



Food and Agriculture Organization
of the United Nations

Measuring household resilience to food insecurity: RIMA-II

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1) Resilience measurement

2) What is RIMA-II

3) Case studies



“Resilience is the capacity that ensures adverse stressors and shocks do not have long-lasting adverse development consequences”.

(Resilience Measurement Technical Working Group, 2014)

Resilience is one of the most influential concepts in development studies and projects.

There are many definitions of the term resilience, and the measurement of resilience is challenging.



“Resilience is the capacity that ensures adverse stressors and shocks do not have long-lasting adverse development consequences”.

(Resilience Measurement Technical Working Group, 2014)

As a community, we have made a lot of progress in developing the concept of resilience through:

- Knowledge sharing (papers and guidelines);
- Harmonization;
- Institutionalize;
- Community of practice.

Resilience:

- Is not observable in nature;
- can be applied to various systems (households; community; nations) and sciences (ecological and economic and architectural);
- is highly context-specific;
- changes characteristics and effects based on the nature and extent of shocks;
- is highly time-dependent; and
- We need to consider the “dynamics” of resilience.

Most adopted approach through a multivariable index (Constas *et al.*, 2016):

$$RES_{i,t} = \alpha_1 A1_i + \alpha_2 A2_{i,t} + \alpha_3 X_i + \alpha_4 S_{i,t} + \varepsilon$$

1) Resilience measurement

2) What is RIMA

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RIMA evolution

- From purely latent variable model to mixed latent variables and regression analysis
- Pre-existing or ad-hoc data (LSMS-type)
- From purely quantitative to mixed-method
- From purely objective to mixed subj-obj measures
- Shocks and food security indicators from endogenous to exogenous factors of resilience
- From five to four pillars of resilience

RIMA takes into account several types of shocks:



Idiosyncratic shocks, such as livestock death, job loss and illness of a household member. These shocks are *self-reported* by households in surveys.



Covariate shocks, which are observed in secondary data and are in turn divided into:



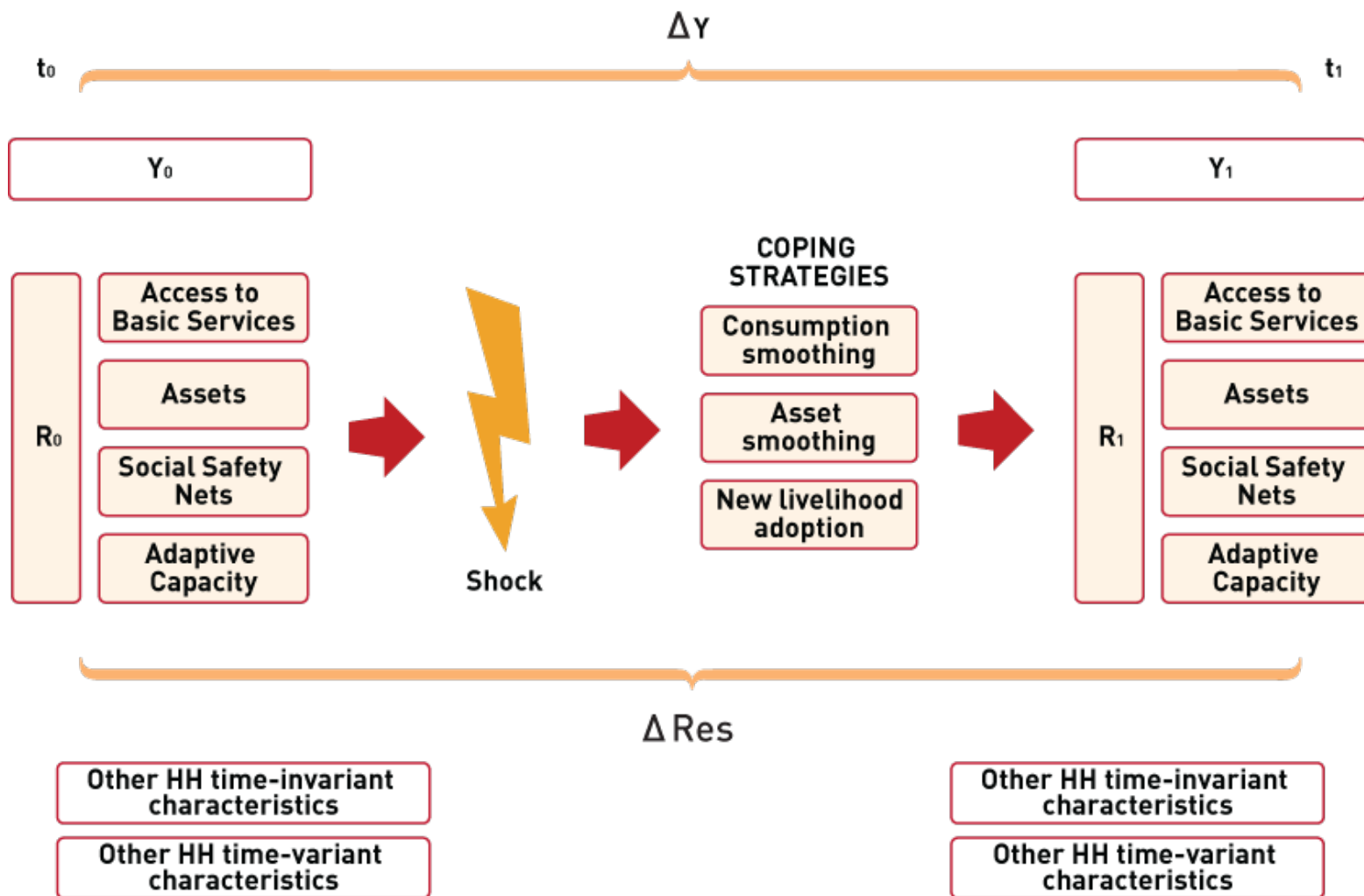
Climate shocks, such as droughts, floods, rainfalls and other natural hazards, registered through GIS (*FAO-GIEWS*);

