

The role of Agricultural Insurance in Disaster Risk Reduction and Resilience (Practical Experience from Ethiopia)

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JANUARY 15,2015

Outlines:-

1. Introduction
2. Weather Index Crop Insurance
3. Index Based Livestock Insurance
4. Geodata for Innovative Agricultural Credit Insurance Scheme

- Nearly 90% of disasters caused by natural hazards are linked to weather, water and climate related extremes.
- Over the period of 1980-2010 the total economic losses due to natural hazards amounted to US\$2,500 billion of which only US\$ 600 billion insured (WB-2010 values).
- An estimated 1.02 billion people are hungry in the world, of which 265 million are in sub-Saharan Africa.
- Rural livelihoods, which in many regions of Sub-Saharan Africa are based on subsistence farming are vulnerable to various risks and shocks such as drought, pest and diseases, human illness and market constraints.
- A single drought may threaten the lives of large number of farmers and their livelihood (Tachiiri et al., 2008).

- The term *resilience* can be traced to two major issues:
 1. The climate change, concerned with how to build resilient communities in the face of increasingly extreme weather events.
 2. Recurrent humanitarian crises, especially traced to the most recent drought- and conflict-induced 2011 disaster in the Horn of Africa in which Ethiopia alone lost US\$85 million from one zone (Borana Zone) due to over 300,000 livestock mortality. *(July 2011 regional Gov't report)*

This is to summarize the three a resilience enhancement Microinsurance projects in Ethiopia :

1. Weather Index Crop Insurance(WICI)

Rural Resilience Enhancement Project (RREP) JICA (Japan International Cooperation Agency) Funded project

- This is a Weather Index Crop Insurance project that is totally satellite rainfall based and covered thousands of farmers.
- This year it paid the insured farmers due to crop losses as a result of rainfall deficits.

RREP WII PREMIUM & PAYOUT

Premium:	Payout in good rainfall season:	Payout in drought years triggered by index:	
		Minimum payout:	Maximum payout:
100 Birr (Minimum)	0 Birr	100 Birr	500 Birr
200 Birr	0 Birr	200 Birr	1,000 Birr
300 Birr	0 Birr	300 Birr	1,500 Birr
400 Birr	0 Birr	400 Birr	2,000 Birr
500 Birr	0 Birr	500 Birr	2,500 Birr

- ## Awareness Creation



Registration



HOW THE WEATHER INDEX WORKS

**Payout
(Birr)**

Payouts are determined by a pre-defined rainfall amount (INDEX) rather than actual measurement of damage on farmers' harvests.

