

HORN OF AFRICA **RESILIENCE**
W • O • R • K • S • H • O • P
APPLICATION OF EVIDENCE FOR DECISION MAKING



ETHIOPIA PASTORALIST AREAS RESILIENCE IMPROVEMENT AND MARKET EXPANSION (PRIME) PROJECT IMPACT EVALUATION

Key Findings from the
Endline Survey Resilience Analysis

Overview

- Resilience Conceptual Framework
- The **PRIME** project
- Methodology
- Background: Shock exposure and coping strategies
- Background: Trends in food security and resilience capacities
- Impact of resilience-building interventions
 - Impact of Comprehensive Resilience Programming
 - What worked? Impact of different types of interventions
- Results
- Implications for programming

The PRIME Project (2012 – 2017)

GOAL: REDUCE POVERTY AND HUNGER BY ENHANCING RESILIENCE TO CLIMATE CHANGE THROUGH MARKET LINKAGES

Three Resilience Intermediate Results:

- **IR1** Improve productivity and competitiveness of livestock and livestock products
- **IR2** Enhance pastoralist' adaptation to climate change
- **IR3** Strengthen alternative livelihoods for households transitioning out of pastoralism

Integrative approach: Strengthen multiple systems simultaneously to achieve best results



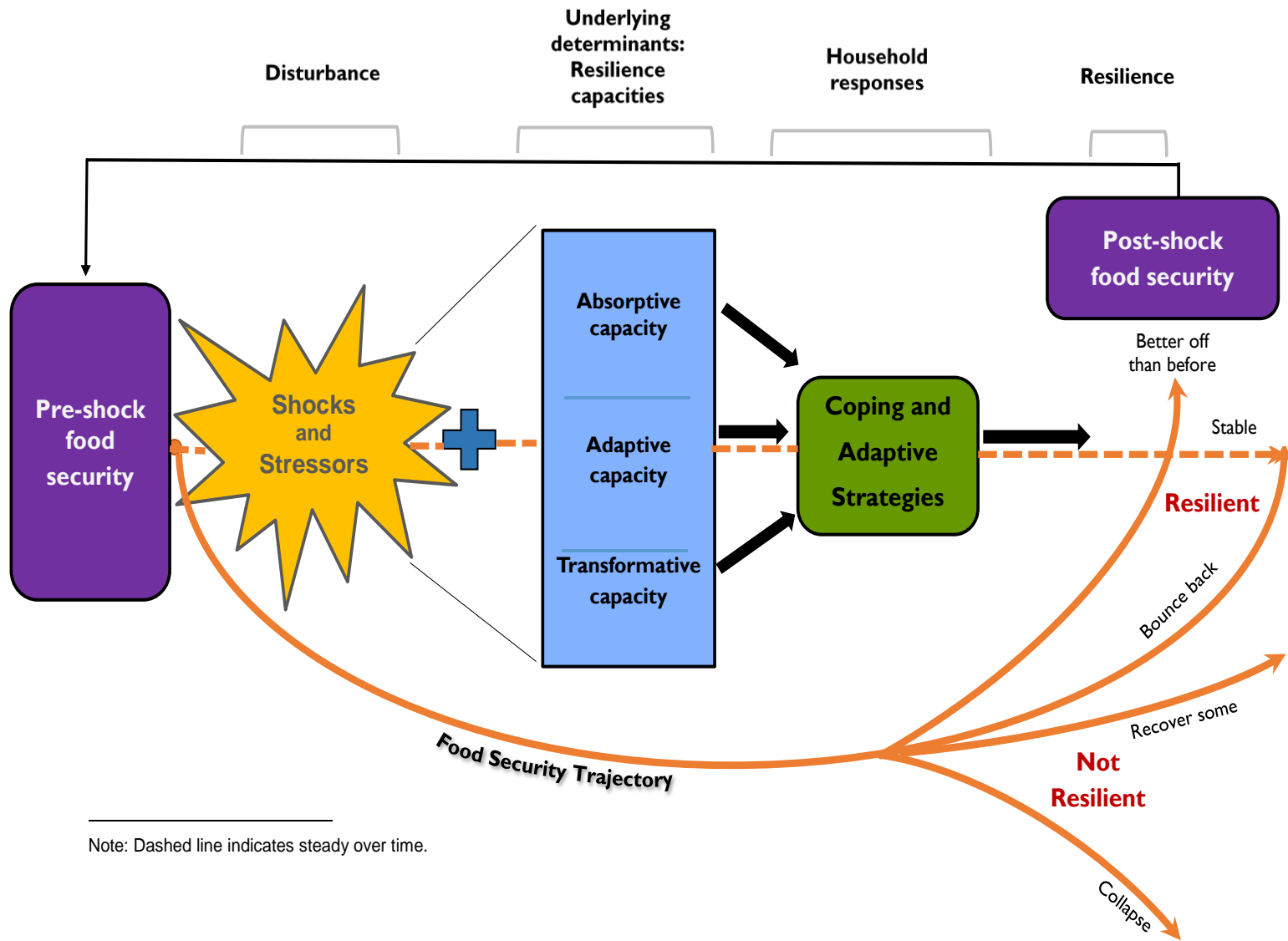
Objective of the PRIME Impact Evaluation

Determine whether the PRIME project's resilience-building interventions strengthened households' **resilience to shocks** and their **resilience capacities**.

Resilience: The ability to “... recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth” (USAID).