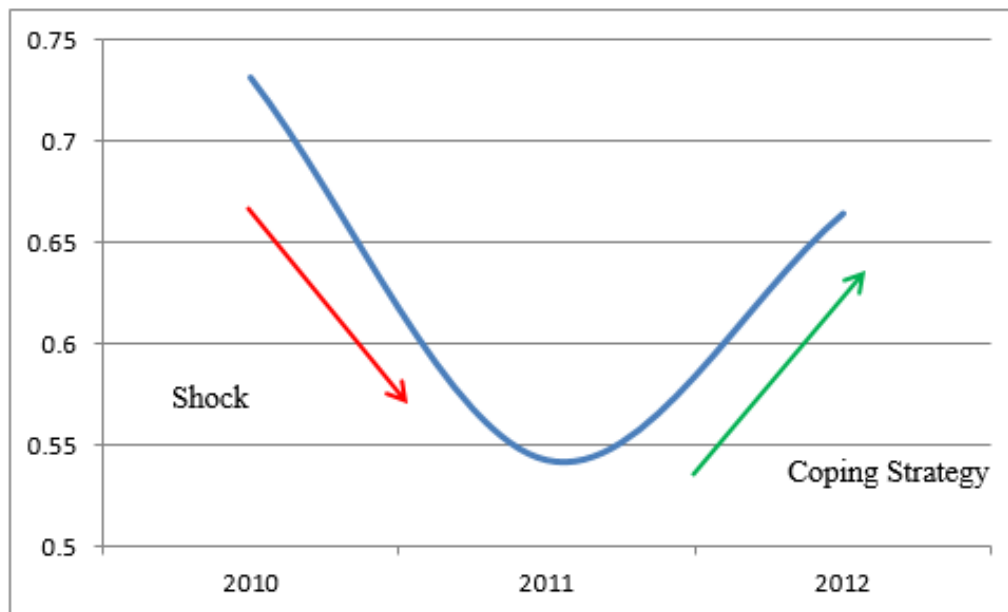


Conflict-related shocks, such as war, murders, political instability and social disorders (*ACLED*, *UCDP/PRIO*, *HIK*), damages (*OCHA*);



Market shocks, such as input/output price fluctuations (*WFP*)