1. Trigger= Point Which Payout Begins.
2. Exit=Point Maximum Payout is Made.

Max
Payout

Full Payout

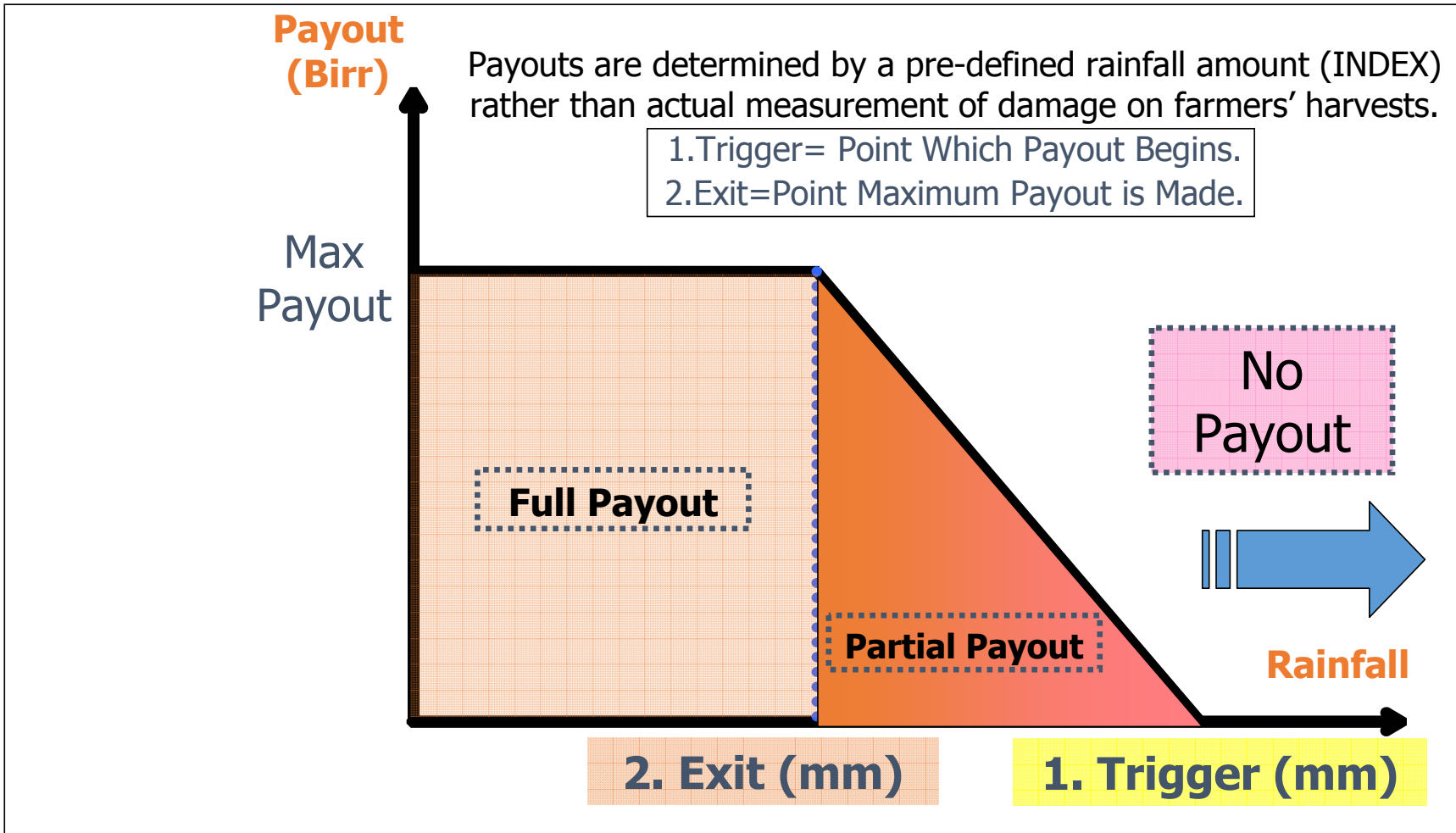
Partial Payout

**No
Payout**

Rainfall

2. Exit (mm)

1. Trigger (mm)



Rainfall Deficit 2014



Challenges

- **Basis Risk**

Payout per satellite =ETB 107,224.70

Payout per Assessment =ETB 773,250.00

Gross Claim Ratio=134.34% (2014)

Summary of WICI – JICA Project for two Years

F/Year	Kebeles	HHs	Premium (ETB)	Payout (ETB)
2012/13	15	1,286	146,350.00	No
2013/14	45	5,623	575,600.00	773,250.00
Total	60	6,908	721,950.00	773,250.00

Basis of Indemnity : Weather Index Crop Insurance

- After the Exit , Trigger and Cap are determined the payout can be calculated as follows if contract is triggered:

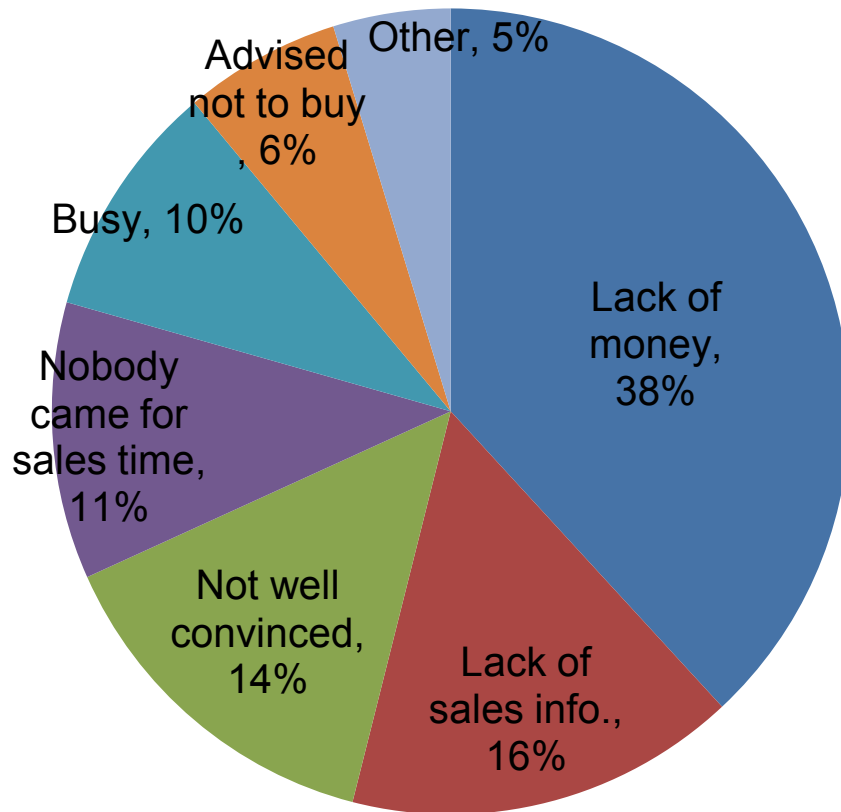
$$\text{Payout Rate} = \frac{\text{Trigger} - \text{Actual Rain Fall}}{100\%} *$$