Resilience capacities: The enabling conditions for achieving resilience. Three dimensions:

- **Absorptive capacity**
The ability to minimize exposure to shocks and recover quickly if exposed
- **Adaptive capacity**
The ability to make proactive and informed choices about alternative livelihood strategies based on changing conditions
- **Transformative capacity**
State of the wider system in which households are embedded: governance mechanisms, policies/regulations, markets, infrastructure, formal safety nets



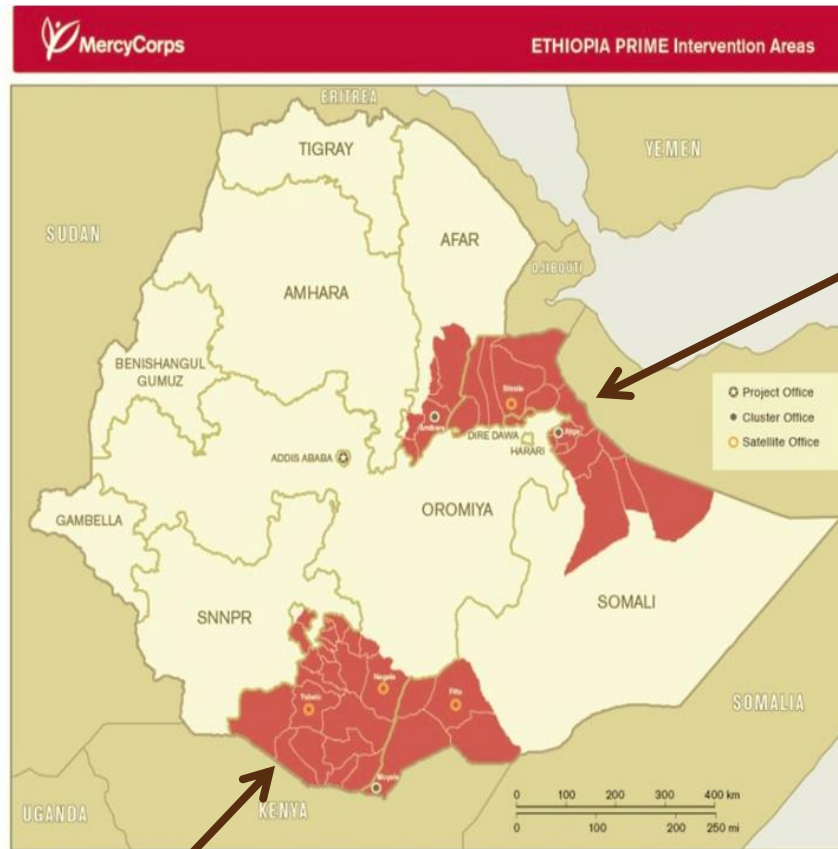
The PRIME Impact Evaluation: Research Questions

1. Did households' engagement in resilience-building interventions increase their resilience to shocks and their resilience capacities?
2. Which specific resilience capacities were strengthened due to households' engagement in the interventions?
3. Which types of interventions enhanced households' resilience and resilience capacities?



Photo: Sean Sheridan / Mercy Corps

The IE Project Areas: Borena and Jijiga



Jijiga

Borena

Methods

Measurement of resilience

Operational definition of resilience

The ability to recover from shocks

Objective measure

Change in food security
over the course of a
shock

Food security indicator:
Inverse of the HFIAS

Subjective measure

Self-reported ability to recover
from individual shocks

Question *“To what extent were
you and your household able to
recover from....?”*

Methods

Measurement of resilience capacities

Indicators of resilience capacity

```
graph TD; A[Indicators of resilience capacity] --> B[Absorptive capacity]; A --> C[Adaptive capacity]; A --> D[Transformative capacity];
```

Absorptive capacity

- Bonding social capital
- Cash savings
- Access to informal safety nets
- Availability of hazard insurance
- Disaster preparation and mitigation
- Conflict mitigation support
- Asset ownership

Adaptive capacity

- Bridging social capital
- Linking social capital
- Aspirations
- Livelihood diversity
- Access to financial resources
- Human capital
- Exposure to information
- Asset ownership

Transformative capacity

- Bridging social capital
- Linking social capital
- Access to markets
- Access to services
- Access to livestock services
- Access to infrastructure
- Access to communal natural resources
- Access to formal safety nets

==> Indexes created for three dimensions using factor analysis

Methods

Impact evaluation method

- **Impact evaluation requires a treatment and a control group**
 - Treatment group (T) receives the intervention, control group (C) does not
 - Control group must represent “counterfactual”: what would have happened to treated households if they didn’t receive interventions
 - However, unless a RCT is conducted, allocation to T and C are not random and impact estimates are subject to selection bias
- **Randomized controlled trial not possible or ethical**
- **Thus, a comparable control group was created using Propensity Score Matching**
 - Treatment group households matched with non-treated households on observable characteristics

Methods

Impact evaluation method

- All impact estimates based on treatment and control groups matched on drought exposure, project area, and the following characteristics at baseline:
 - **Food security**
 - **Resilience capacities**
 - **Socio-demographic characteristics**
 - **Economic status (asset ownership, income)**
 - **Women's decision making power**
 - **Time constraints**
 - **Village characteristics**
 - **Number of government programs**
 - **Number of NGO programs**
- ==> T and C were essentially the same at project start.