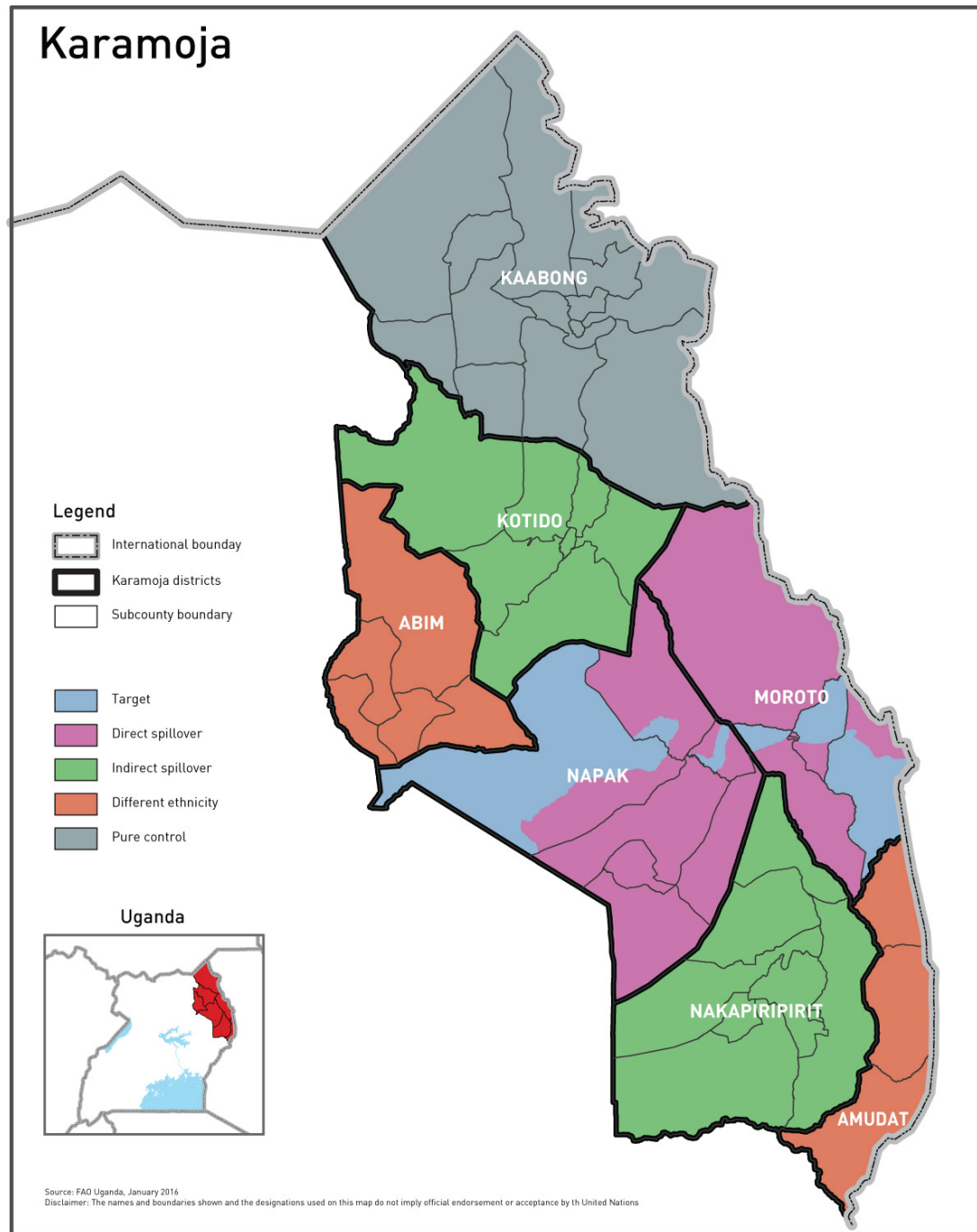


$$Loss_{Simpson} = f(\beta_1 R_i + \beta_2 X_{i,t} + \beta_3 Z_i + \varepsilon)$$

