representatives during the onset of the drought held in Jaldesa to come up with agreements to sharing of resources this was generally agreed on and there has not been any incidences reported during this drought that are related to resource conflicts.

Election related conflict - The county is also on the lookout during the upcoming elections through working with the Independent Electoral Board of Kenya to take contestants through elections offences laws so that they can convince their supporters to shun violence during the election. There is no clear borana candidate

#### **Other factors**

- Access is an overriding factor that comes into play on which the arrival of external agencies and services depends. Those that are easier to access (roadside) have a lot more input from NGOs and government as compared to those that are remote.

### 3. Patterns/trends in data

#### FINDINGS

##### **Anticipatory capacity**

- PVCA/DRR/Action Plans –
  - Participation
  - The communities that followed up on action plans were those where conflict-sensitive PVCAs were carried out
  - gradual strengthening of local institutional mechanisms during the process
  - early decision-making enabled by the PVCA process
  - destocking with pasture and water management
- Acting upon EW –
  - did not trickle down
  - radio
  - traditional forecasters) who are not able to give timelines.
  - unreliable, lacking in accuracy, contradictory and not contextualised
  - doesn't trust either
  - Turbi exception where people migrated before other communities

##### **Absorptive capacity**

- Reliance on NGOs/agencies/relief/food security –
  - Food distribution then buying on credit and borrowing/receiving food as FS strategies
  - inadequacies, poor quality, erratic, targeting only a few and lack of access for remote communities
- HSNP & other safety nets or cash transfer?
  - HSNP as the best coping mechanism
  - purchase livestock, then school-fees, iron sheets and other household items
- Livestock market systems/destocking –
  - larger stocks this time - more strain on resources and more livestock deaths
  - pneumonia
  - Turbi - PVCA process helped plan advance destocking allowing for investment that eventually saved the remaining livestock
  - newer generation is more open to commercial livestock trading
- Migration
  - migration of men/boys while women/girls/elderly stay on to continue access to services (school, health, safety nets).
  - Also confirmed are observations that increasingly migration takes place to new locations since water/pasture has depleted from traditional fall-back areas
  - common timelines across the communities in terms of early warning, rainfall, food security, migration, livestock body condition and market trends which are all intricately connected with each other
  - stability in food security between March-April 2016 and migration began in May 2016 as food insecurity began from June 2016.
- Leveraging social capital/networks for resilience (e.g. credit)
  - relying on elders/leader and using community meetings
- Water infrastructure –
  - intervention communities were selected because they had more water stress
  - PVCA, successfully created water committees to better manage water storage facilities



- Use of saving/loans/micro-enterprise -
- Accessing health services
  - dysfunctional with high absenteeism and lack of facilities
  - Concern reliable provider of health & nutrition services – no malnutrition

### **Adaptive capacity**

- Education leading to remittances –
  - children drop-out during the drought
  - 3 case studies investment in education resulting in remittances
  - more girls staying in school compared to boys
  - Access to schooling along with other services is cited as a significant reason for a shift among pastoralists away from a nomadic to a more sedentary lifestyle
- Toilets/sanitation –
- Pasture regeneration / stocking in advance
  - have environmental management mechanisms and they rely on elders, water management committees
  - Dombolo Fachana) have mechanisms to set and implement rules and impose sanctions
- Diversification of livelihood portfolio
  - highway are able to diversify into casual labour and highway enterprises - selling charcoal or firewood

### **Transformative capacity**

- Road
- Peace committees
  - agreements to sharing of resources
  - Election related conflict
- Governance

## **ANALYSIS**

### **Anticipatory capacity**

- PVCA/DRR/Action Plans –
  - Conflict prone - stronger leadership
  - ownership, community leadership and local institutions
- Acting upon EW –
  - being on the highway
  - more interventions from government/NGOs
  - years when EW linking has been done

### **Absorptive capacity**

- Reliance on NGOs/agencies/relief/food security –
  - difficult to reach community (logistical exclusion) distance from the road
  - which is also a new settlement
  - quantity and equal access by all
  - Regularity
  - high price fluctuation of food
- HSNP & other safety nets or cash transfer?
  - large amount of initial capital investments could be made with the first tranche
  - purchase livestock, then school-fees, iron sheets and other household items
  - cost incurred in travel to collect

- seem to imply the effectiveness of cash in hand to cope with the drought
- Livestock market systems/destocking –
  - location, migration patterns (prices dependent on where animals are), access to markets, disease, availability of water & fodder. Availability of pasture
  - Moyale market have a higher vulnerability due to middlemen, challenges of cross-border trade, cross-border disease and price fluctuation
  - pastoralist mind-set
- Migration
  - availability of water & fodder/pasture and conflict free zone
  - influx of migrants
  - leading to a 'trap'
- Leveraging social capital/networks for resilience (e.g. credit)
  - local shops during drought allowing customers to purchase essential items on credit and pay for them later
  - regularly offered some to those who were in need
- Water infrastructure –
  - gross differences in availability of water and quality of infrastructure assistance provided by external agencies
- Use of saving/loans/micro-enterprise -
- Accessing health services
  - Concern's widespread coverage of nutritional support.
  - high cost of transport (up to KSH 5000 to hire a vehicle) combined with the
  - difficulty to immediately liquidate livestock assets during an illness demonstrates the importance of
  - geographic access & remoteness

#### **Adaptive capacity**

- Education leading to remittances –
  - The government's HSNP safety net programme is an important enabler since it is frequently used to pay for school fees.
  - Broadly speaking education is gradually becoming more important aspirationally for communities as an investment into a future livelihood strategy of employment/remittances.
  - The newly constructed road is enabling access to distant sites for employment
- Toilets/sanitation –
- Pasture regeneration / stocking in advance
  - ability of local institutions to impose sanctions (Dombolo Fachana), geographical factors (upland grazing grounds in Hurri Hills above) or the shifting of historical grazing patterns
- Diversification of livelihood portfolio
  - situated along or near the highway

#### **Transformative capacity**

- Road
  - accessing markets, services, food, medical facilities, lower transport costs, to do business better, move livestock and even access interior villages through improved murram roads
  - new livelihood opportunities
  - risks emanating from frequent accidents
  - Opportunities for programming – market engagement, meat value chain, etc...
- Peace committees

- more avenues and structures in place to engage in peace dialogue. The numbers show a much higher level of engagement with these structures
  - agreements to sharing of resources
- Governance
  - responsibility for development is perceived to rest with NGOs
  - disconnect
  - MIONET is a platform where local organisations