

Protecting livestock herders from the impact of drought: the Index-Based Livestock Insurance (IBLI) program

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OUTLINE



- Motivation: Why Index-Based Livestock Insurance (IBLI)
- IBLI contract design
- Toward new product generation
- Conclusions & considerations





MOTIVATION: WHY IBLI




LIVESTOCK & LIVELIHOODS


- ❑ Over 50 million pastoralists in Sub-Saharan Africa;
- ❑ Over 20 million in the Horn of Africa. Exports of livestock and livestock products exceed \$1 billion annually.
- ❑ In the region, estimated contribution of the livestock economy at 40%

➤ Pastoral populations of Sub-Saharan Africa are particularly vulnerable to environmental shocks, which contribute to livestock mortality and therefore losses in both wealth and productive assets.



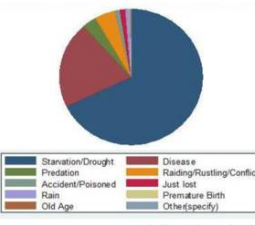
MOTIVATION: WHY IBLI



DROUGHT - A MAJOR RISK


- Catastrophic herd loss due to drought identified as the major source of vulnerability and cause of poverty. **75%** of livestock losses, among pastoralists, due to **drought**.
- Strong evidence of asset-based poverty trap dynamics.

Causes of Livestock Mortality
Marsabit, Kenya, 2009-2012



Source: Jensen et al. (2014)

Areas of food shortages



Source: UN World Food Programme

12 million people in need of humanitarian assistance


750,000 at risk of death in Somalia

Food insecure populations
Ethiopia 4.6 million
Somalia 4.0 million
Kenya 3.5 million
Djibouti 0.12 million


Source: FAO, 2014

STANDARD RESPONSES TO DROUGHT ARE COSTLY & INSUFFICIENT

- Destocking/Restocking – slow, expensive, targeting challenges, inefficiency.
- Food aid – slow, expensive, targeting challenges, foster dependency.
- Cash aid – targeting challenges, fiscal sustainability, not equally effective for all.




MOTIVATION: WHY IBLI



Sustainable insurance can:


- Prevent downward slide of vulnerable populations
- Allows focus humanitarian resources on the needy
- Crowd-in investments

But can insurance be sustainably offered in the pastoral context?




Conventional insurance unlikely to work :

- Very high transactions costs, esp. w/little financial intermediation among pastoralists
- Moral hazard/adverse selection




INDEX-BASED LIVESTOCK INSURANCE

- Independent "index" strongly correlated with drought/forage scarcity/livestock losses. No claims.
- Better suited to the pastoral production system and risk profile



IBLI PROGRAM PILLARS



Program launched in 2008 to offer a timely, sustainable, safety net against catastrophic drought shocks on pastoralists.

Program pillars & sustainability

SCIENTIFIC COMPONENT


- Satellite-based indicators of drought.
- Risk modelling & Contract Design.
- Technological solutions

