

# Livelihoods at the Limit

## A Fresh Look at the Evidence

What HEA data from 316 livelihood zones in 26 countries can tell us about food security & disaster risks

# Overview

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- What is Household Economy Analysis – a very brief review & where the data that informs these papers comes from
  - Food Security paper three questions with policy implications
  - DRR/CCA paper three questions with preliminary conclusions
  - Areas of potential further research
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# What is Household Economy Analysis?

## Step 1. Livelihood Zoning

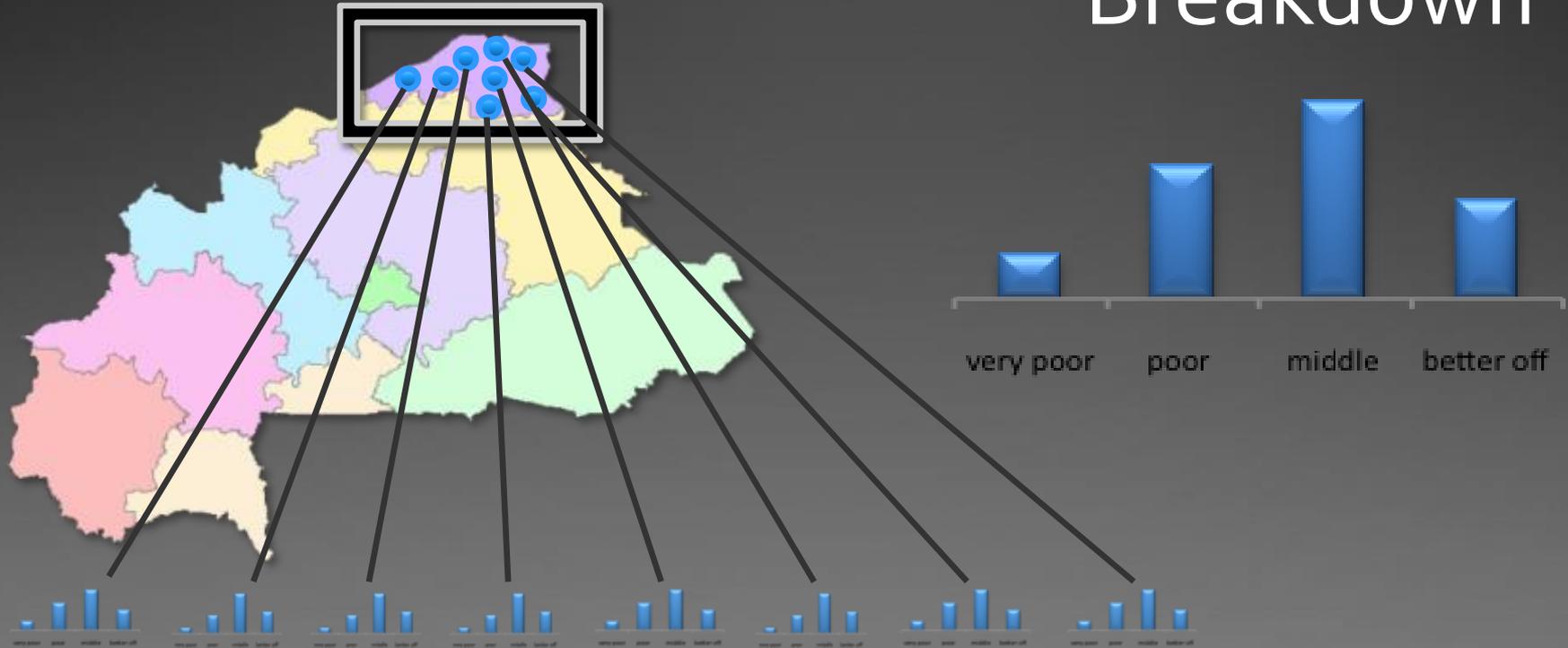


*Areas within which people share broadly the same pattern of livelihood – the same production base, and the same market system.*

# What is Household Economy Analysis?

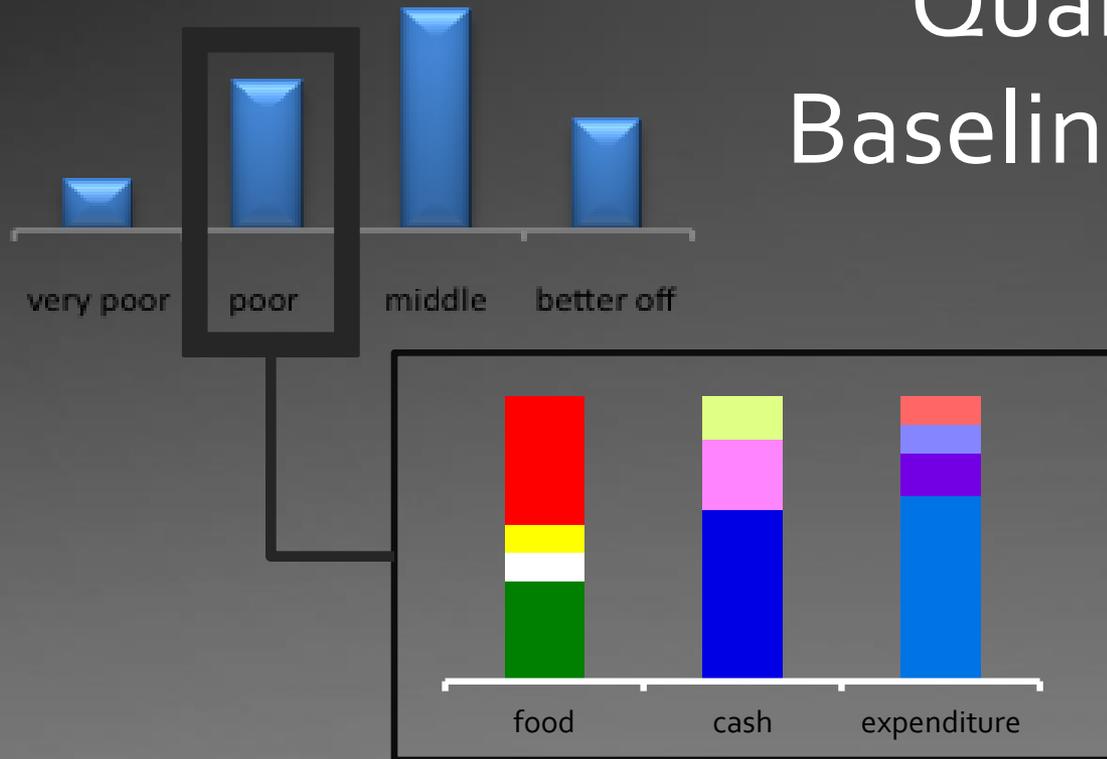
At least 8 villages or sites in one livelihood zone are chosen for in-depth field work

## Step 2. Wealth Breakdown



# What is Household Economy Analysis?

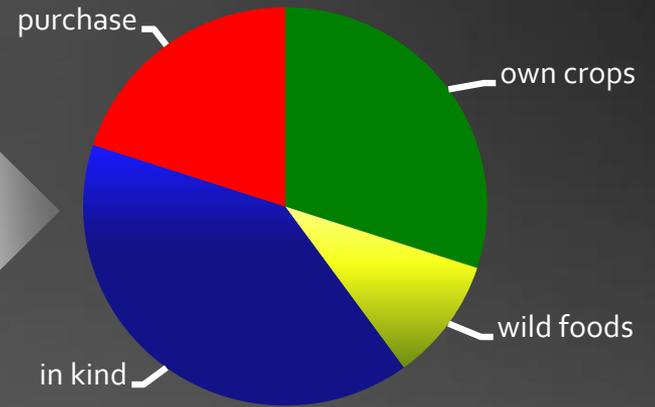
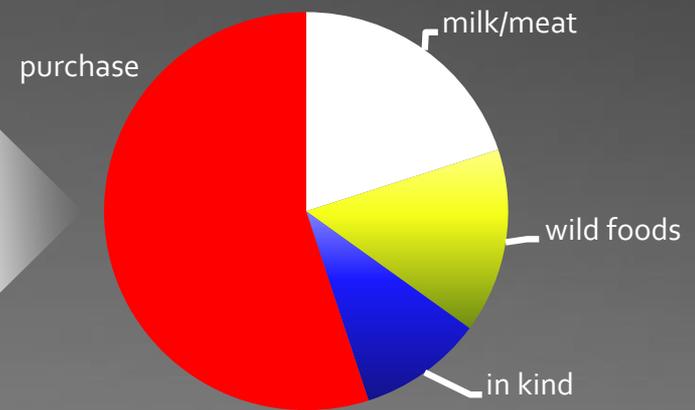
For each wealth group, sources of food and cash income and expenditure patterns are quantified



Step 3.  
Quantification of  
Baseline Livelihood  
Strategies

x 32

# What is Household Economy Analysis?

A grid of several data tables, likely representing household economy analysis data. The tables contain columns of text and numbers, organized into sections.A grid of several data tables, likely representing household economy analysis data. The tables contain columns of text and numbers, organized into sections.

# What is Household Economy Analysis?

These first three steps comprise a **HEA Baseline**

The next three steps are part of **Outcome Analysis**

## BASELINE

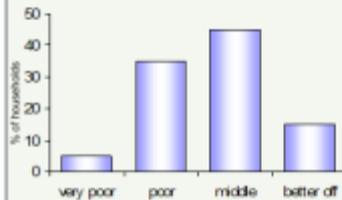
Step 1

Livelihood Zoning



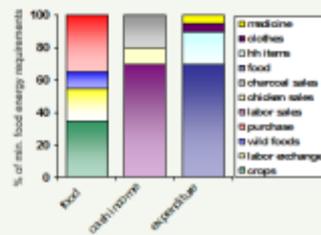
Step 2

Wealth Breakdown



Step 3

Livelihood Strategies



## OUTCOME ANALYSIS

Step 4

Problem Specification

Crop loss of 75%  
 Local labor rates down 50%  
 Food prices doubled  
 Chicken prices down 50%  
 Migratory labor increased 50%

Step 5

Analysis of Coping Capacity

Draw down on surplus/stocks  
 Expand production (wild foods/fish)  
 Expand income  
 Switch expenditure

Step 6

Projected Outcome

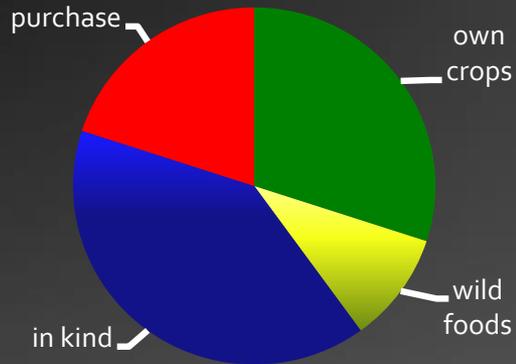


# What is Household Economy Analysis?

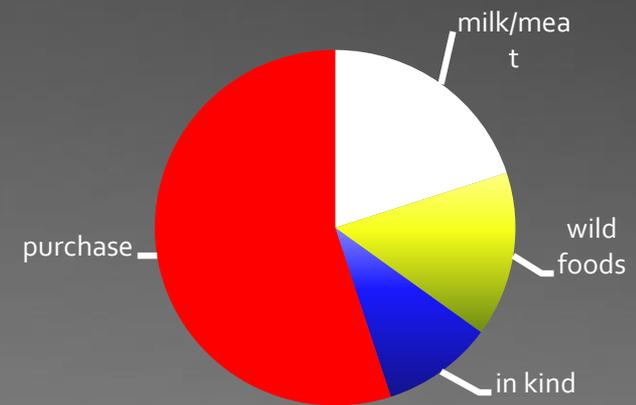
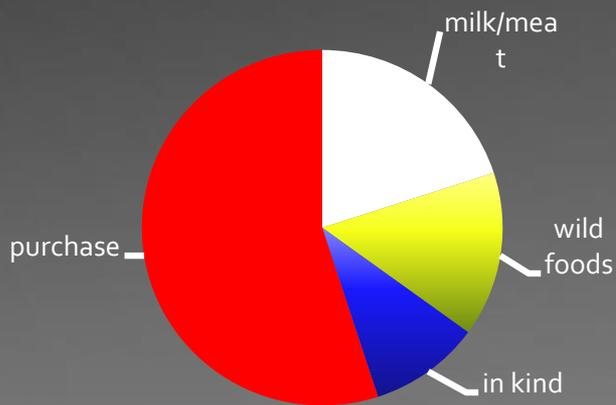
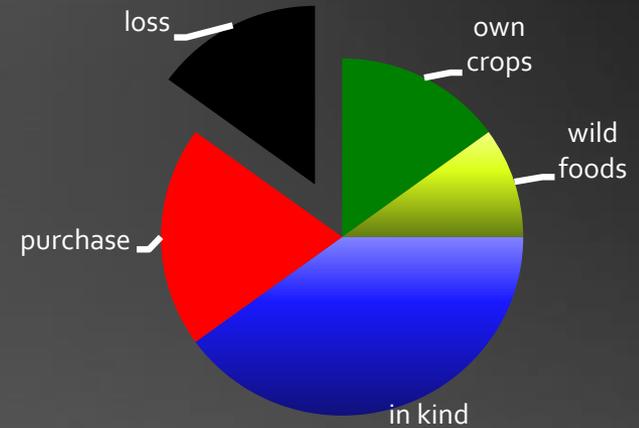
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**Outcome Analysis** is a mathematical process that allows us to see how a population's access to food and cash income is affected by a change, such as drought, market closure, or even a development intervention.

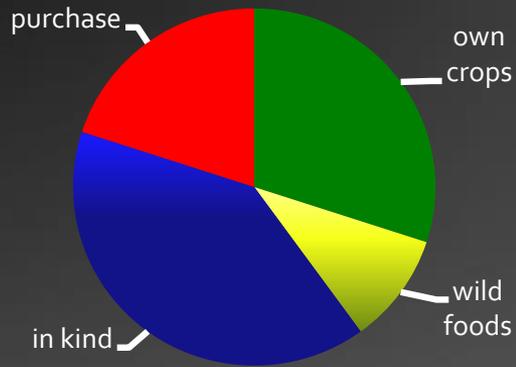
# What is Household Economy Analysis?