Methods

Impact evaluation method

- Panel data allow even more rigorous evaluation: Difference-in difference **PSM** (DID-PSM)
- **PSM** algorithm also matches treatment and control groups on any unmeasured characteristics of households that don't change over time (e.g., some cultural traditions, persistent illness..).
- **DID-PSM impact estimates:** Average Treatment Affect on the Treated or “ATT”

Methods

Measurement of engagement in interventions

- Most interventions implemented at “systems” level
- Households could be “exposed” to them with no direct action taken
- They could also make a decision to take advantage of them (e.g, use a veterinary services, use improved rangeland).
- Thus 2 measures of engagement define treatment groups

Engagement



Exposure to systems-level interventions (e.g., veterinary services, improved rangeland in kebele)

Participation in interventions (e.g., *used* veterinary services, *used* improved rangeland)

Methods

PRIME interventions classified into four groups

(I) Livestock productivity and competitiveness

- Veterinary pharmacies
- Community animal health workers
- Commercial animal feed and fodder seed
- Support of milk processing establishments
- Information dissemination: animal health and feeding, livestock market prices



Methods

PRIME interventions classified into four groups



Photo: Sean Sheridan / Mercy Corps

(2) Pastoral Natural Resource Management

- Community natural resource mapping
- Natural resource management planning
- Improvements in water sources for animals
- Rangeland management
- Grazing land users groups
- Information dissemination: rangeland management

Methods

PRIME interventions classified into four groups

(3) Financial services

- VSLAs
- RuSACCOs
- Mobile banking services (HelloCash)
- Information dissemination: opportunities for borrowing money



Photo: Colin Crowley / Save the Children

Methods

PRIME interventions classified into four groups



Photo: Hannah Maule-ffinc / Save the Children

(4) Climate Change Adaptation

- Disaster planning and response programs
- Disaster planning groups
- Shock planning (e.g., for care of livestock in drought)
- Information dissemination: seasonal rainfall forecasts, pasture conditions, water availability, heat stress

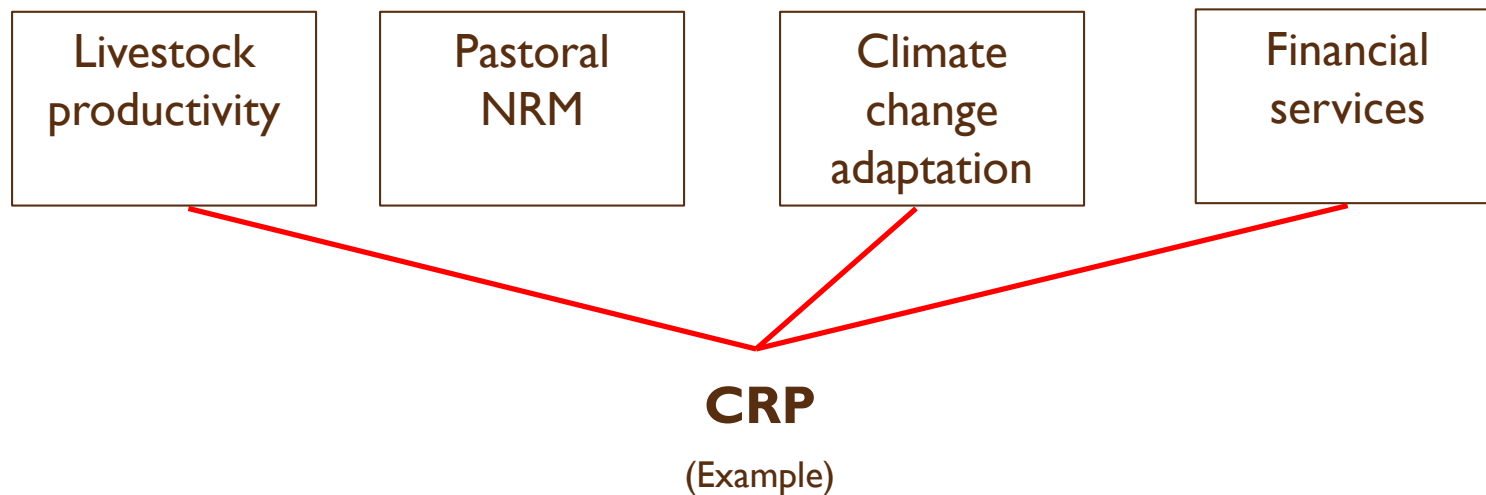
Methods

Measurement of engagement in interventions

Integrative approach →

Comprehensive Resilience Programming (CRP)

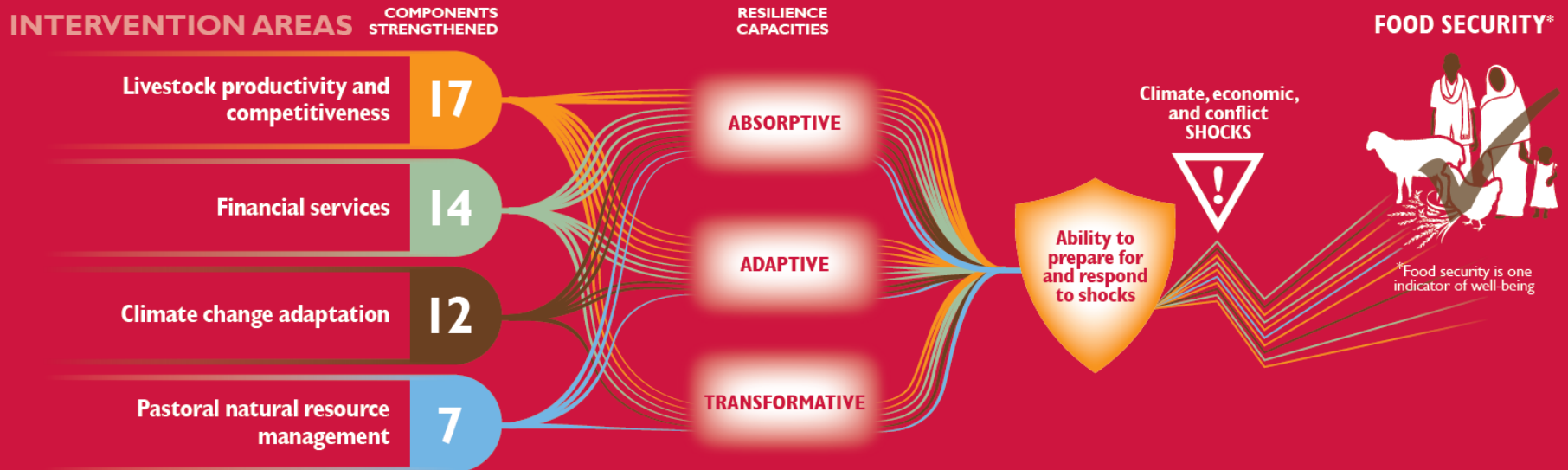
Engagement in at least 3 out of 4 intervention areas