$$\text{Trigger} - \text{Exit}$$

$$\text{Total Payout} = \text{Payout Rate} * \text{Total Sum Insured}$$

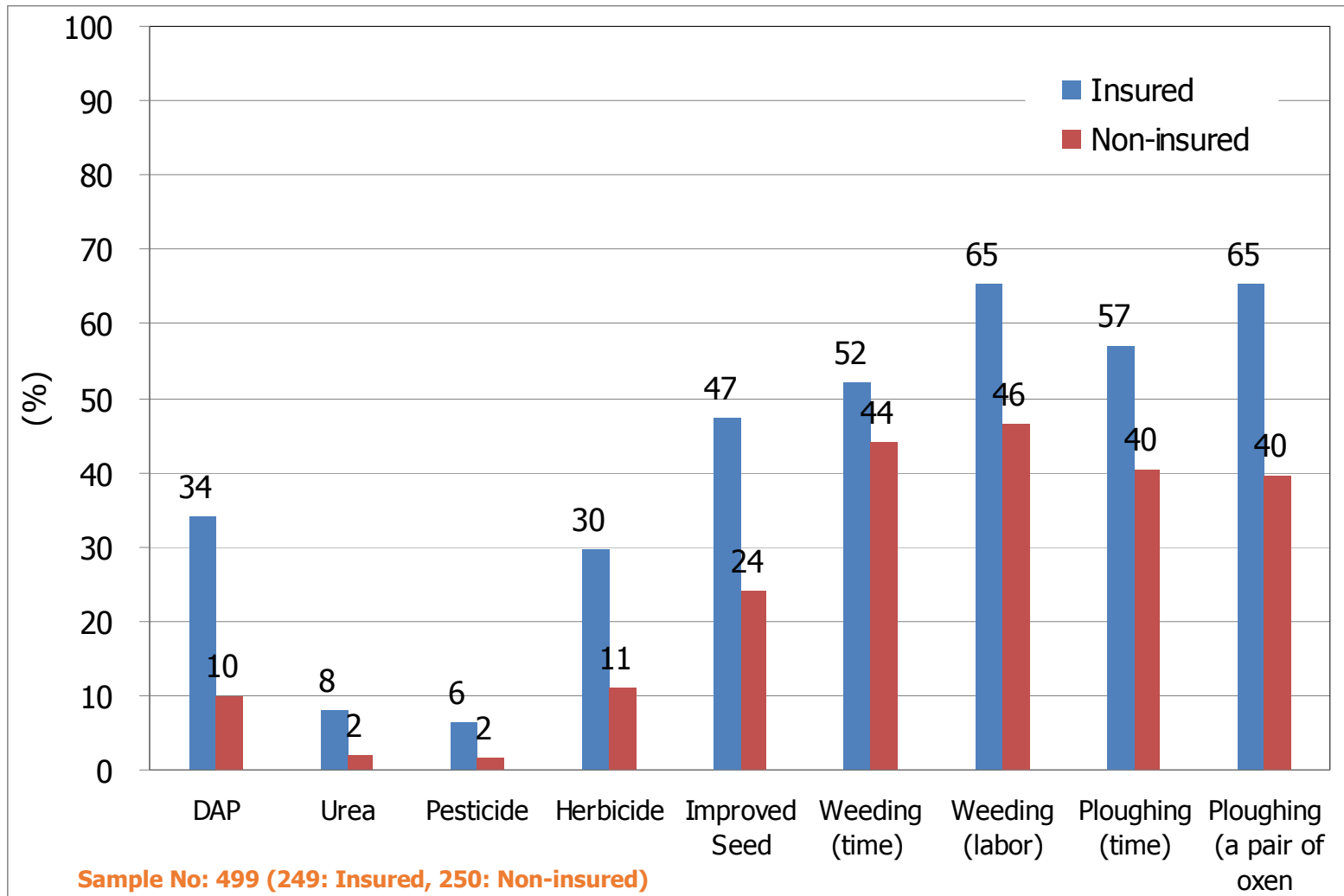
- There will not be payout , if Payout rate ≤ 0
- If Actual Rainfall \leq Exit, the payout will be maximum.

Willingness to buy WII : Reasons Why Did "Not" Buy Wii



- ◆ I wanted to buy it, but I did not have money at the sales time !
- ◆ I wanted to buy it, but I did not know the details on the sales !
 - ◆ I was not so convinced the importance of WII as to buy it !

Behavior Changes after Insurance



ACHIEVEMENT OF 2014 SEASON

	2013 Season (Phase1)	2014 Season (Phase2)
Target Kebele	15	45
Farm HH No.	1,286	5,623
Take up Rate	10% of Farm HH	20% of Farm HH
Sum-Insured	146,350 birr	575,600 birr
Premium / HH	114 birr	102 Birr
Payout (Planting)	0%	21% (1,182 HH in 8 Kebeles)
Payout (Flowering)	0%	0%