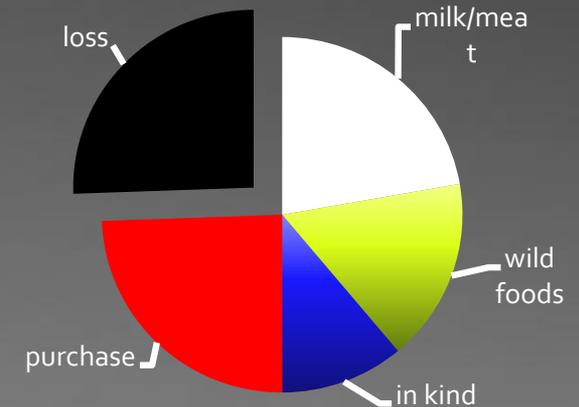
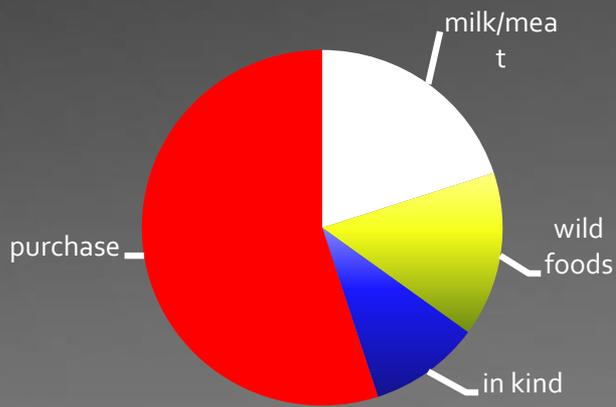
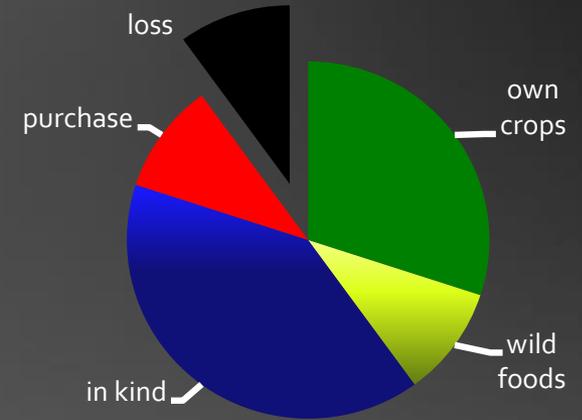
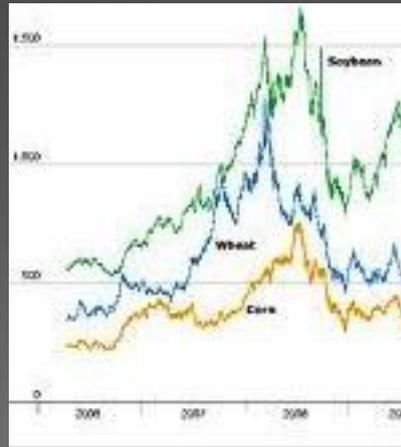
50% of  
baseline crops



# What is Household Economy Analysis?



200% of normal staple prices



# Where does the data for these papers come from?

## Distribution of livelihood zones with full baseline coverage

Other: 6

Sahel & West  
Africa: 40

Southern  
Africa: 60

East  
Africa/GHA:  
204

Asia: 6



## Number of livelihood zones in each category

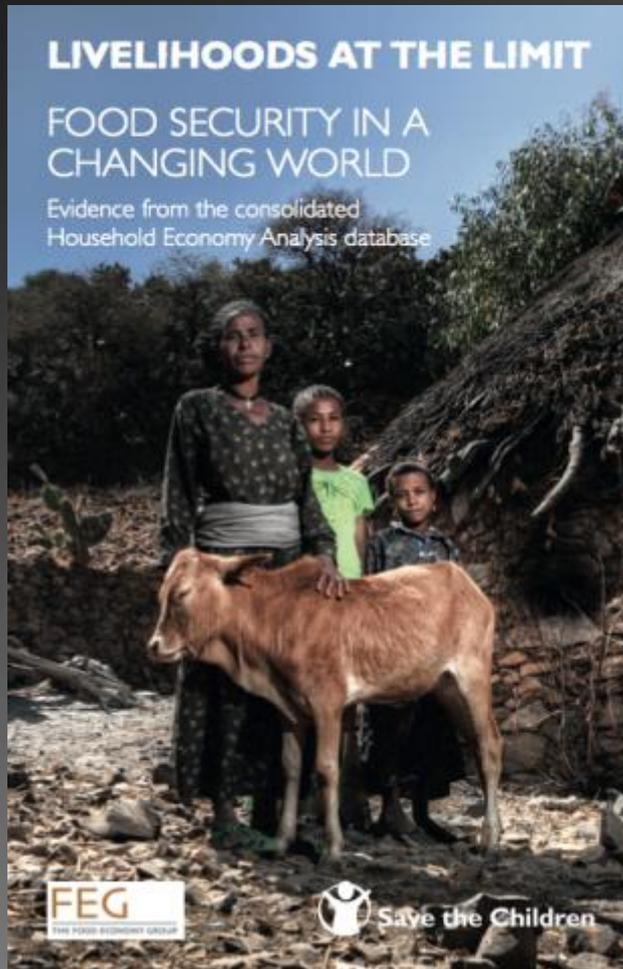
Cropping: 233

Agro-pastoral: 40

Pastoral: 31

Urban: 12

# Food Security in a Changing World



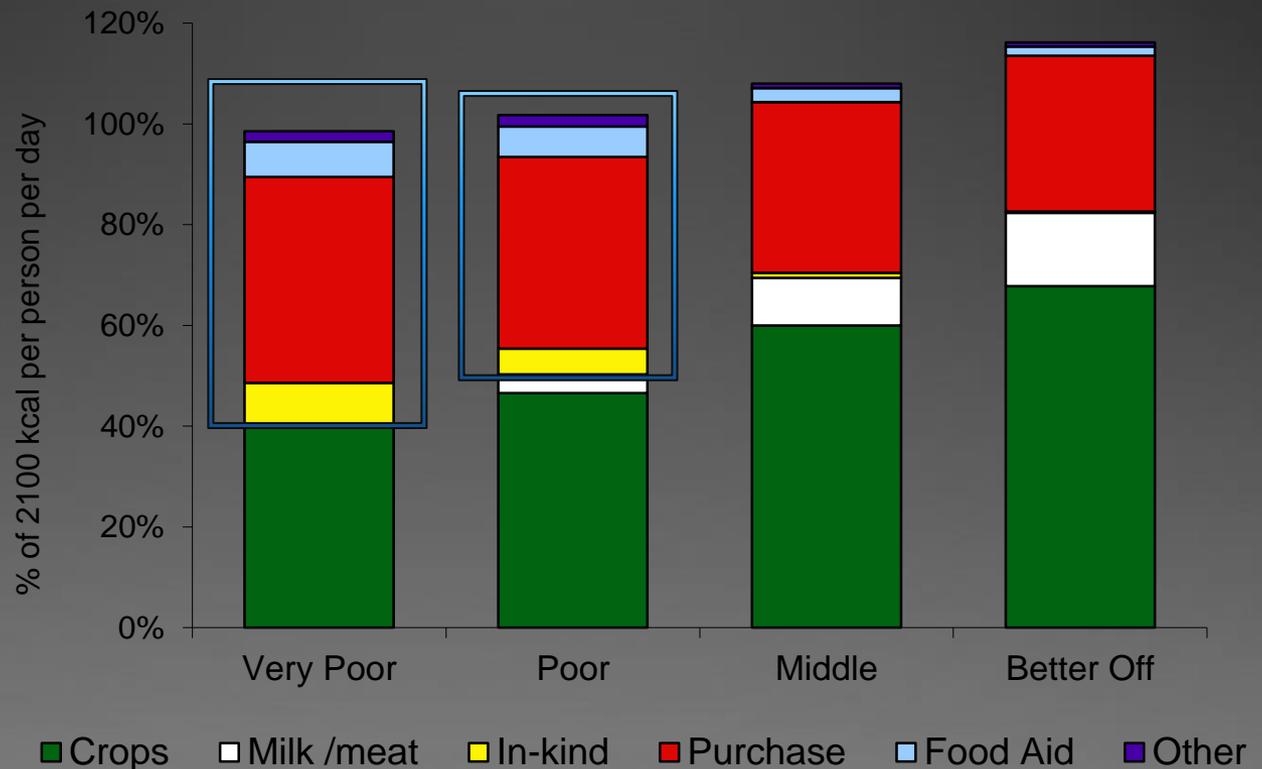
## Drew on **HEA Baselines** to explore:

- What does it mean to be poor in rural areas today and how does this relate to food security?
- What part does cash play in rural livelihoods?
- Should the livestock sector get priority attention?

# Food Security in a Changing World

**If you are poor or very poor, more than half of your food comes from off of your farm**

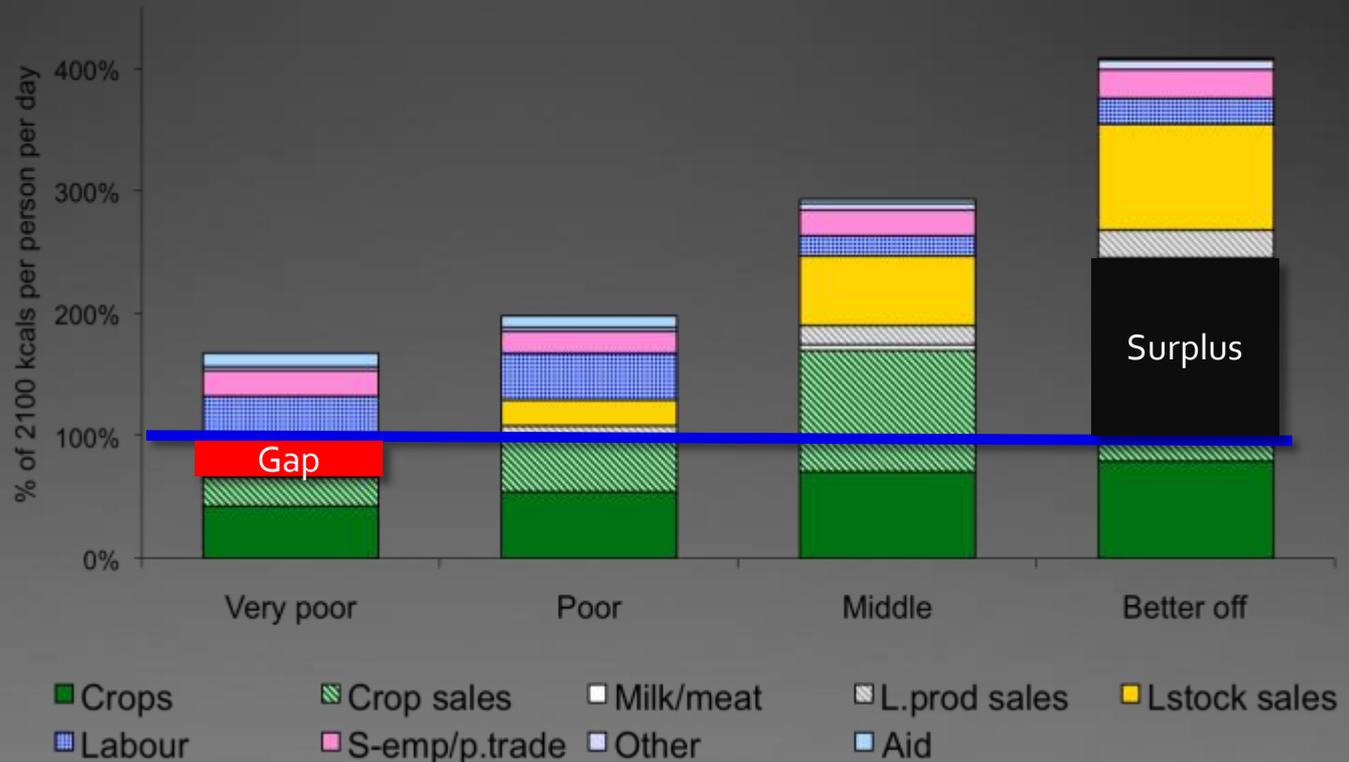
## Sources of Food: All Rural Livelihood Zones By Wealth Group



# Food Security in a Changing World

**On average, better off households produce enough food to cover twice their households' minimum calorie requirements. They buy food to diversify, while very poor households buy food to fill a real gap.**

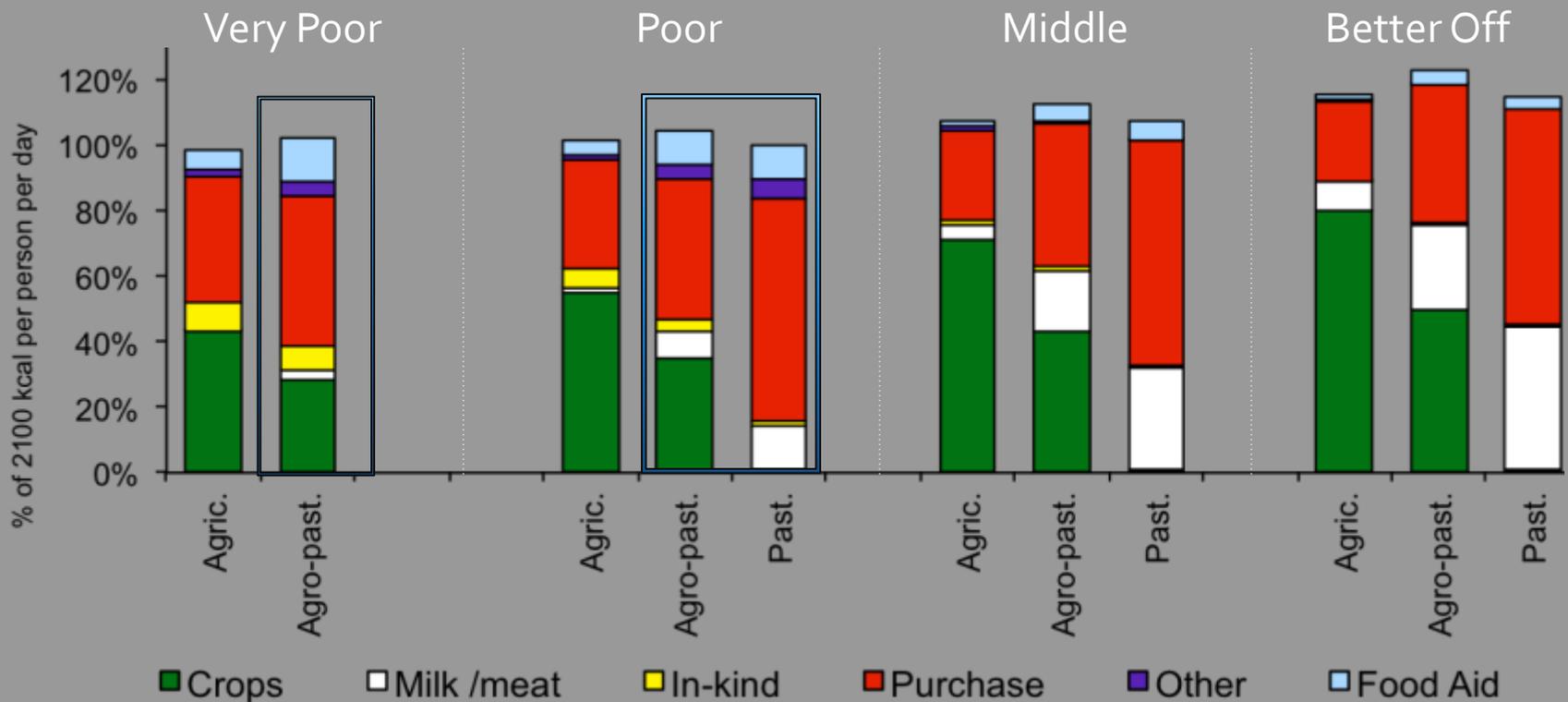
Total Income: All Rural Livelihood Zones  
By Wealth Group