44% of PRIME HHs exposed to CRP

30% directly participated in CRP

IMPACT of Comprehensive Resilience Programming



Methods

Data collection

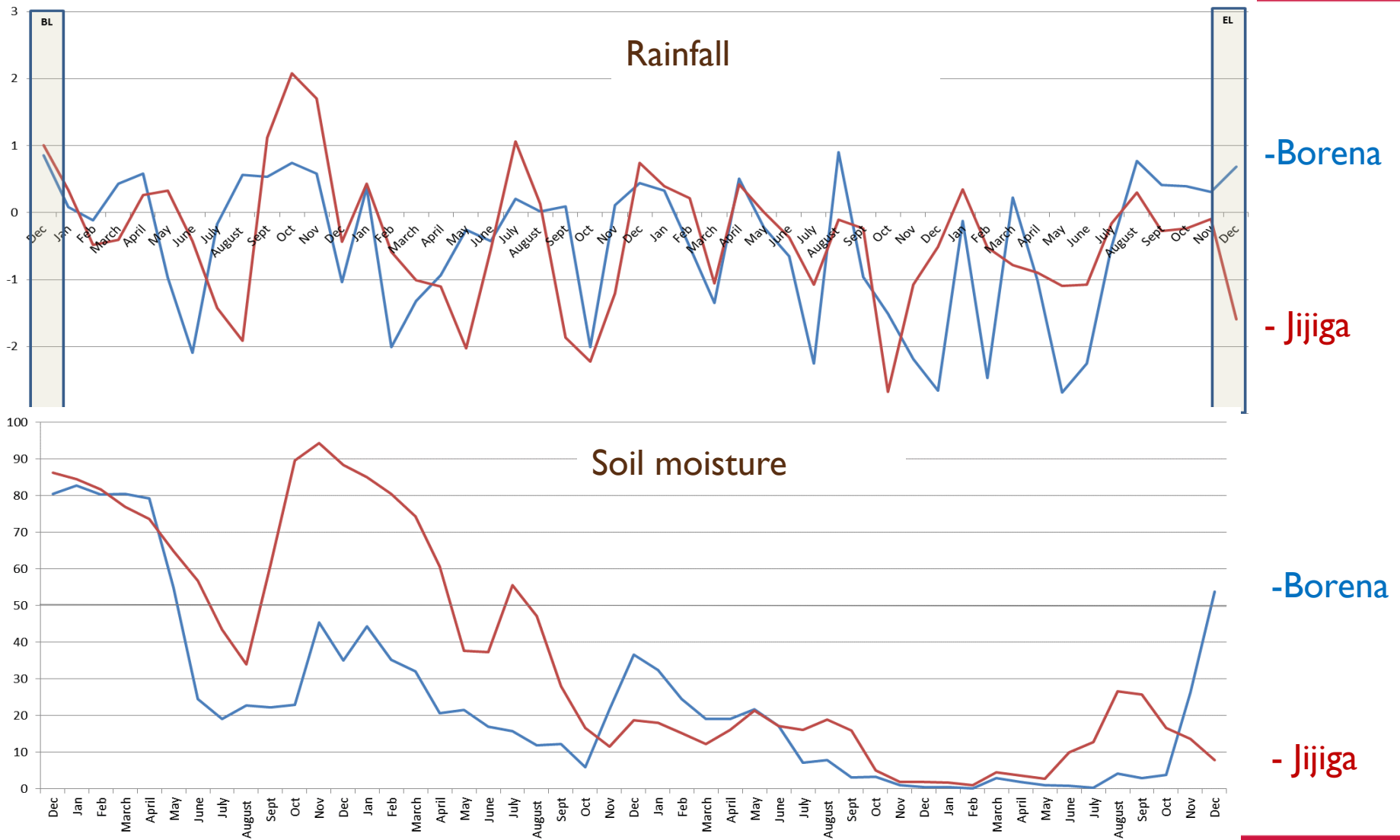
- **Baseline:** December 2013
- **Endline:** December 2017
- **Quantitative data:** Collected from 2,750 households in 73 kebeles
- **Qualitative data:** Male and female FGDs in 10 kebeles, KIIs at kebele, woreda and zone levels
- Qualitative data integrated with quantitative to better understand conditions on the ground, interpret quantitative data, and give voice to local people

Background: Shock Exposure

- Continuous cycle of multiple, back-to-back droughts during **PRIME** project period
- Rainfall deficits highest since 1950
- Extremely dry soil moisture conditions
- Drought was extreme in both project areas, but more severe in Borena than Jijiga



Background: Shock Exposure



“There have been 3 recent droughts.