- 1) Resilience measurement
- 2) What is RIMA-II
- 3) Case studies**



Karamoja

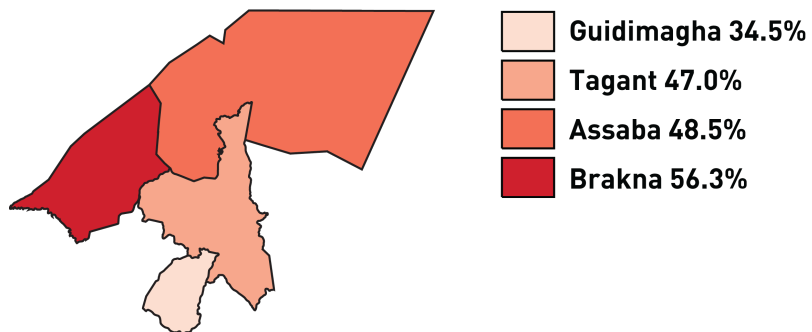


Karamoja, Uganda sampling stratus map

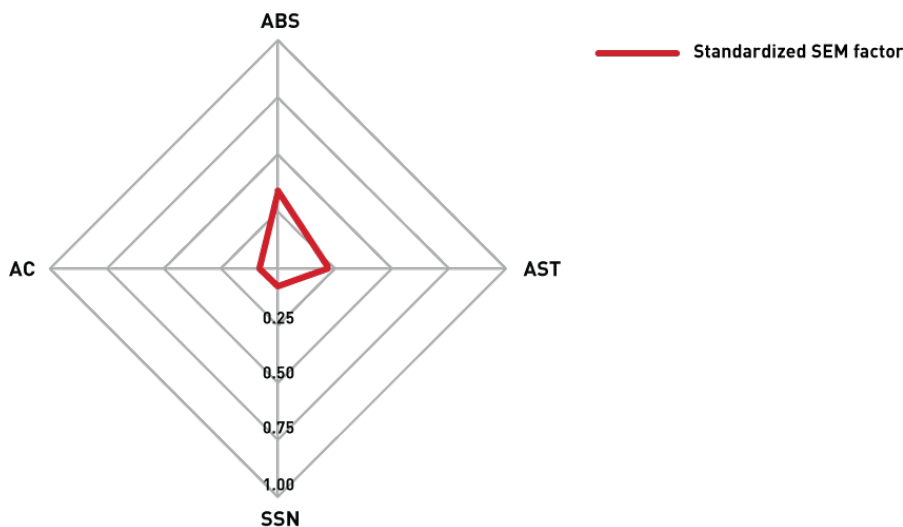
Source: FAO Uganda, January 2014
Disclaimer: The names and boundaries shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

Resilience analysis in the Triangle of Hope (Mauritania)

Resilience index



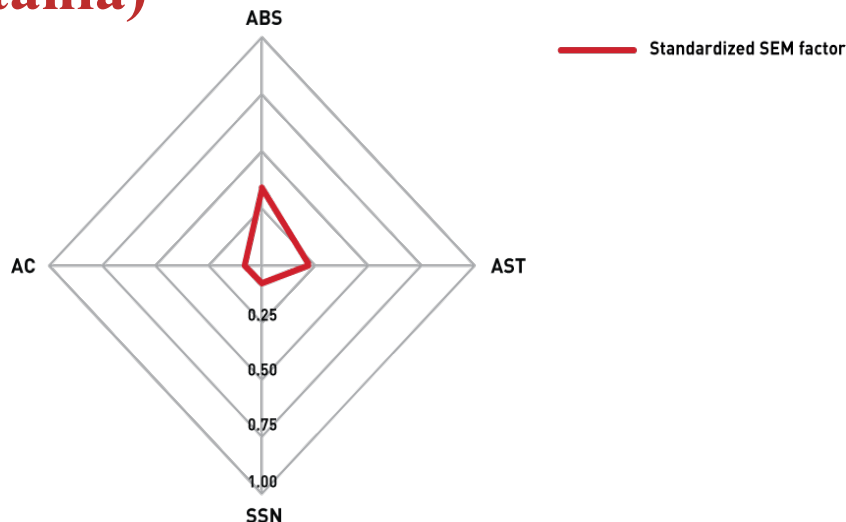
The most important pillars of resilience are Access to Basic Services and Assets (productive and not)