Low basis risk

IMPLEMENTATION COMPONENT

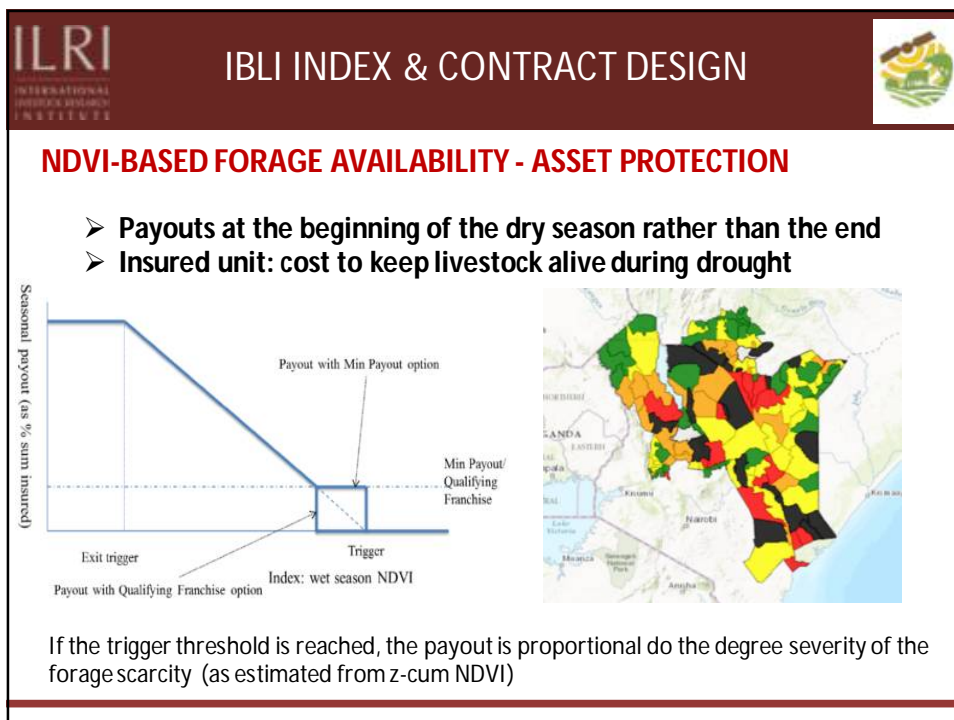
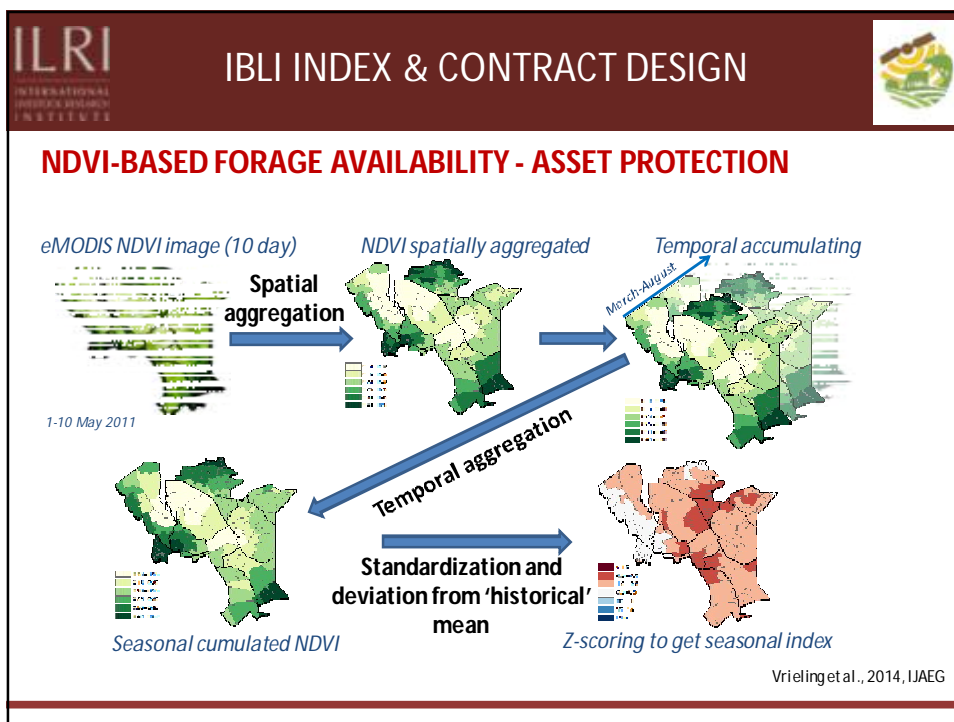
- Market and capacity dev.
- Policy and institutional dev.
- Efficient delivery and extension services.

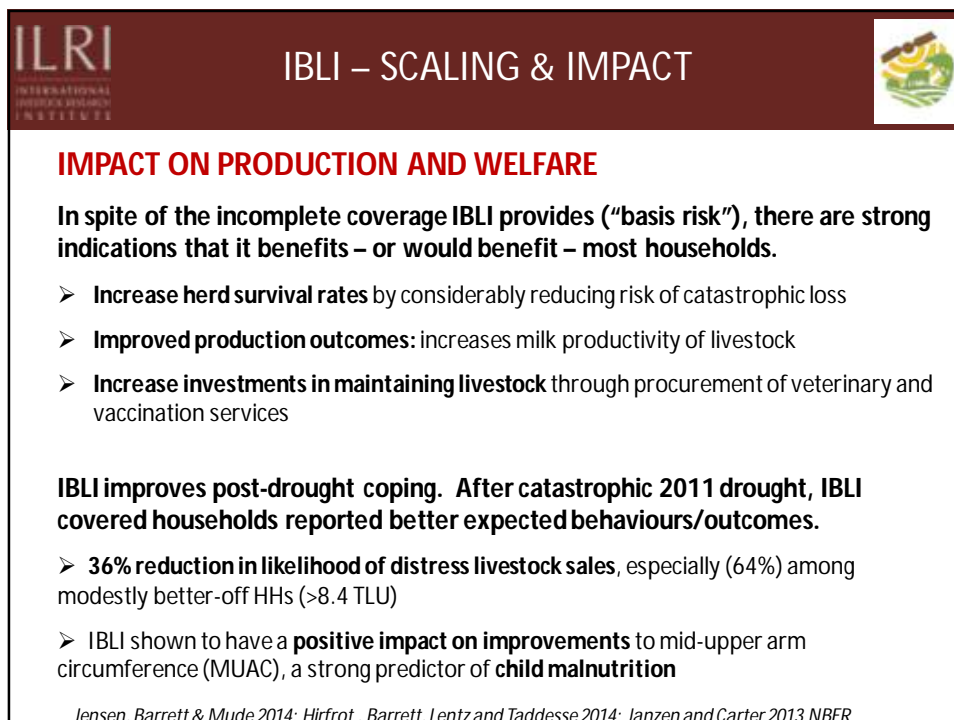
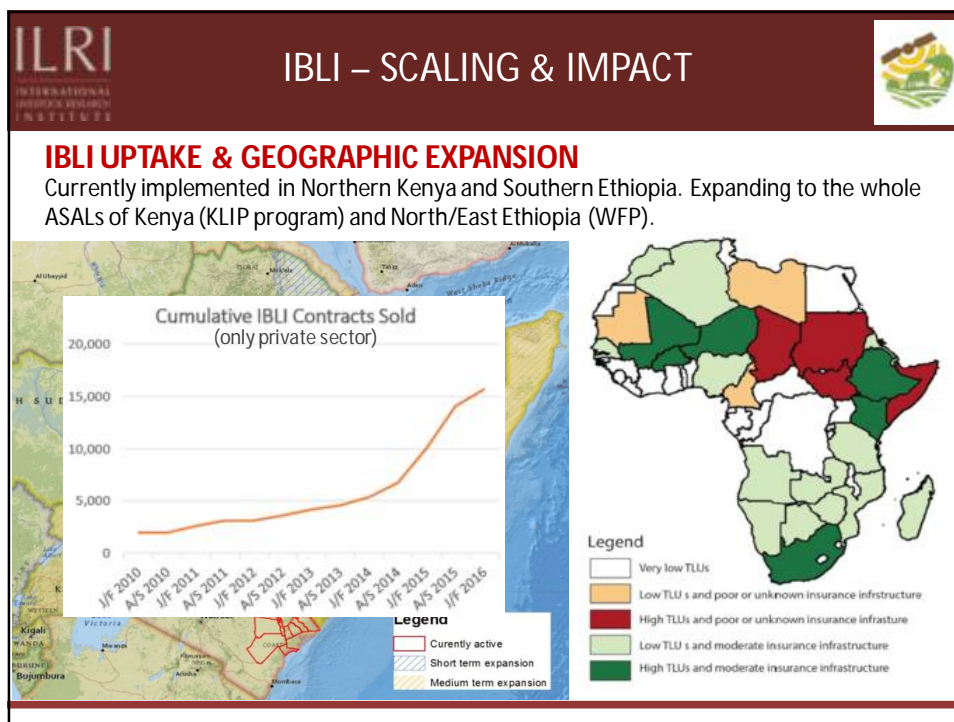
Informed and effective demand