The first drought exposed us to losing cattle and short-term [hunger].

The last year was more severe. In previous years, when we were sowing [seed] and getting a little rain that enabled us to store residue for the cattle, even if there was no production.

*But **last year we had no rain at all** and nothing for the livestock.”*

– PRIME participant in Borena

Background: Shock Exposure

Downstream Impacts



Photo: Thomas Jepson-Lay / Save the Children

- Livestock disease, emaciation and unplanned deaths
- Crop disease and failures
- Spread of invasive grasses and shrubs
- Unemployment and business failures
- Food price inflation, livestock and crop price deflation
- Conflict shocks: thefts, destruction of homes, violence
- Human illness and malnutrition

Background: Coping Strategies

- **Most common:** reduce food consumption
- **Increased sharing** among households until resources ran thin
- **Sold livestock**
 - Not a viable option at EL because herds were so decimated and no HHs to sell to
- **School drop-outs** (Particularly in areas with no school feeding)



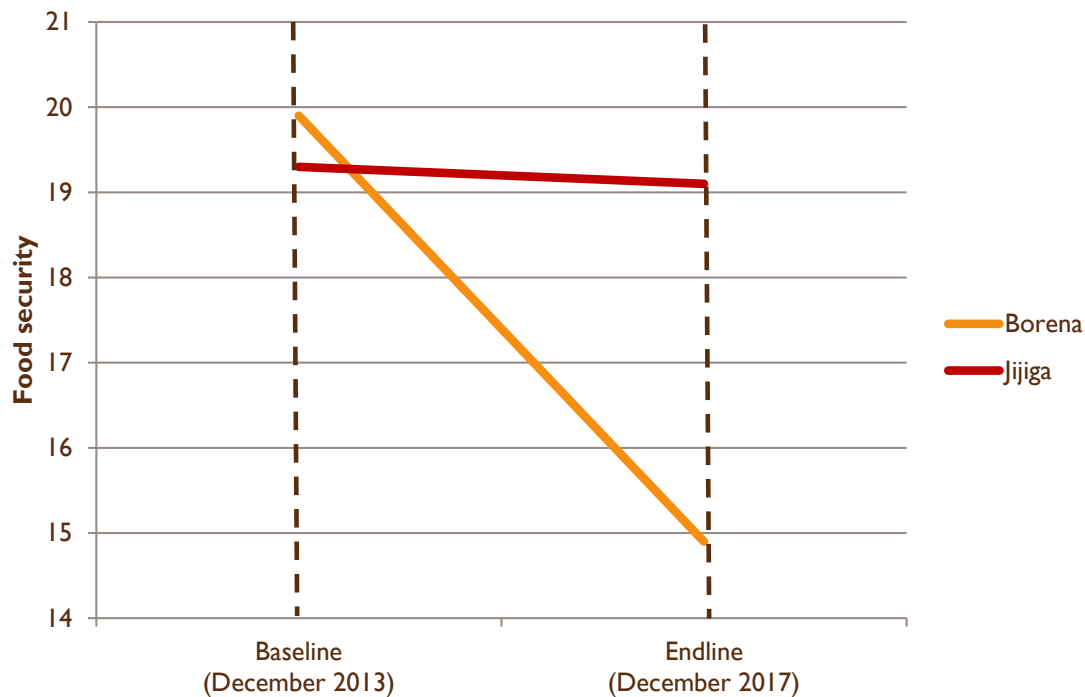
Background: Coping Strategies

- **Migrate to urban centers, cross border**
 - Short-term and temporary
 - In some areas youth migration increased
- **Increase wage labor & petty trade**
- **Humanitarian assistance:** relying on food aid and food/cash-for-work increased dramatically

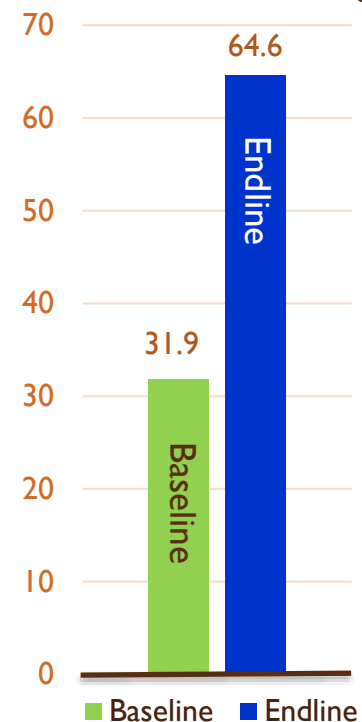


Background: Trends in Food Security

- Food security plummeted in Borena and declined slightly in Jijiga



Severe food insecurity doubled in Borena



Impact Evaluation: Results

Impact of Comprehensive Resilience Programming

- Both exposure to and direct participation in CRP did strengthen HHs' resilience to shocks
- Direct participation had a greater impact than only exposure
 - Households exposed to CRP had an **18 percent lower decline** in their food security than unexposed
 - Participants in CRP had a **40 percent lower decline** than those who did not
- Strong preventative effect on severe food insecurity: Endline prevalence was **56.5%** for households exposed to CRP. It rose to **72.1%** for households not exposed