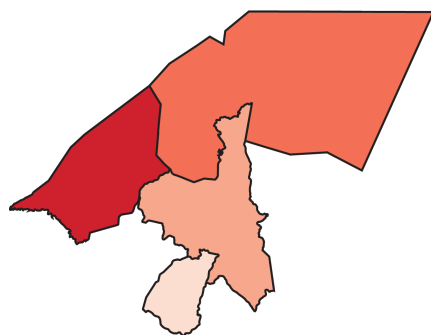
Regional heterogeneity: Brakna is the most resilient region, followed by Assaba and Tagant. Guidimagha is the least resilient one.

Resilience analysis in the Triangle of Hope (Mauritania)

The most important pillars of resilience in the Triangle of Hope are Access to Basic Services and Assets (productive and non-productive).



Resilience index

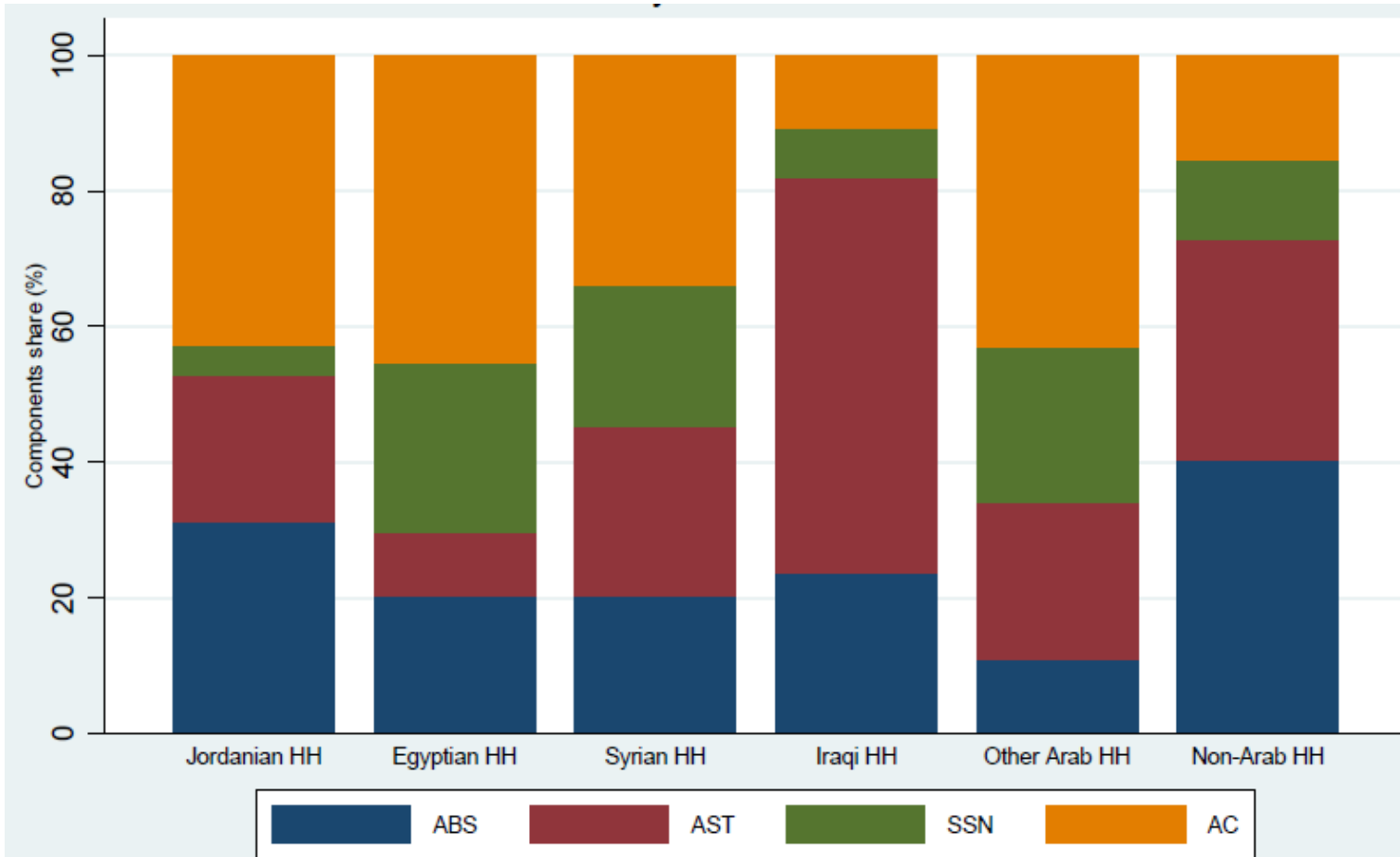


Guidimagha	34.5%
Tagant	47.0%
Assaba	48.5%
Brakna	56.3%

Regional heterogeneity:

Brakna is the most resilient region, likely owing to better infrastructure and access to markets and schools, which contribute to higher education levels and more income-generating activities. **Guidimagha** is the least resilient region and has limited access to services and adaptive capacity