# Food Security in a Changing World

## Looking at agricultural, agro-pastoral and pastoral zones.

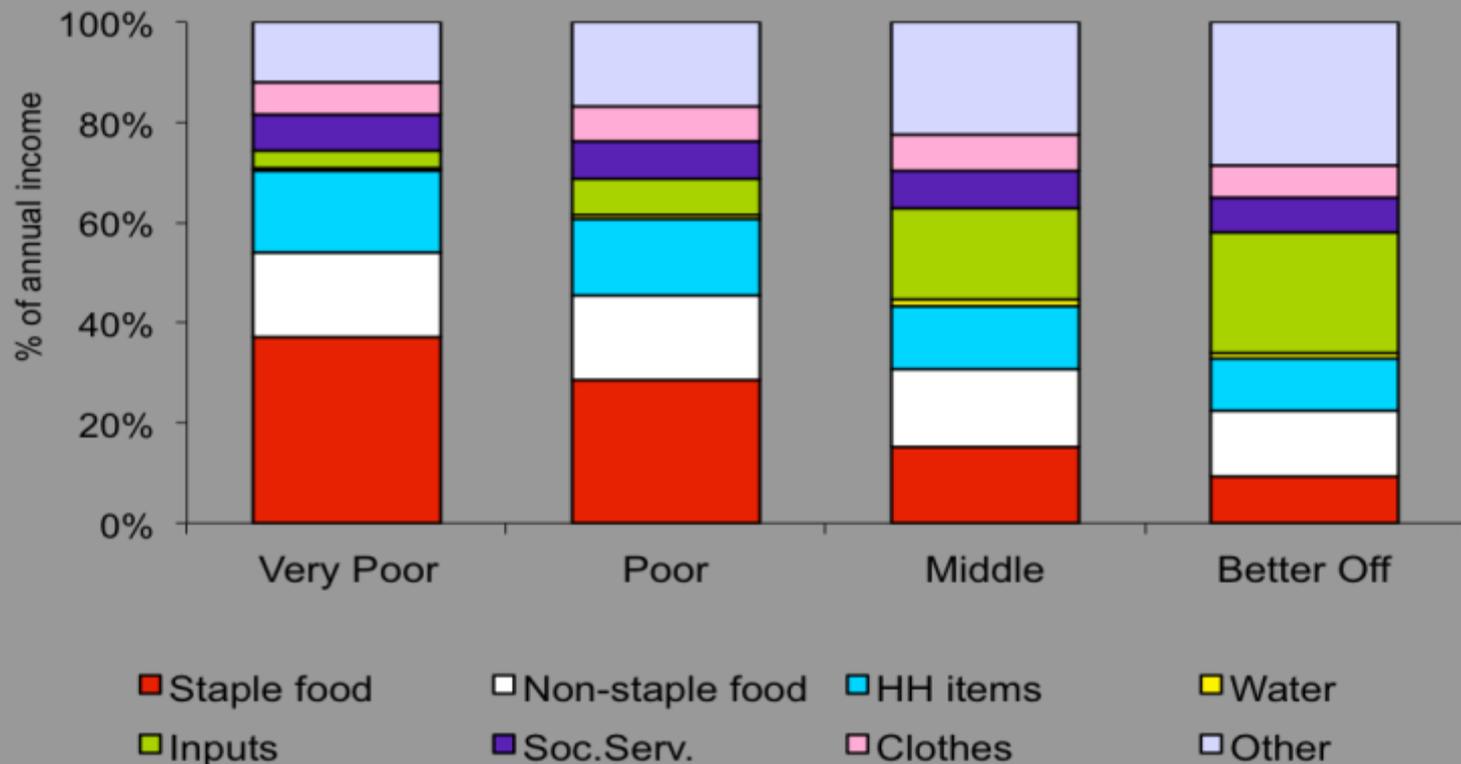
Sources of Food: By Livelihood Zone Type & Wealth Group



# Food Security in a Changing World

The heavy purchase requirement for rural poor households is reflected in their expenditure patterns

Expenditure Patterns: All Rural Livelihood Zones



# Food Security in a Changing World

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## Policy Implication

At least one of the reasons for continued malnutrition is the fact that poorer households can neither produce nor purchase enough of the right kind of food. A combination of strategies is needed to improve access to nutrients essential for the well-being of mothers and for the growth of children.

# Food Security in a Changing World



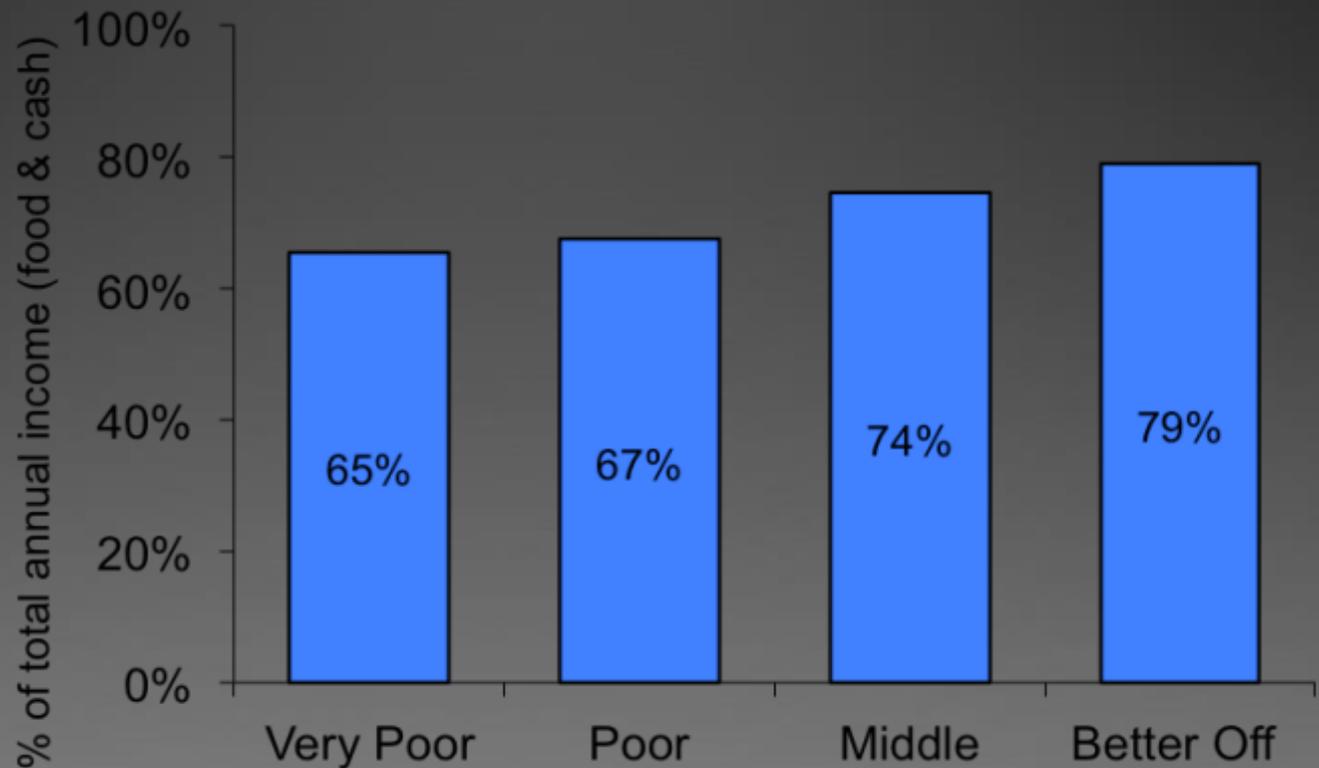
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# Food Security in a Changing World

**Rural economies are increasingly cash-based.**

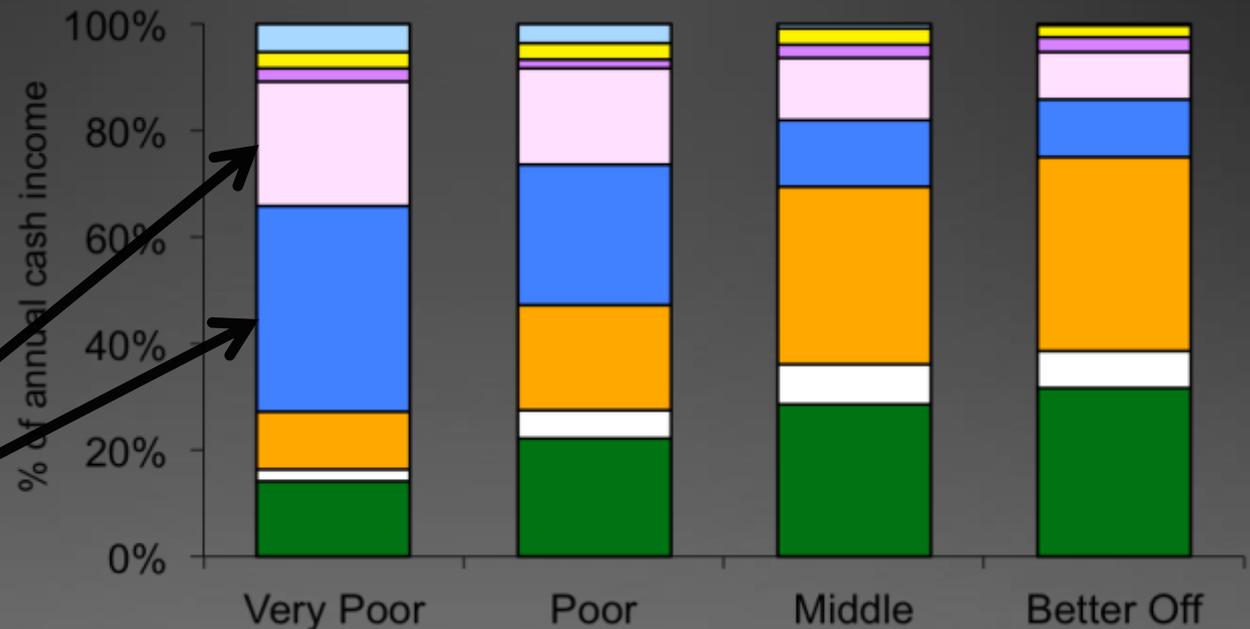
Cash as a Percent of Total Income By Wealth Group: All Rural Zones



# Food Security in a Changing World

The poorer you are, the more you need to sell your own labour to get cash.

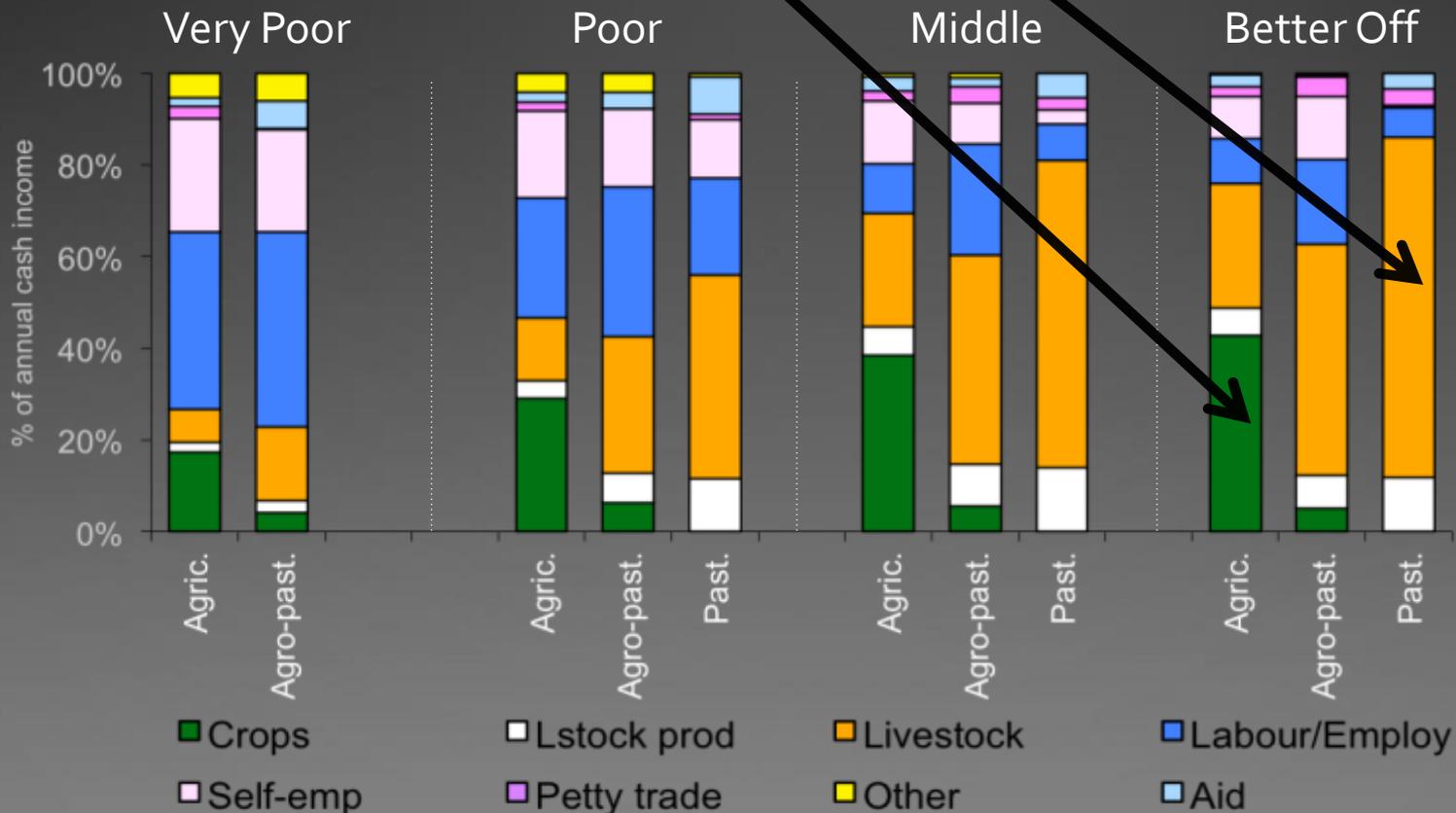
## Sources of Cash Income: All Rural Livelihood Zones



# Food Security in a Changing World

The wealthier you are, the more you cash in on your productive assets (land, livestock and human capital).