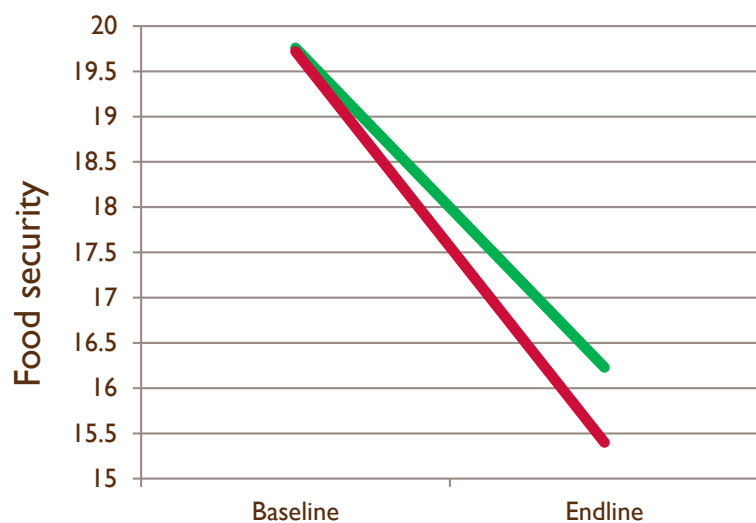
Results

Impact of Comprehensive Resilience Programming

Exposure

ATT: + 1.05

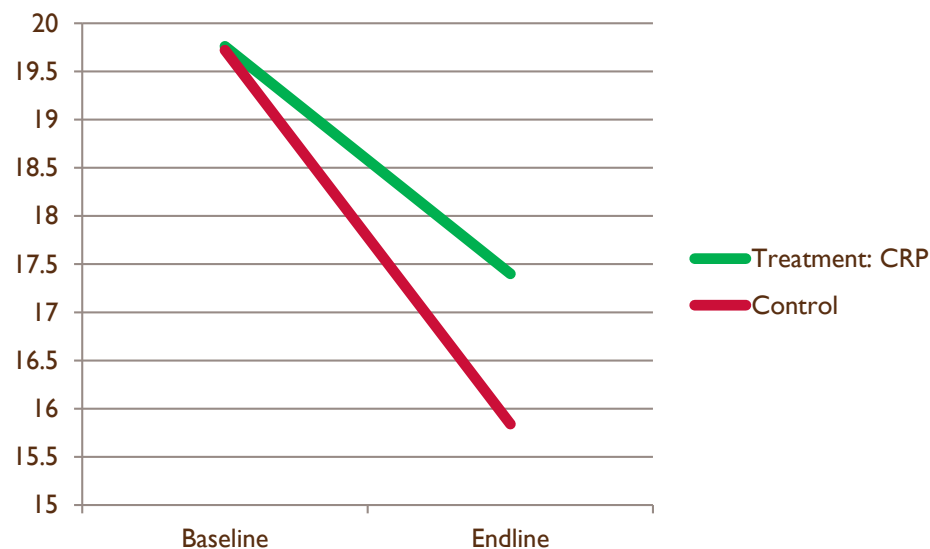
($t=2.20^{**}$)



Participation

ATT: + 1.53

($t=5.69^{***}$)



Food security declined for the treatment and control group. But decline was less for the treatment group ==> positive impact on resilience