2. Index Based Livestock Insurance (IBLI) (Launched in 2012)



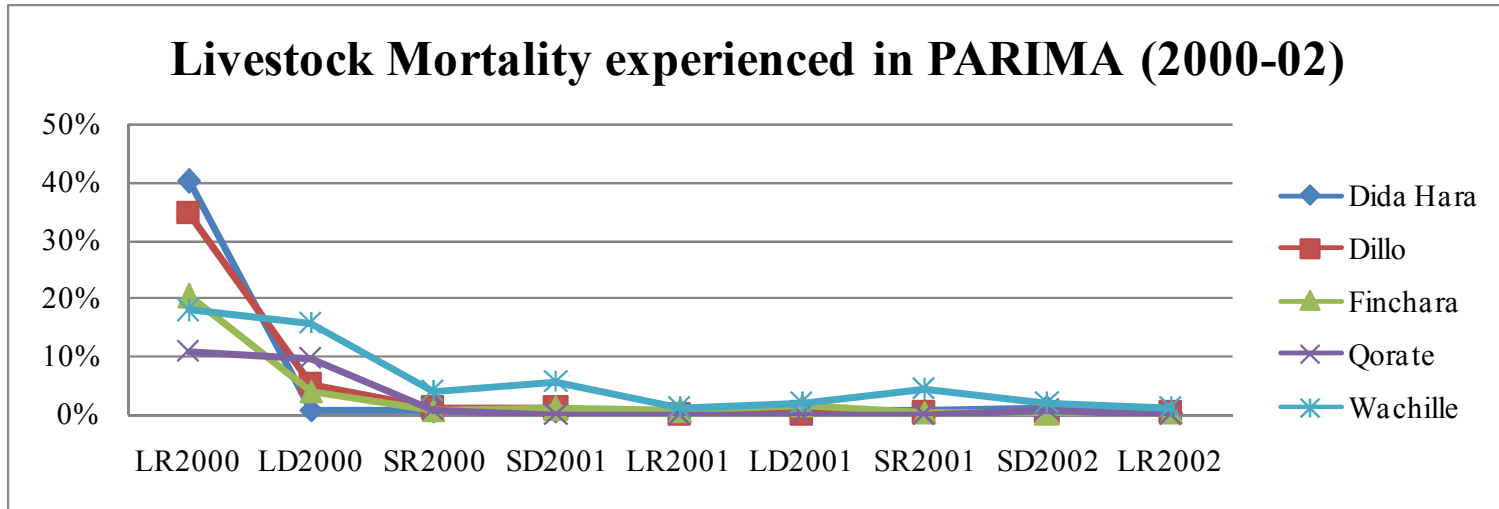
INDEX BASED LIVESTOCK INSURANCE (IBLI)---Drought Insurance

INSURED PERIL:-

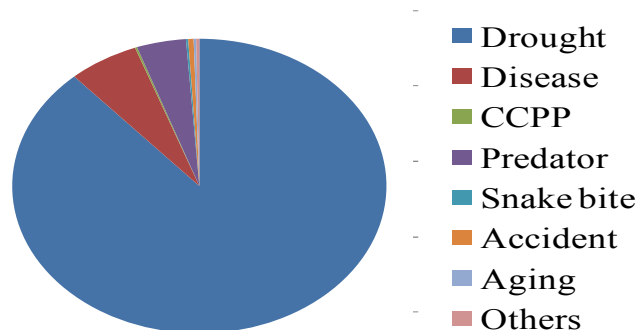
- Forage availability measured from satellite as NDVI (Normalized Differenced Vegetation Index)
- The policy doesn't cover livestock mortality but deviation of forage availability from what is called normal for the past 30 years.

Why Drought Insurance is very important for Pastoralists

Drought is a major Risk



PARIMA (2000-02)



BASIC FEATURES OF THE IBLI CONTRACT

Coverage Period:

It covers for 1 year with 2 seasons:

1. March-September(covering 7 months)...sold in January & February
2. October-February (covering 5 months)....sold in August &September

Livestock covered and Insured Herd Value[IHV]

The Insured livestock are predetermined to have the following values per unit:

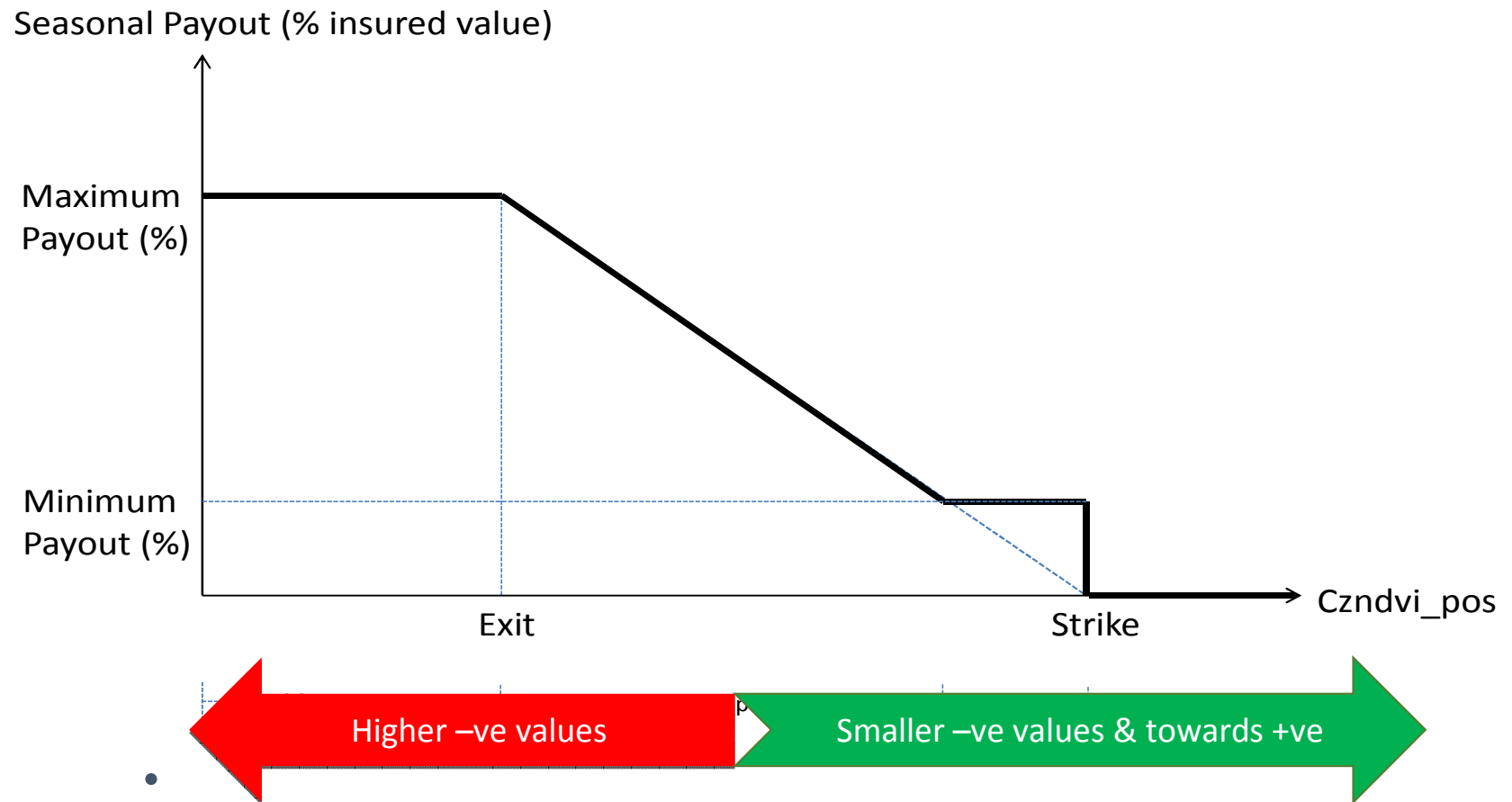
- 1 Camel = ETB 10,000
- 1 Sheep = ETB 800
- 1 Cattle = ETB 6,000
- 1 Goat = ETB 800