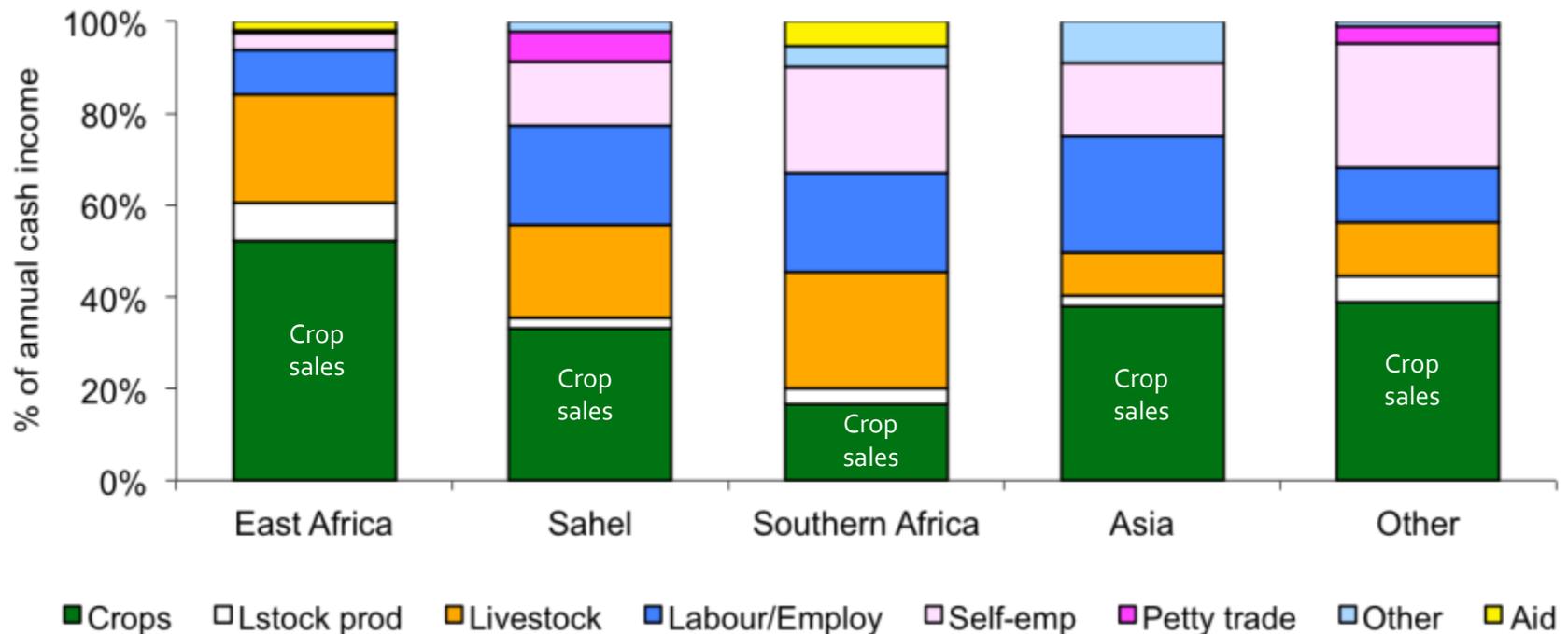
Sources of Cash Income by Livelihood Zone Type and Wealth



# Food Security in a Changing World

For the rural population as a whole, crop sales are not always the most important source of cash, even in cropping zones.

Sources of Cash Income by Geographic Region:  
Cropping Zones



# Food Security in a Changing World

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## Policy Implication

Since the majority of poor and very poor households obtain most of their food and cash income from sources other than their own crop production, it makes sense to consider an array of support and investment options outside the realm of smallholder agriculture.

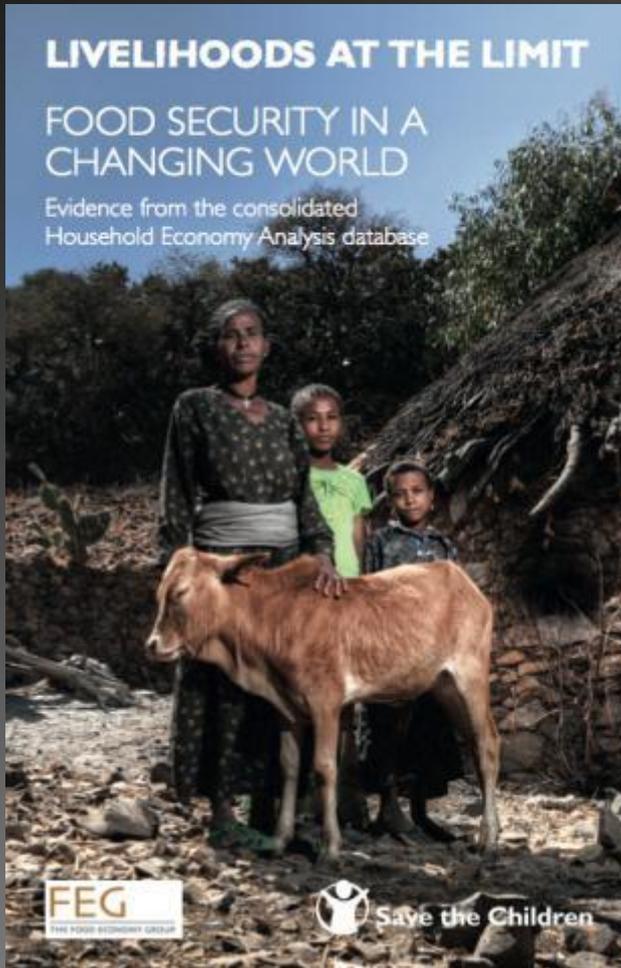
# Food Security in a Changing World

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## Policy Implication

One of the key characteristics of being poor is that your most important capital is your own labour. Finding ways to support and protect the income from local and seasonal migratory labour should be a top priority.

# Food Security in a Changing World



## Drew on **HEA Baselines** to explore:

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# Food Security in a Changing World

## Total Income (food & cash)

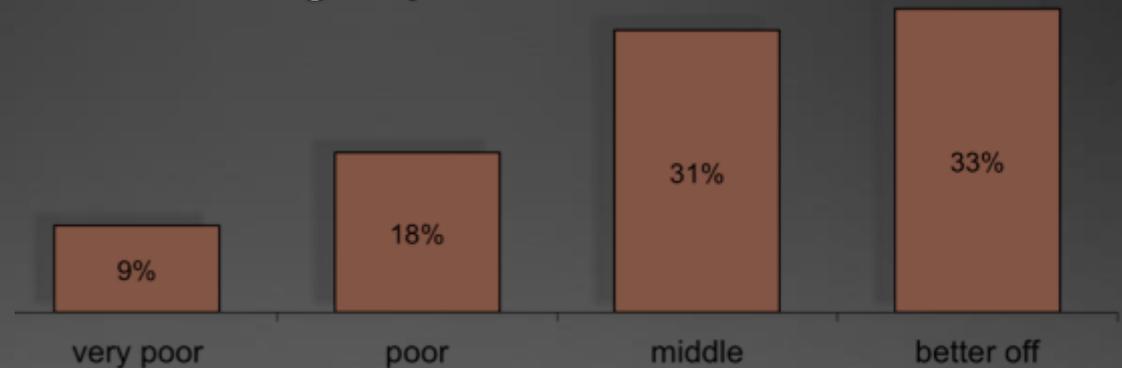


- Crops
- ▨ Crop sales
- Milk/meat
- L.prod sales
- Lstock sales
- Labour/Employ
- S-emp/p.trade
- Other
- Aid

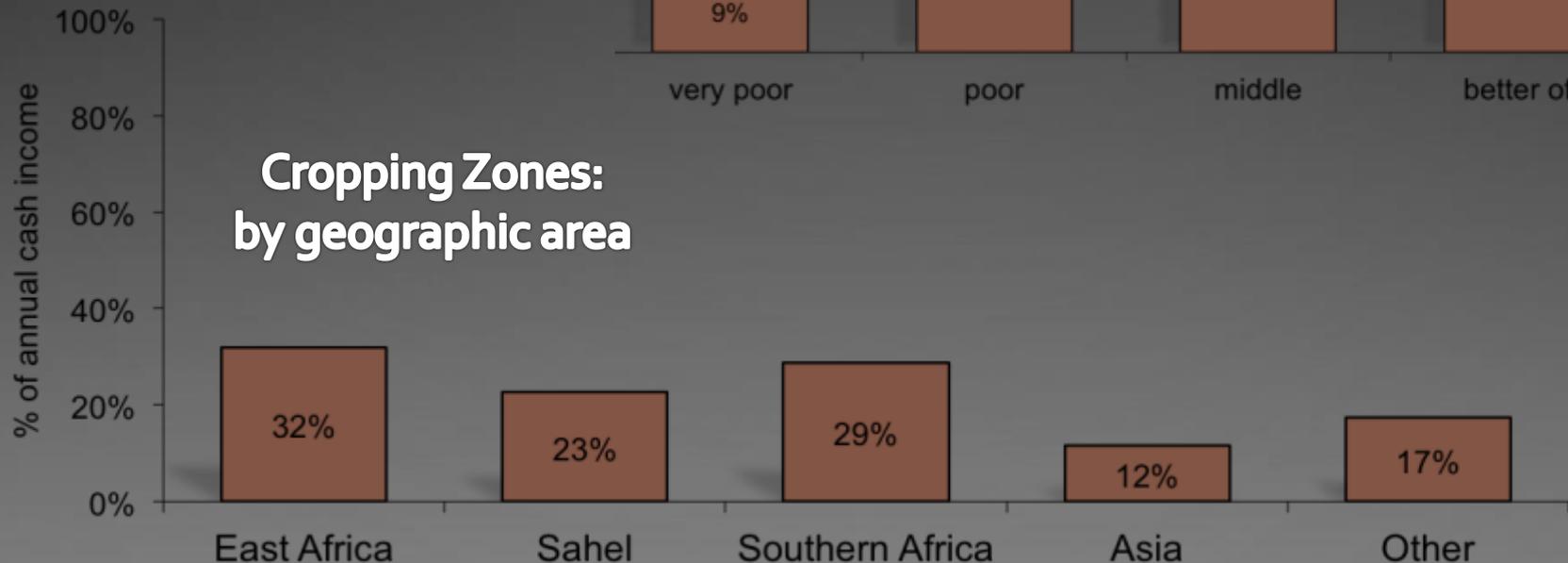
# Food Security in a Changing World

## Percent of Cash Income from Livestock and Livestock Product Sales

Cropping Zones: by wealth group



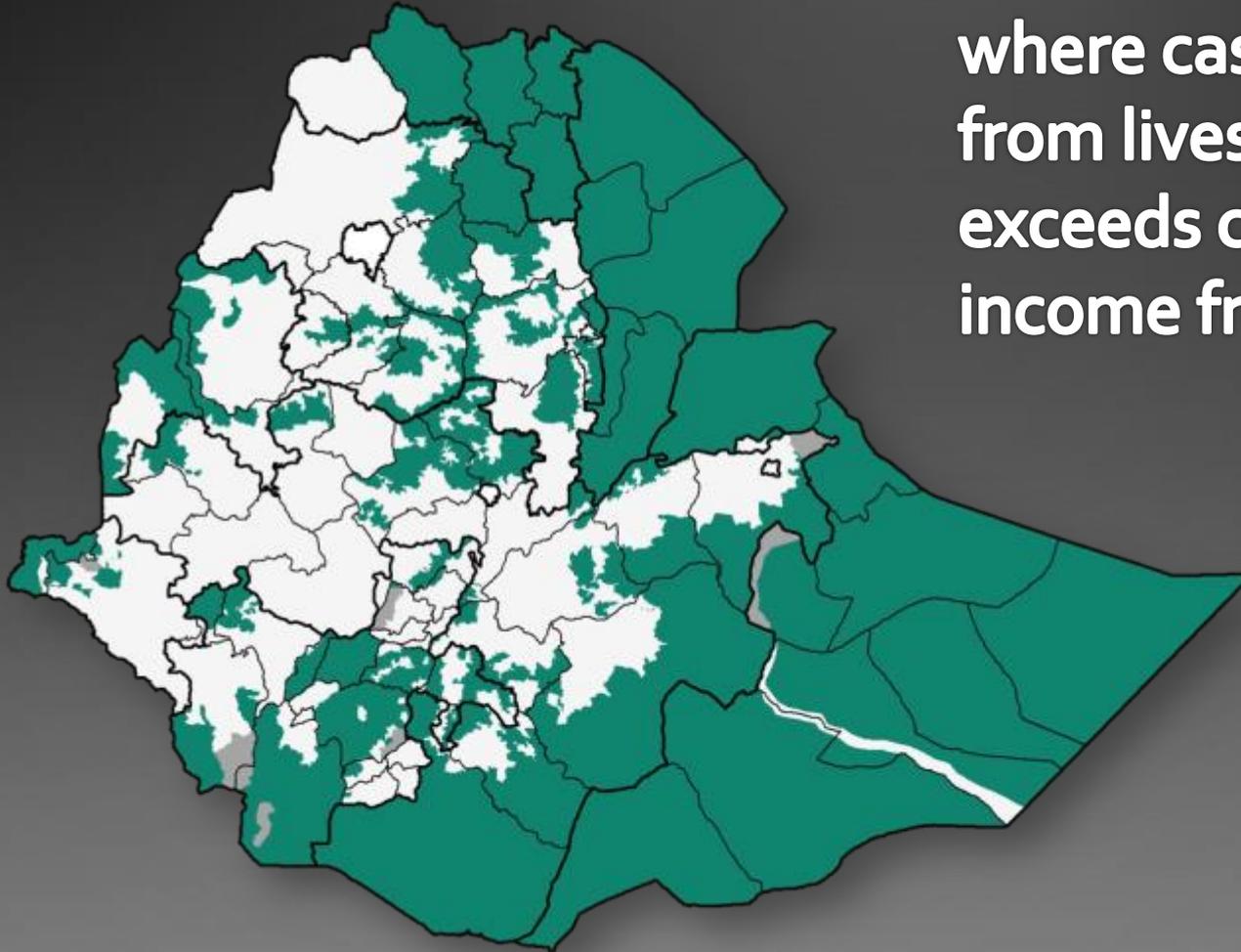
Cropping Zones: by geographic area



# Food Security in a Changing World

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**Areas in Ethiopia  
where cash income  
from livestock  
exceeds cash  
income from crops**