MONITORING & EVALUATION


Evidence of value and impact



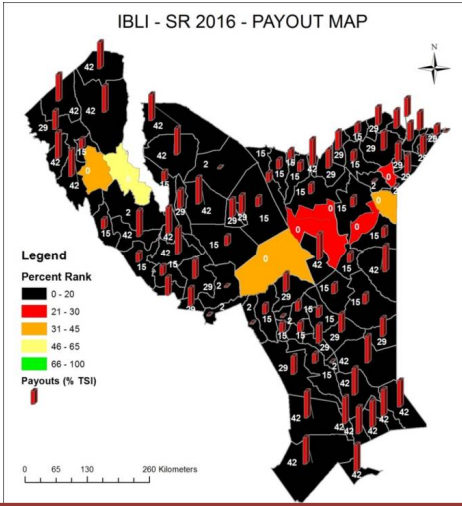




IBLI – SCALING & IMPACT



SHORT RAINS 2016 - MAJOR DROUGHT IN THE HORN OF AFRICA




Legend

Percent Rank


- 0 - 20
- 21 - 30
- 31 - 45
- 46 - 65
- 66 - 100

Payouts (% TSI)




Sh215m insurance payout offers relief to drought-hit pastoralists

Over 2 million USD payouts distributed to about 15000 pastoralists

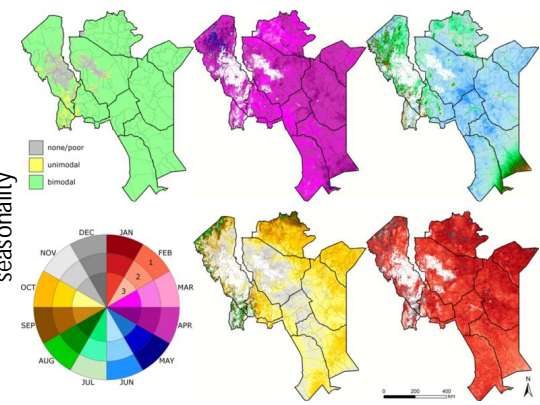


TOWARD NEW PRODUCT GENERATION



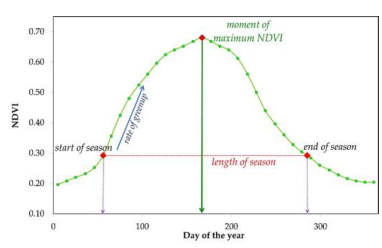
INDEX IMPROVEMENT - TEMPORAL AGGREGATION

✓ **Is the definition of growing season stable across space and time?**
 Use of NDVI-based phenological analysis to improve season definition.



seasonality

- none/poor
- unimodal
- bimodal



Adapted version as described in: Meroni M, MM Verstraete, F Rembold, F Urbano, and F Kayitakire. 2014. A phenology-based method to derive biomass production anomaly for food security monitoring in the Horn of Africa. *International Journal of Remote Sensing*, 35: 2472-2492.

Vrieling et al., 2016, RSE