Share of components (pillars): nationality

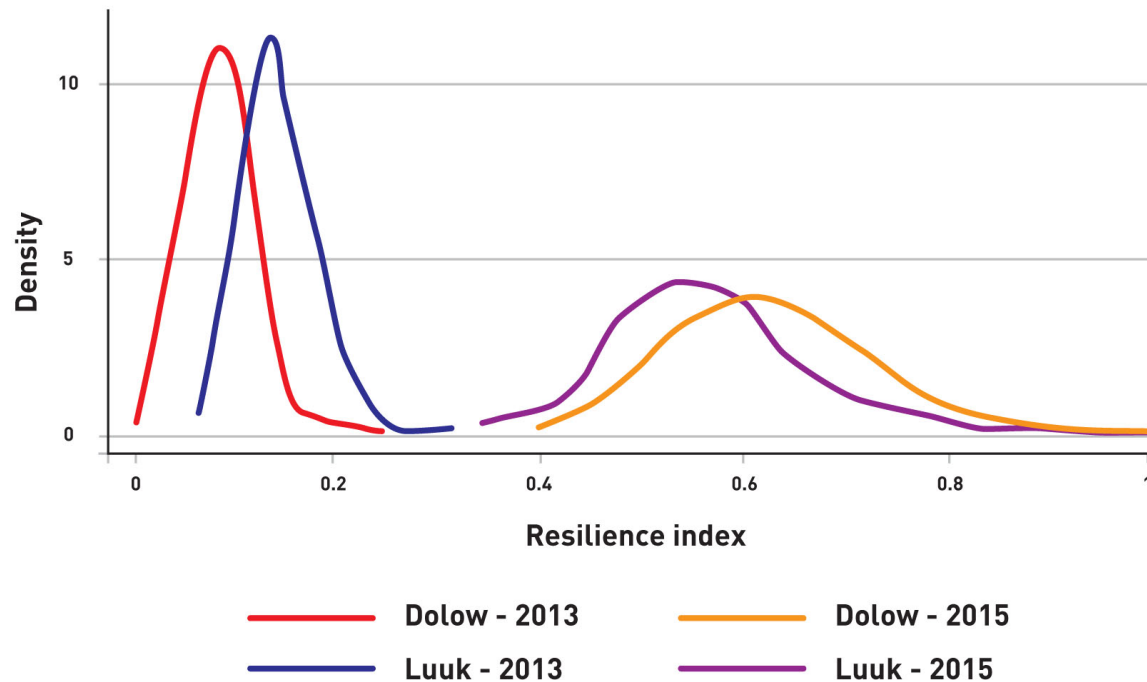


Source: Authors' own calculation, based on HEIS (2013)



Impact evaluation in Dolow (Somalia)

- An Impact evaluation in **Dolow, Somalia**, is being implemented in the framework of the Joint Resilience Strategy programme launched in 2012 by FAO, UNICEF and WFP.
- It is based on a **baseline and a mid-term datasets**.
- Results show **an increase in resilience capacity (23%)**, obtained through a positive impact on agricultural production, income deriving from livestock, transfers, diversification of income sources and access to infrastructure.



Kernel = Epanechnikov, bandwidth = 0.0091



THANK YOU!

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