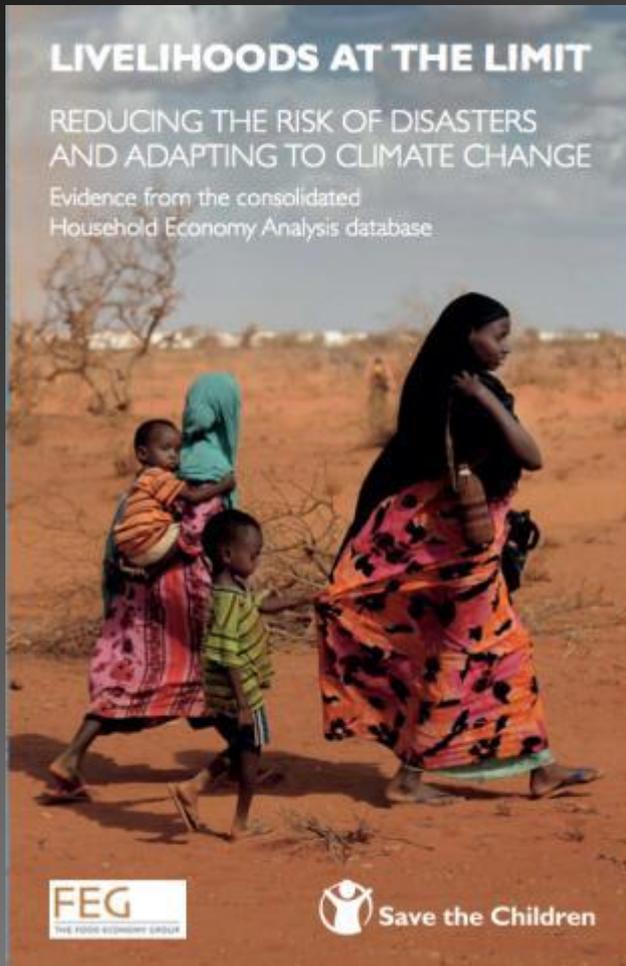
# Food Security in a Changing World

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## Policy Implication

Investments in livestock  
could pay off for all groups.

# Reducing the Risk of Disasters and Adapting to Climate Change



Drew on **HEA Outcome Analysis** to explore:

- Which shocks have the most damaging impact on households?
- Does diversification always help reduce the risk of disaster?
- Will increasing poor households' agricultural production increase their resilience?

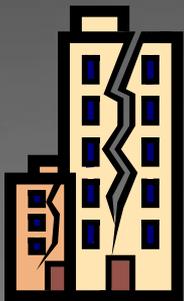
# Reducing the Risk of Disasters and Adapting to Climate Change

## In an earthquake....

Natural Hazards Formulation

Risk = Hazard + Vulnerability

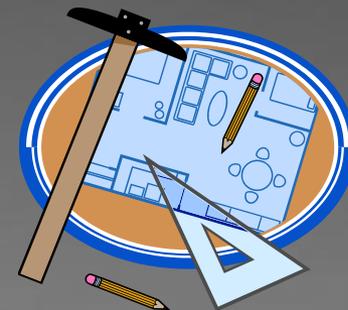
Building  
Collapse



Location and  
Magnitude of Quake



Structural  
Integrity



# Reducing the Risk of Disasters and Adapting to Climate Change

## In food and livelihood security....

This is the focus of most resilience programmes

$$\text{Risk} = f(\text{Hazard}, \text{Vulnerability}, \text{Capabilities})$$

DRR Formulation

Extreme  
food or  
livelihood  
Insecurity

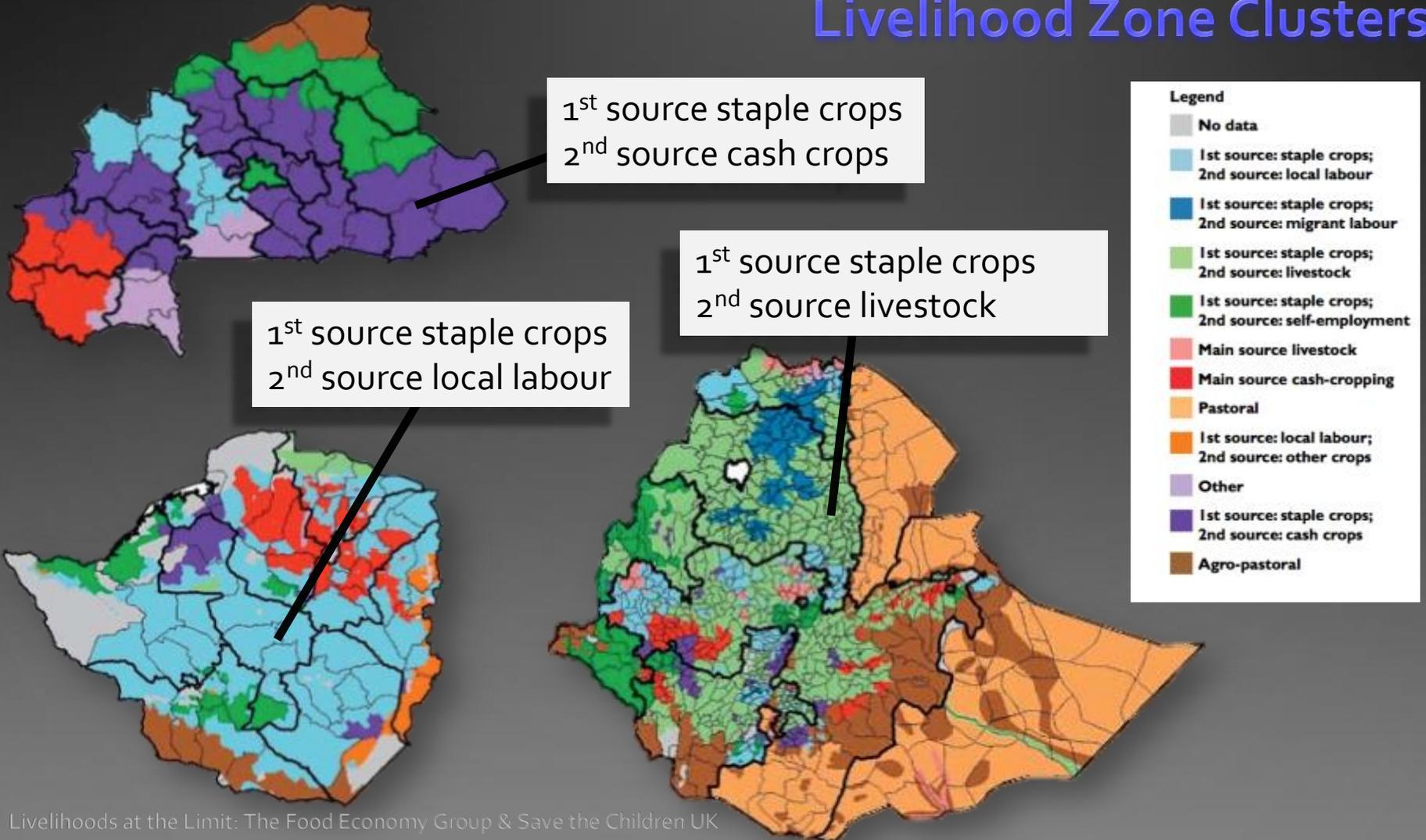
Nature, location  
and magnitude of  
shocks

Household  
and regional  
economic  
systems in  
relation to  
shock(s)

People's  
capacity to  
cope on their  
own

# Reducing the Risk of Disasters and Adapting to Climate Change

## Livelihood Zone Clusters



# Reducing the Risk of Disasters and Adapting to Climate Change

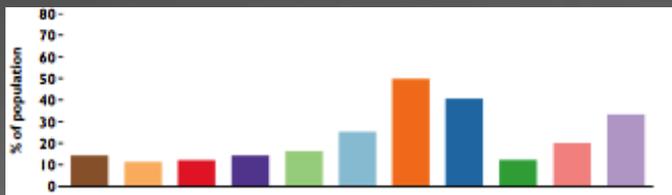
## Crop shock



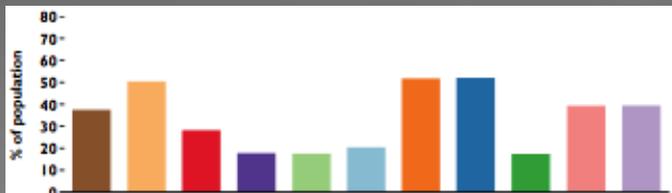
## Livestock shock



## Labour shock



## Purchase shock



Across the board, the crop and purchase shocks result in the largest proportion of the population affected.

But the labour and livestock shocks also create big problems in specific zones.