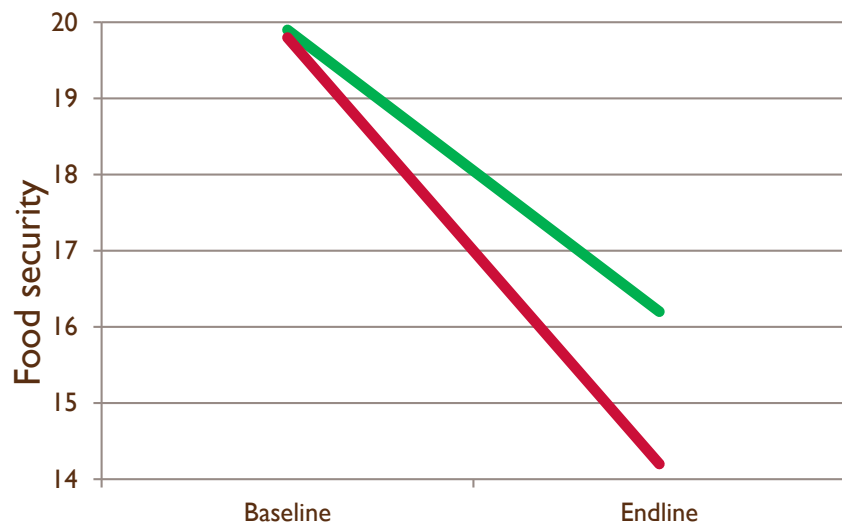
Results

Impact of participation CRP in Borena and Jijiga

Borena

ATT: + 1.86

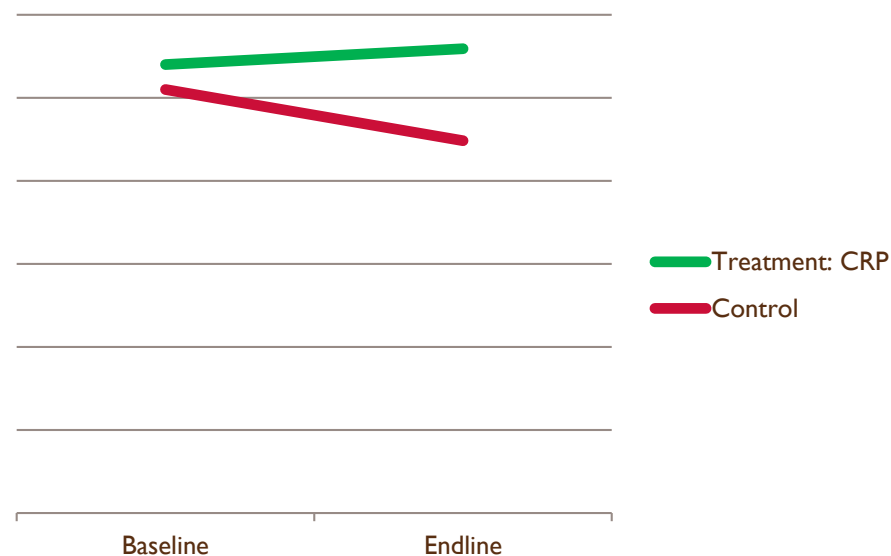
($t=5.87^{***}$)



Jijiga

ATT: + 0.81

($t=1.92^*$)

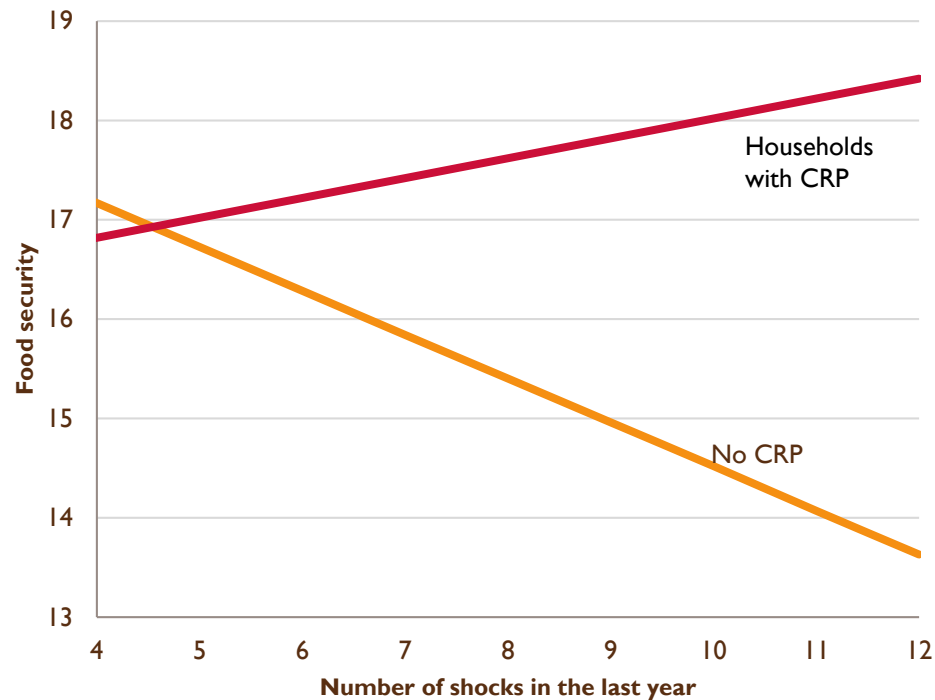


Impact on resilience was stronger in Borena. Treated HHs in Jijiga recovered + gained.

Results

Did CRP reduce the negative impact of shocks? **YES**

- Resilience is the ability to recover from, specifically, **shocks**
 - Growth regression predictions used to trace trajectory of food security as shock exposure increases.
 - **HHs not engaged in CRP**: decline in food security
 - **HHs engaged**: Maintain their food security
- **CRP** reduced the negative impact of shocks (further evidence of positive impact on resilience)



Results

Impact of CRP on resilience capacity

Engagement in **CRP** (both exposure and participation) has increased all three dimensions of resilience capacity:

- Absorptive capacity
 - Adaptive capacity
 - Transformative capacity
- **HHs engaged in CRP:**
increase in resilience capacities
 - **HHs not engaged in CRP:**
decrease in resilience capacities
- ➔ In the absence of engagement in CRP, HHs' resilience capacities would have declined due to the drought.