# Reducing the Risk of Disasters and Adapting to Climate Change

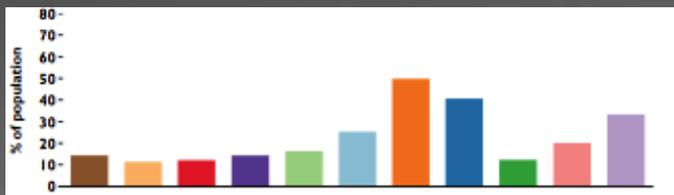
## Crop shock



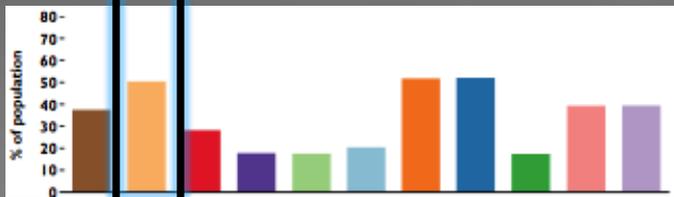
## Livestock shock



## Labour shock

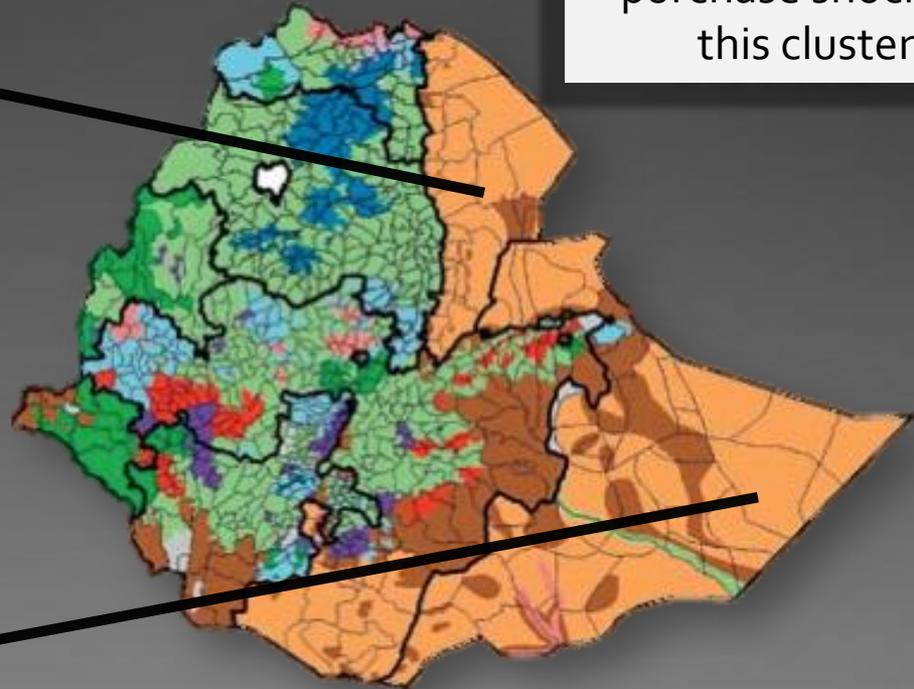


## Purchase shock



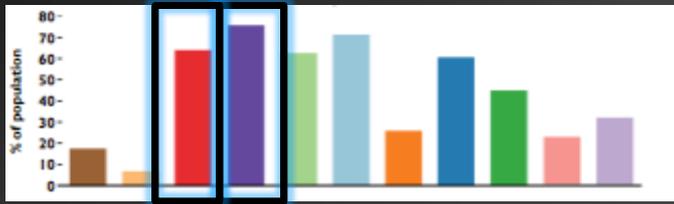
A more accurate basis for early warning

Monitor livestock and purchase shocks in this cluster

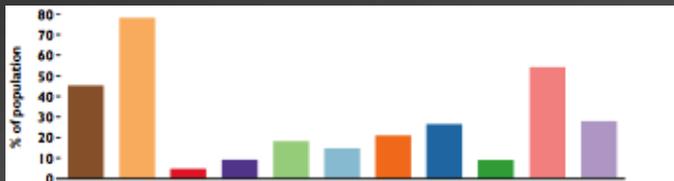


# Reducing the Risk of Disasters and Adapting to Climate Change

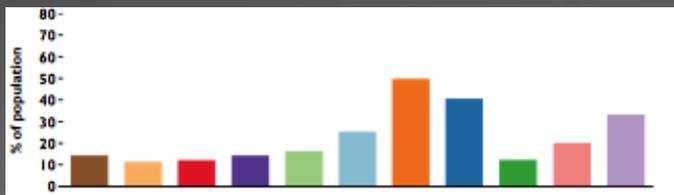
Crop shock



Livestock shock



Labour shock

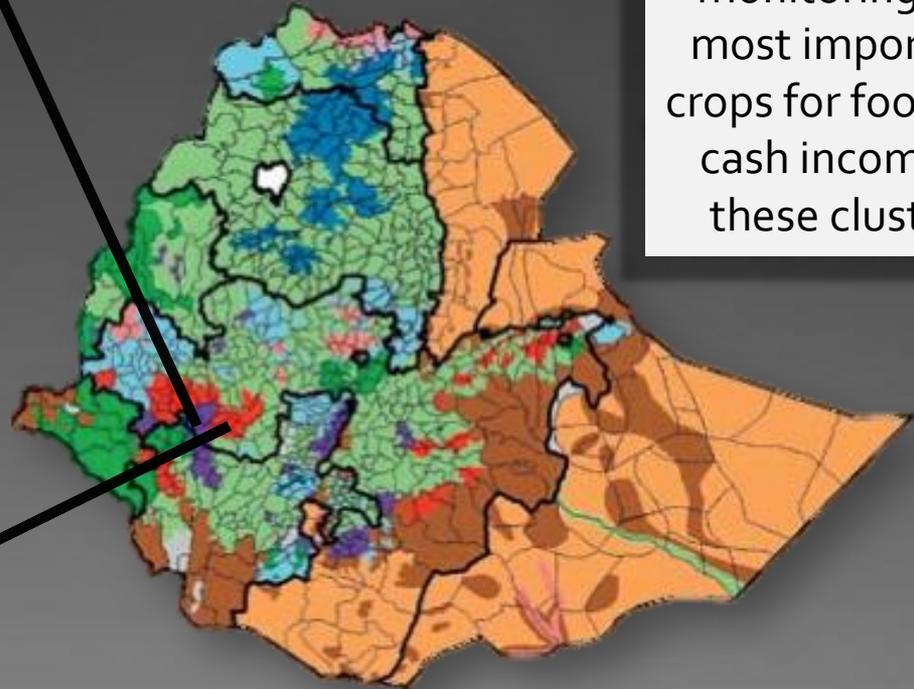


Purchase shock



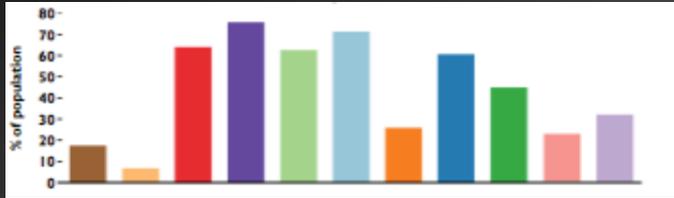
A more accurate basis for early warning

Make sure you are monitoring the most important crops for food and cash income in these clusters

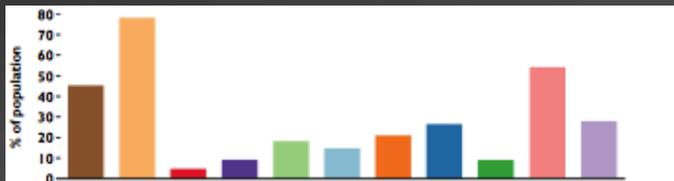


# Reducing the Risk of Disasters and Adapting to Climate Change

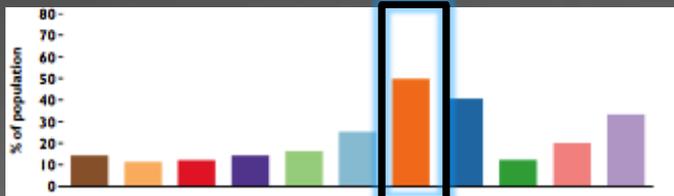
## Crop shock



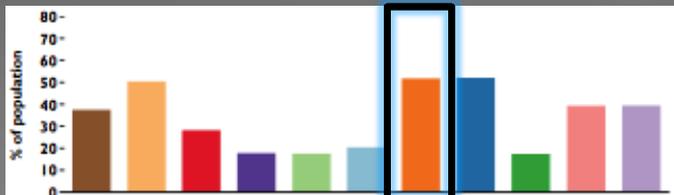
## Livestock shock



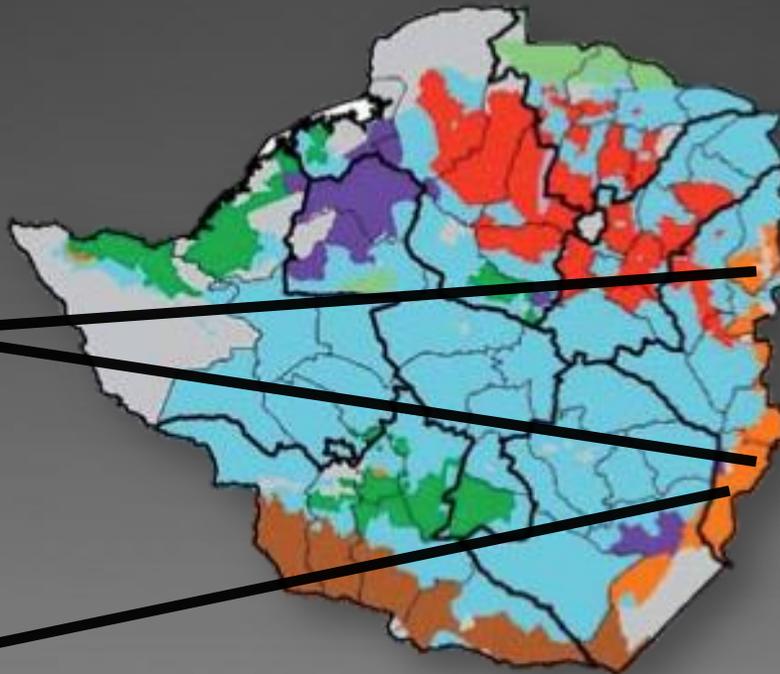
## Labour shock



## Purchase shock



A more accurate basis for early warning



Spend some extra money to collect monthly data on local wage rates here as well as monitor staple food prices

# Food Security in a Changing World

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## Conclusion

A livelihood-calibrated early warning system is essential for accurate early response. Without the livelihood context you get an early warning of the hazard, not the outcome.

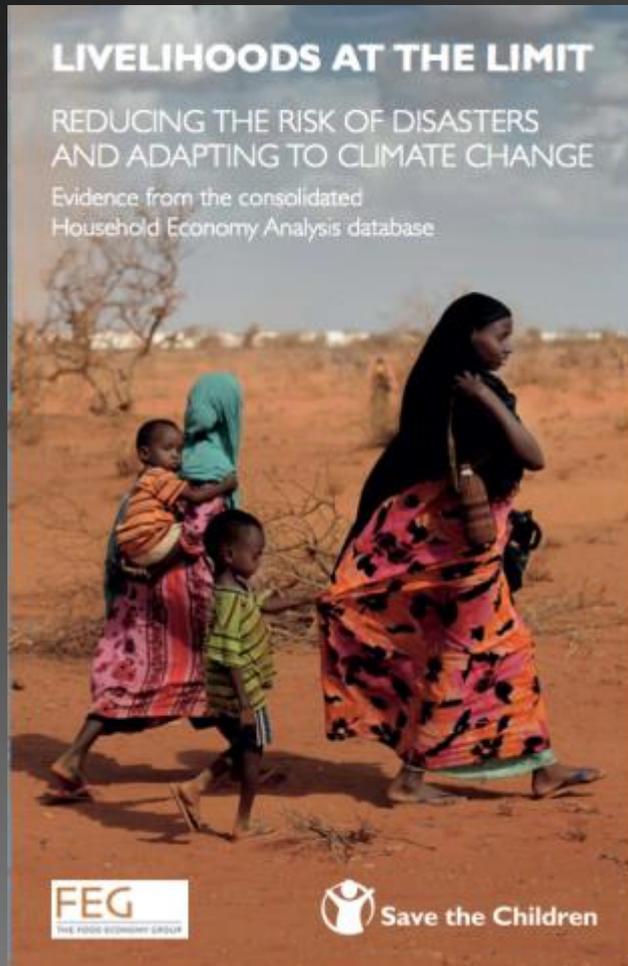
# Food Security in a Changing World

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## Conclusion

Across all livelihood zones price shocks create deficits, second only to crop shocks. Poorer rural households are heavily reliant on purchasing their food. Price shocks reduce food access in *rural* as well as *urban* areas.

# Reducing the Risk of Disasters and Adapting to Climate Change



Drew on **HEA Outcome Analysis** to explore:

- Which shocks have the most damaging impact on households?
- Does diversification always help reduce the risk of disaster?
- Will increasing poor households' agricultural production increase their resilience?
- What hazards are pastoralists most vulnerable to? What does resilience mean in a pastoralist economy?

# Reducing the Risk of Disasters and Adapting to Climate Change

## Drought Scenario

<b>Crop shock</b>	50% of baseline crop production 50% of baseline income from crop sales
<b>Livestock shock</b>	25% of baseline milk/meat 40% of income from livestock sales
<b>Labour shock</b>	75% of in-kind payment for local labour 55% of baseline income from local labour
<b>Self-employment shock</b>	75% of baseline income from self employment
<b>Purchase shock</b>	Doubling of food prices

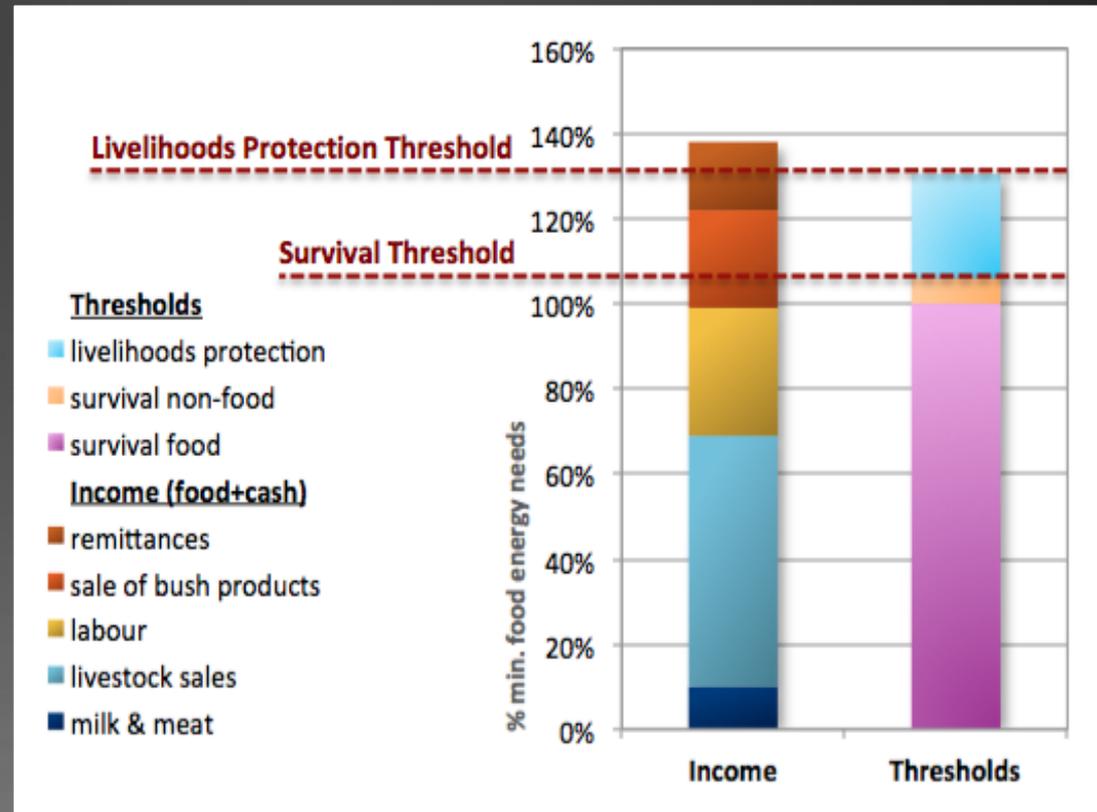
*Note: People's coping capacity expands when one income source is reduced. These analyses include this expansion of coping to the extent that it does not harm people's basic livelihoods.*

# Reducing the Risk of Disasters and Adapting to Climate Change

**The Survival Threshold** is the line below which intervention is required to **save lives**.

It is the total food and cash income required to cover

- A) 100% of minimum food energy needs (2100 kcals per person),
- B) the costs associated with food preparation and consumption (i.e. salt, soap kerosene and/or firewood for cooking and basic lighting),
- C) any expenditure on water for human consumption



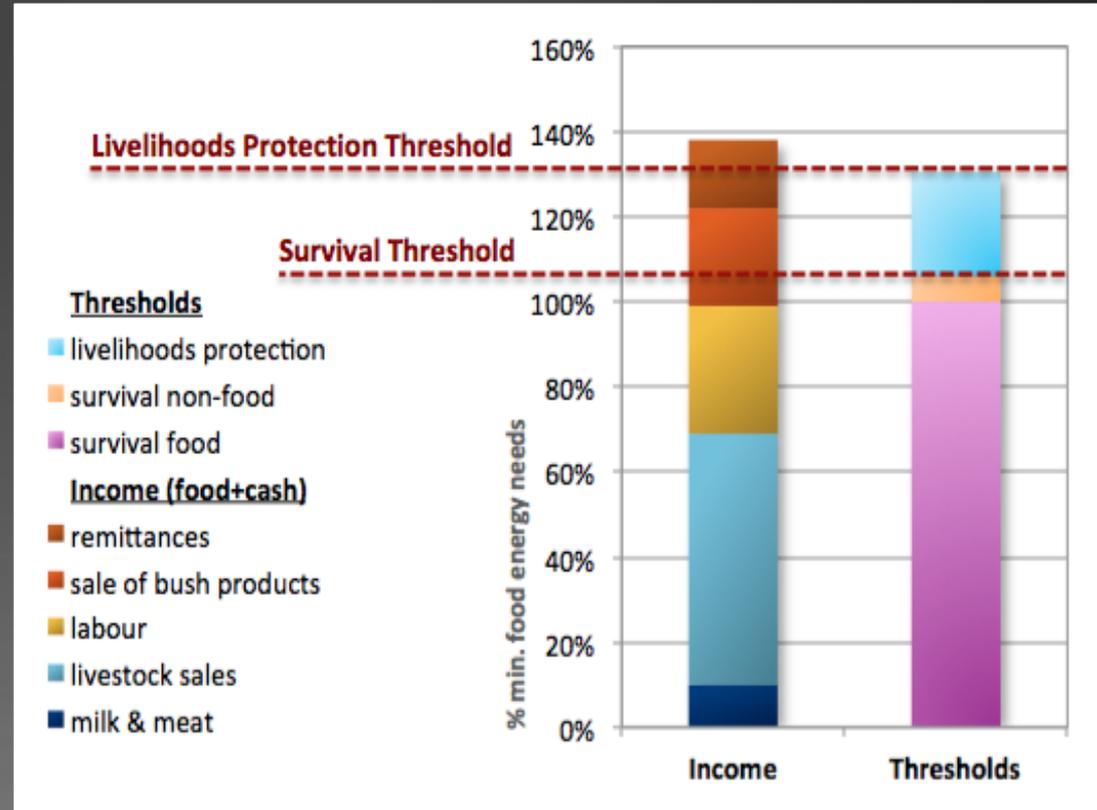
# Reducing the Risk of Disasters and Adapting to Climate Change

## The Livelihoods Protection

Threshold is the line below which an intervention is required to maintain existing livelihood assets

It represents the total total expenditure to:

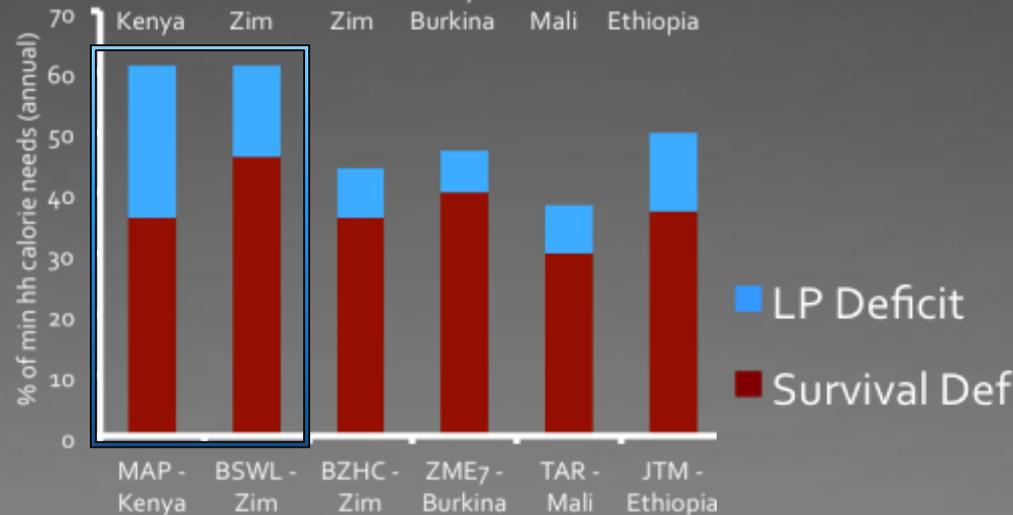
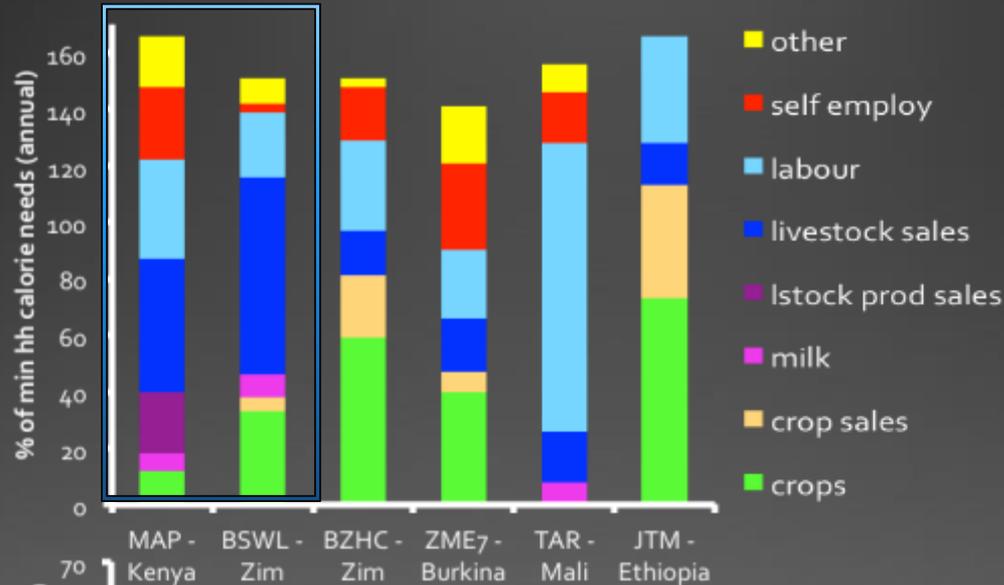
- A) ensure basic survival (see above),
- B) maintain access to basic services (e.g. routine medical and schooling expenses),
- C) sustain livelihoods in the medium to longer term (e.g. regular purchase of seeds, inputs vet drugs);
- D) ensure a locally acceptable standard of living (e.g. coffee, berberi)



# Reducing the Risk of Disasters and Adapting to Climate Change

The most diverse income portfolios are on the left....

...and so are the biggest deficits.



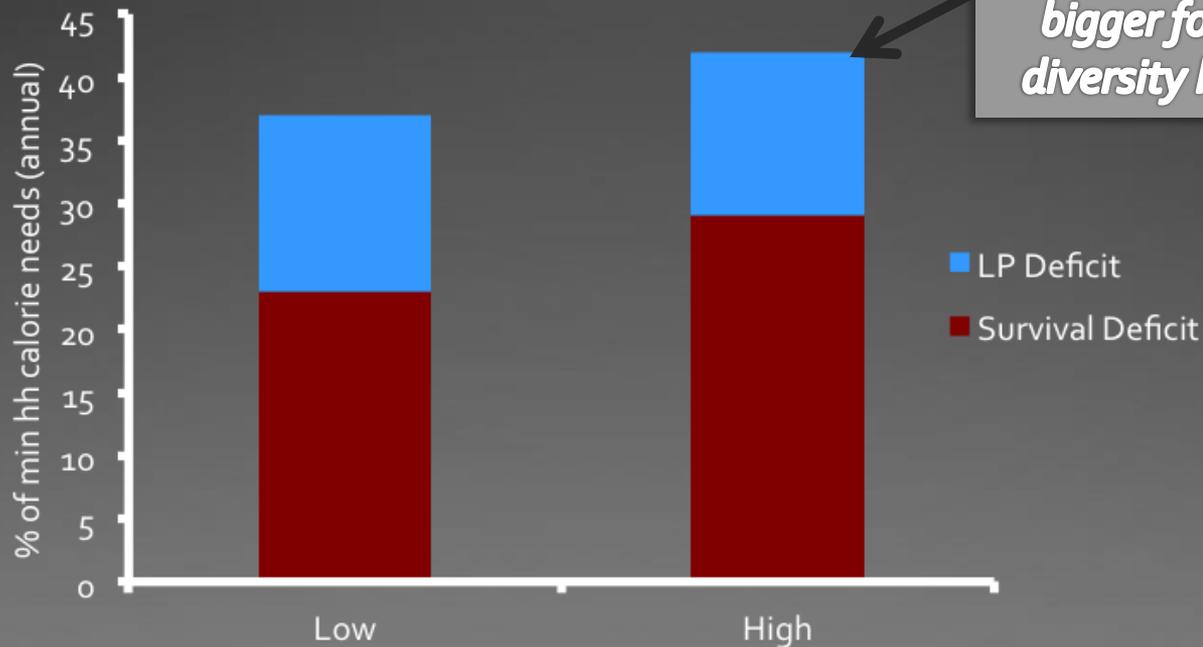
**Baseline Total Income for Poor Households in Six Livelihood Zones**

**Outcome after Drought Scenario for Same Six Livelihood Zones**

# Reducing the Risk of Disasters and Adapting to Climate Change

The same results emerge when we look at the entire dataset.

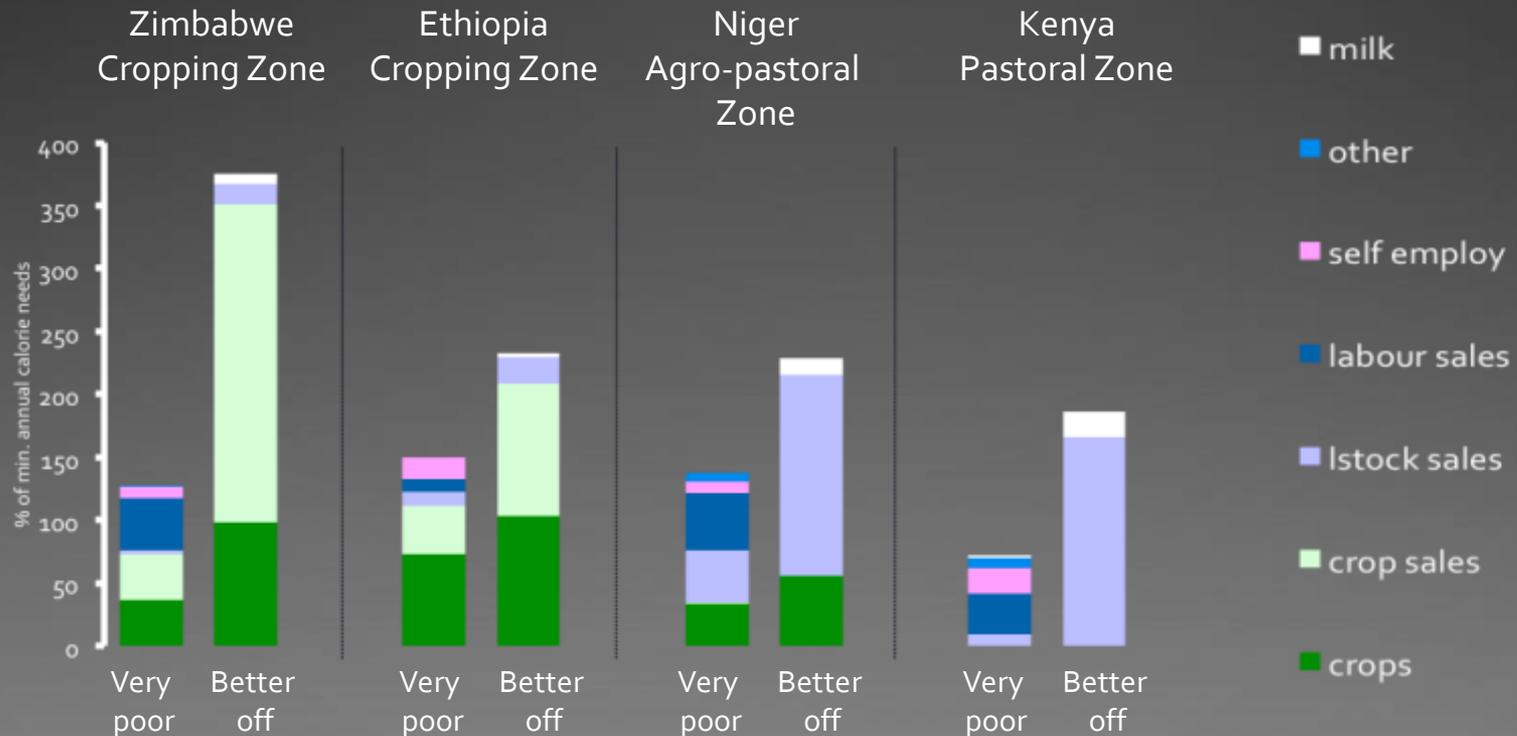
Post-Drought Scenario Results for Poor Households, Grouped by Diversity Level



*After the drought scenario, the deficit is bigger for the high-diversity households.*

# Reducing the Risk of Disasters and Adapting to Climate Change

The better off have less diverse incomes in almost every instance.



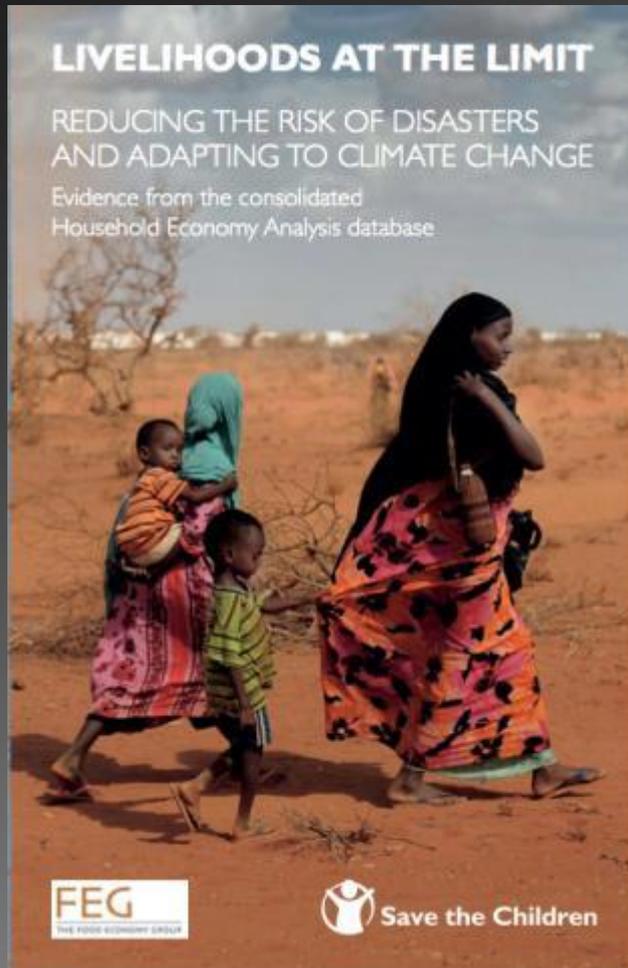
# Food Security in a Changing World

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## Preliminary Conclusion

It is worth questioning whether resilience can be built and risk reduced in rural areas by diversifying incomes. More evidence is needed to prove the effectiveness of this strategy.