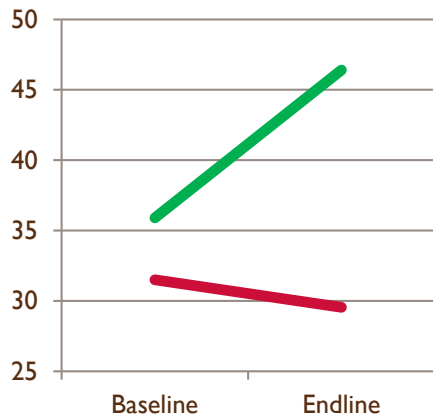
Photo: Sean Sheridan/ Mercy Corps

Results

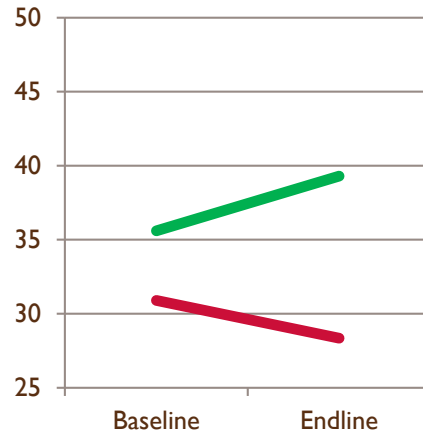
Impact of exposure to CRP

Greatest impact

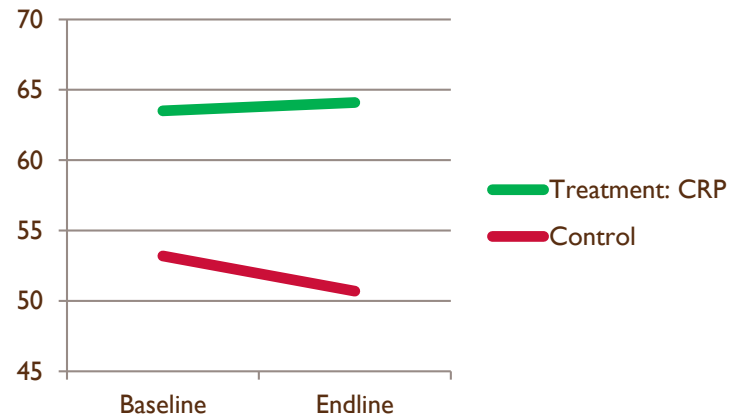
Absorptive capacity



Adaptive capacity



Transformative capacity



Note: Impact on all three dimensions was stronger in Borena.

Results

Impact of CRP on the 20 individual resilience capacities

- Resilience-building interventions have had a broad impact, affecting households' ability to recover from shocks through the majority of the 20 individual resilience capacities
- Identifying these actionable policy levers for enhancing households' ability to recover from shocks is important for enhancing the effectiveness of future resilience-building projects.

Results

Impact of CRP on absorptive capacities

Positive impact on 4 *absorptive capacities*

(Ability to minimize exposure to shocks and recover quickly)

- Access to informal safety nets
- Availability of hazard insurance
- Disaster preparedness and mitigation
- Asset ownership

Results

Impact of CRP on adaptive capacities

Positive impact on 7 *adaptive capacities*

(Ability to make proactive choices about alternative livelihood strategies based on changing conditions)

- Bridging social capital
- Aspirations and confidence to adapt
- Livelihood diversity
- Access to financial resources
- Human capital
- Exposure to information
- Asset ownership

Results

Impact of CRP on transformative capacities

Positive impact on 5 *transformative capacities*

(Aspects of the wider system in which households are embedded)

- Bridging social capital
- Access to markets
- Access to livestock services
- Access to infrastructure
- Access to formal safety nets.

Results

Impact of the intervention sets: Resilience

- **Livestock productivity: Positive**
- **CCA: Positive**
- **Financial services: None**
 - But see very positive impacts on resilience capacities (coming next)
 - Shock recovery benefits may not show up in the short-term
- **PNRM: Mixed**
 - When households were exposed to them but did not directly participate, negative impact on resilience (small minority of households)
 - When directly participated: positive
- **Greatest positive impacts on resilience have come from implementing multiple interventions *simultaneously* (that is, Comprehensive Resilience Programming)**

Results



Impact of intervention sets: resilience capacities

	Absorptive capacity	Adaptive capacity	Transformative capacity
Livestock productivity	+	+	+
PNRM	+		
Financial services	+	+	+
CCA	+	+	+

Results

Impact of intervention sets: resilience capacities

Number of capacities (of 20) with positive impact:

Livestock productivity: **17**

Financial services: **14**

CCA: **12**

PNRM: **7**

Number of capacities (of 20) with negative impact:

Livestock productivity: **0**

Financial services: **1**

CCA: **4**

PNRM: **5**



Photo: Sean Sheridan/ Mercy Corps

RESULTS

Impact of intervention sets: resilience capacities

Ranking on *magnitude* of impact:

1. Financial services (strongest)
2. Livestock productivity
3. CCA
4. PNRM

“Before I got support from [the] PRIME project my land is not suitable for planting anything. But due to the training I received, everything is changed.”

– Gursum kebele, KI

Implications for Programming

- Greater impacts achieved when multiple interventions are combined than when they are implemented separately.
 - ➔ Implement Comprehensive Resilience Programming
- Direct participation in interventions had a greater impact than only indirect exposure.
 - ➔ Projects with “system-level” interventions should proactively plan for household participation
- Important knowledge gained: livestock productivity, financial services, and CCA interventions had the strongest impact.
 - ➔ Leverage greatest impact by determining which interventions bolster resilience and resilience capacities the most and focusing on them.

Implications for Programming

- Positive impact on resilience itself brought about by strengthening a wide range of capacities (not just the traditional ones, like assets):
 - Social capital
 - Aspirations
 - Economic sources of capacity: asset ownership, access to financial services, livelihood diversity
 - Human capital and exposure to information
 - Disaster risk reduction: DPM, hazard insurance
 - Access to safety nets
 - Access to services and infrastructure
 - Access to **markets** (PRIME)
- **Shocks not going away:** Continue to build a wide range of capacities, beyond economic ones, to protect households' well-being and development investments.

Implications for Programming

- CCA and PNRM interventions had negative impacts on some resilience capacities, hindering progress
 - ➔ Avoid negative impacts through understanding why they occur and shifting programming (see related implication below...)
- Food security and resilience capacities deteriorated sharply in Borena, but not Jijiga, partly because of greater shock exposure and lower cash assistance in Borena
- But likely also due to intervention allocation decisions: lower concentration of high-impact livestock productivity interventions and higher concentration of low-impact PNRM interventions in Borena
- Data collected in the Recurrent Monitoring Surveys on food security conditions, and earlier information on where interventions are allocated and which have the greatest impact could have prevented this situation
 - ➔ Conduct interim monitoring and evaluation to inform adaptive management: importance in shock contexts of real-time information on food security, where interventions are concentrated, and which are making a difference

Thank You