# Reducing the Risk of Disasters and Adapting to Climate Change



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# Reducing the Risk of Disasters and Adapting to Climate Change

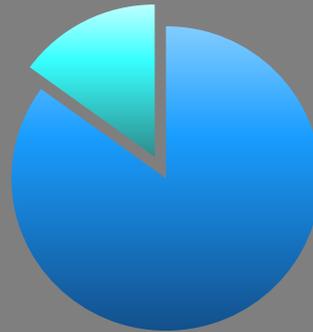
## Agricultural Investment Scenario

25% increase in yield on a  $\frac{1}{4}$  hectare resulting from the investment of improved seed and fertiliser



=

15% of annual calories **added** to household food income

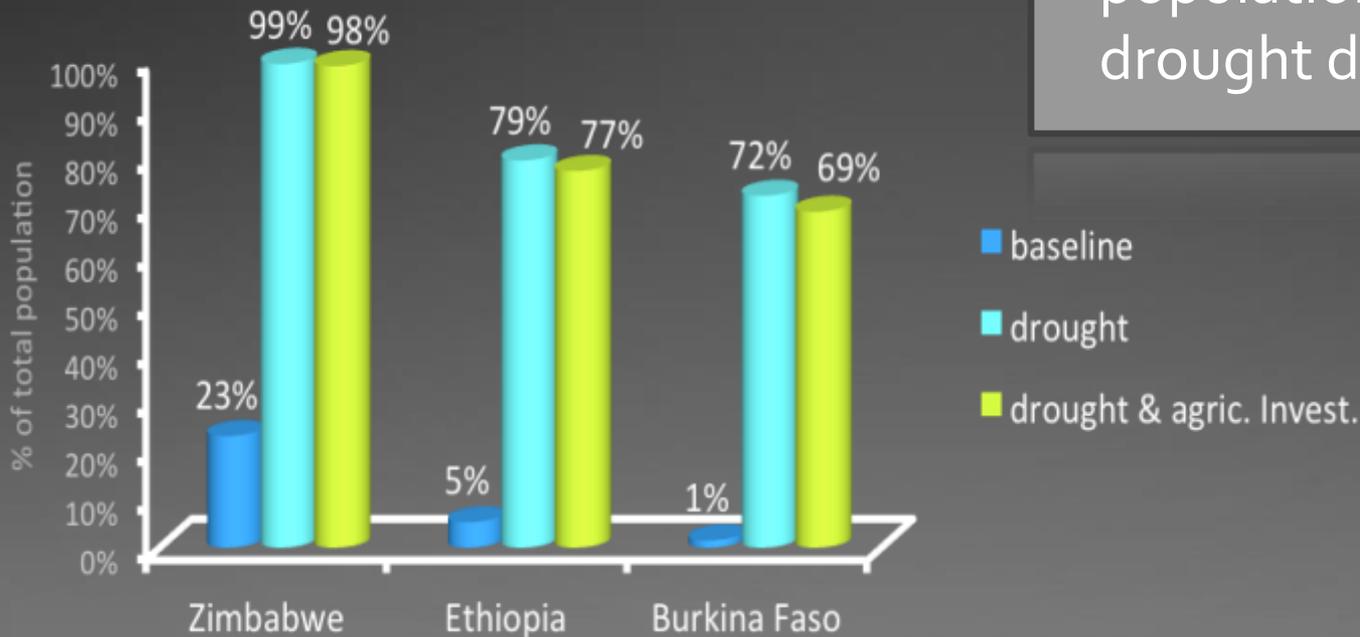


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Increase in Livelihoods Protection Threshold reflecting extra cost of seeds and fertilisers

# Reducing the Risk of Disasters and Adapting to Climate Change

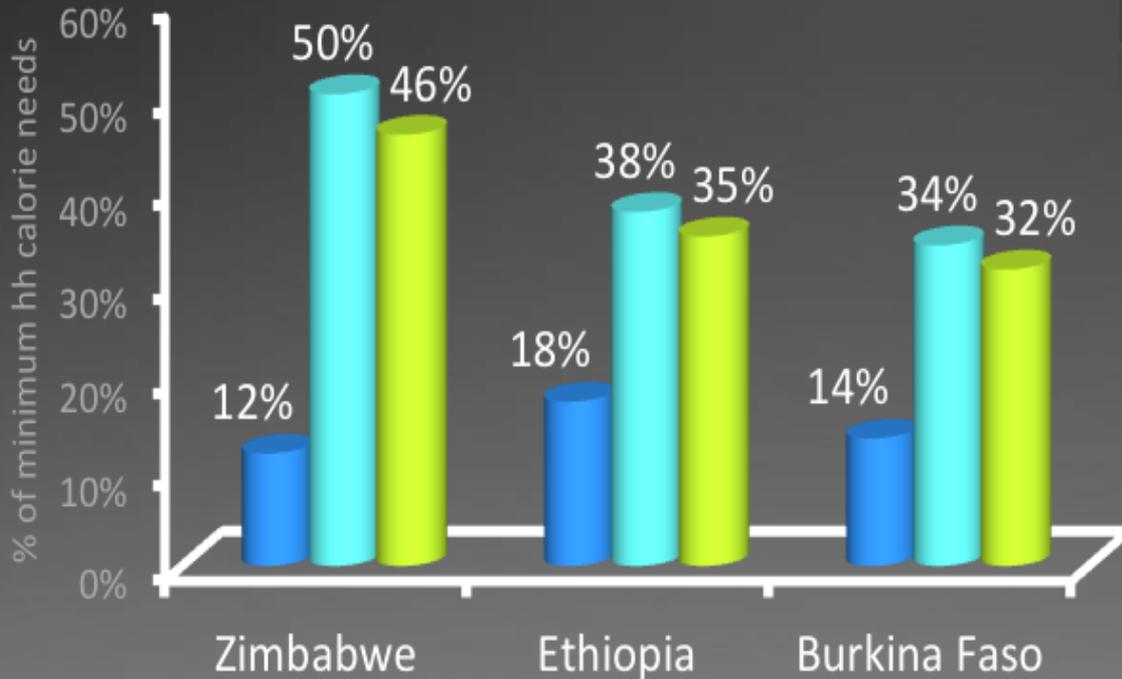
Population with a Livelihoods Protection Deficit



The investment in agriculture does little to reduce the % of the population with a post-drought deficit.....

# Reducing the Risk of Disasters and Adapting to Climate Change

Size of the Livelihoods Protection Deficit



...or the size of the deficit.

- baseline
- drought
- drought & agric. Invest.

# Reducing the Risk of Disasters and Adapting to Climate Change

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**Why doesn't an extra 2 sacks of production increase resilience?**

Drought does not discriminate. By increasing the reliance on crop production, you increase vulnerability to weather-related (and other types of production) hazards.

Household spending needs to increase to cover the new production requirements.

With a higher livelihoods protection threshold, the net gains diminish.

# Food Security in a Changing World

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## Preliminary Conclusion

It is not clear that improving smallholder agriculture on its own provides *significant protection* against disaster risks.

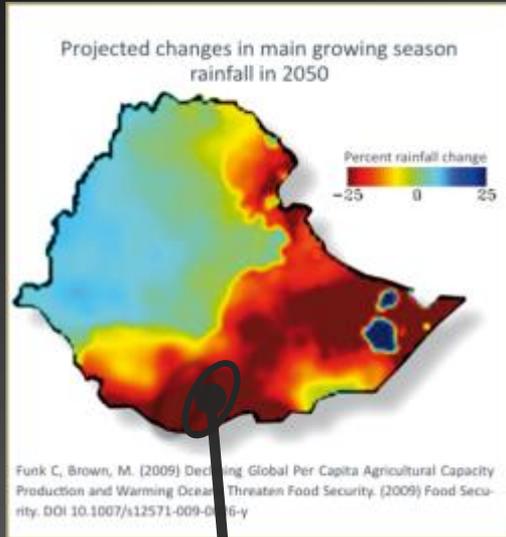
# Food Security in a Changing World

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## Policy Implication

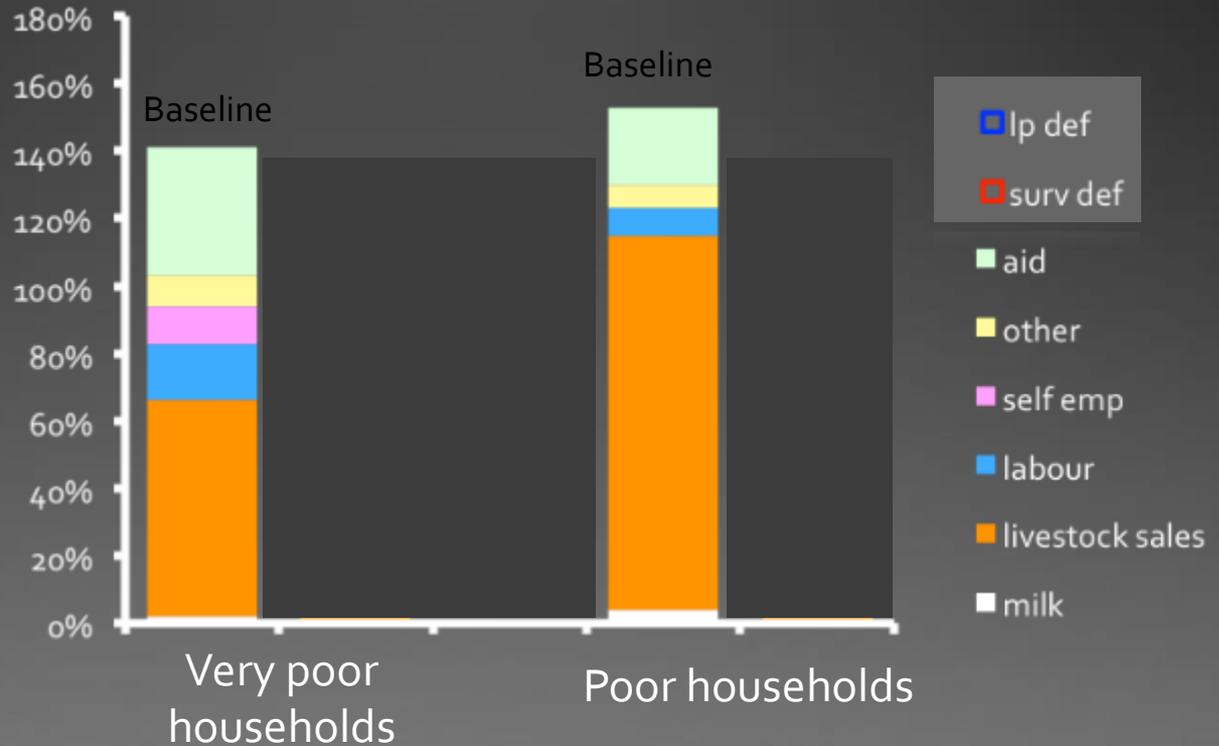
Resilience programmes should integrate a 'pre-flight check' into their intervention plans. HEA provides a good starting point for this type of analysis.

# Reducing the Risk of Disasters and Adapting to Climate Change



Ethiopia Oromia  
Borena Guji  
Pastoralist  
Livelihood Zone

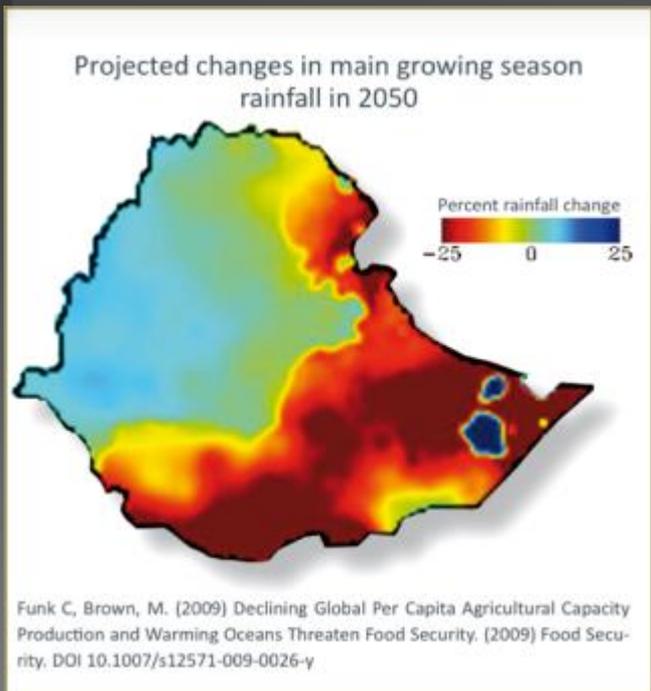
Total Income: Ethiopia Oromia Borena  
Guji Pastoralist Livelihood Zone



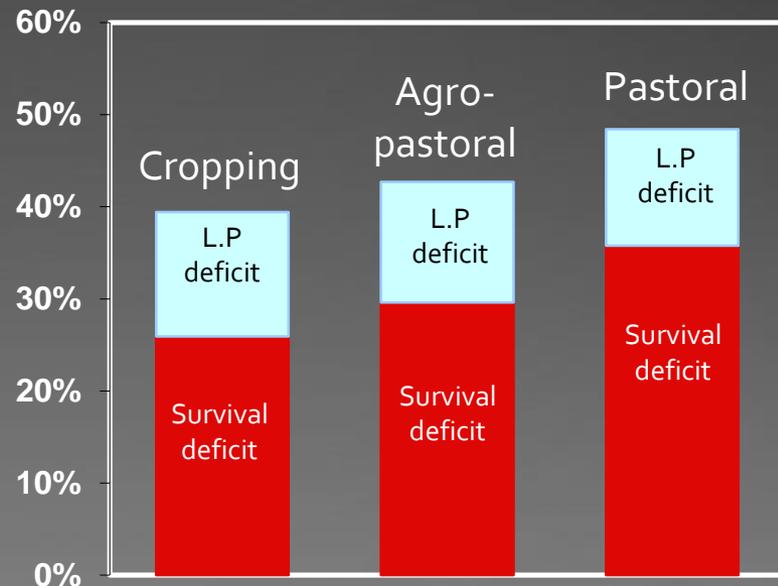
# Reducing the Risk of Disasters and Adapting to Climate Change

Some areas currently inhabited by pastoralists are predicted to have severe drought conditions in the coming 30 years.

Poor households in pastoral areas are among the worst affected by drought.



## Outcome for poor households after drought scenario for the three aggregate livelihood types



# Food Security in a Changing World

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## Policy Implication

The areas where pastoralists live are projected to experience some of the most devastating effects of climate change. We need to conduct prospective risk analyses and develop hazard-proofed resilience programmes in these areas now.

# Reducing the Risk of Disasters and Adapting to Climate Change

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Areas of further research that could draw on the HEA databases:

- Is diversification itself a barrier to economic growth for poor households?
- To what extent do urban-rural linkages reduce disaster risks and, in the context of diversification, is this a promising area for investment?
- Would increasing herd sizes help reduce the risk of livelihood disasters for pastoralists?
- Can we pair livelihood zone clusters with optimal investment packages that strike a balance between economic growth and disaster risk reduction?

Thank you!