Annual Fair Premium Rate

PREMIUM RATE = 7.02 % - 11.05%

Total premium = Annual Premium rate x TIHV

Graphical presentation of the payout function



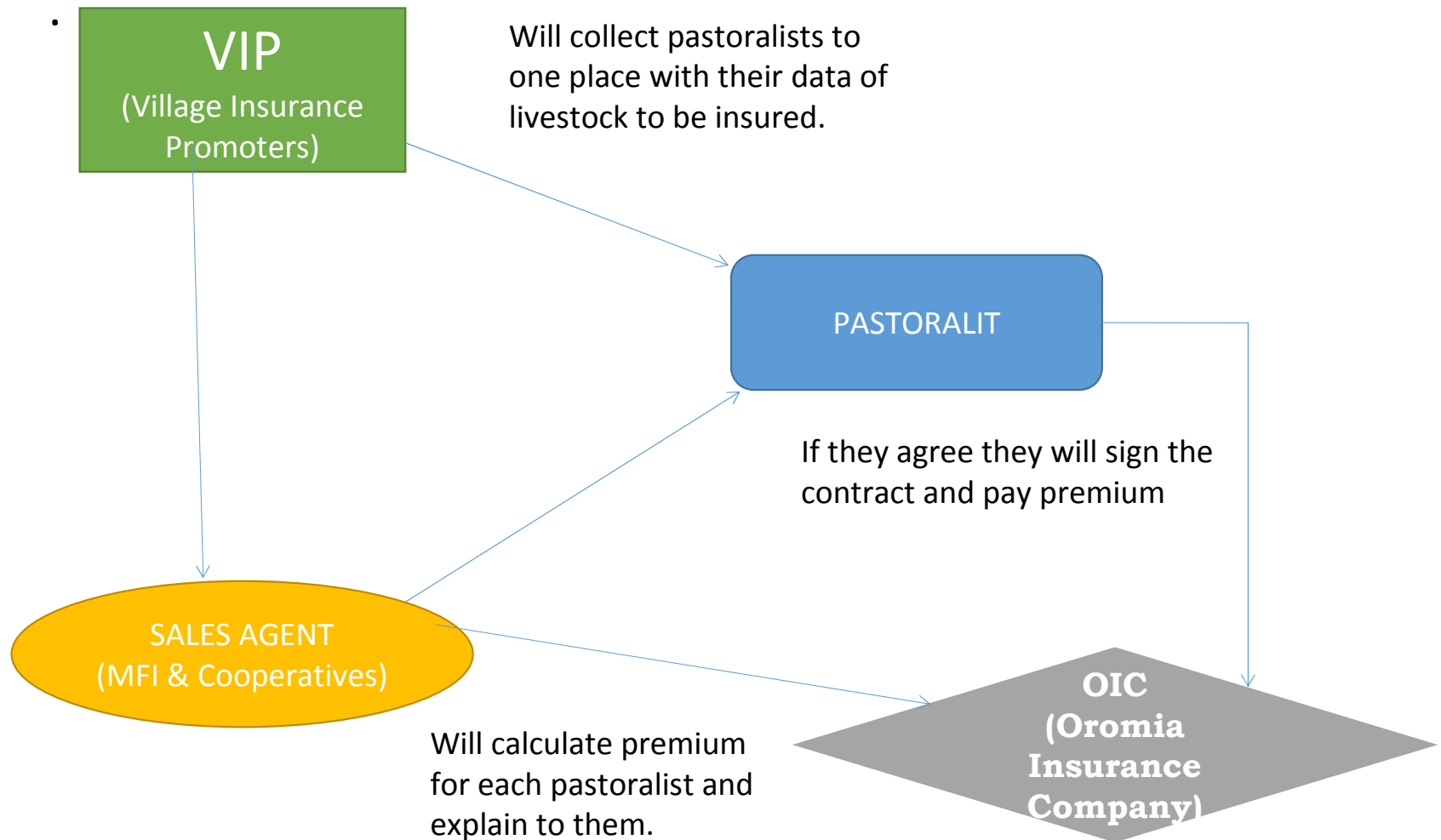
Payout Calculation

- If contract is triggered (CZNDVI < Strike level):

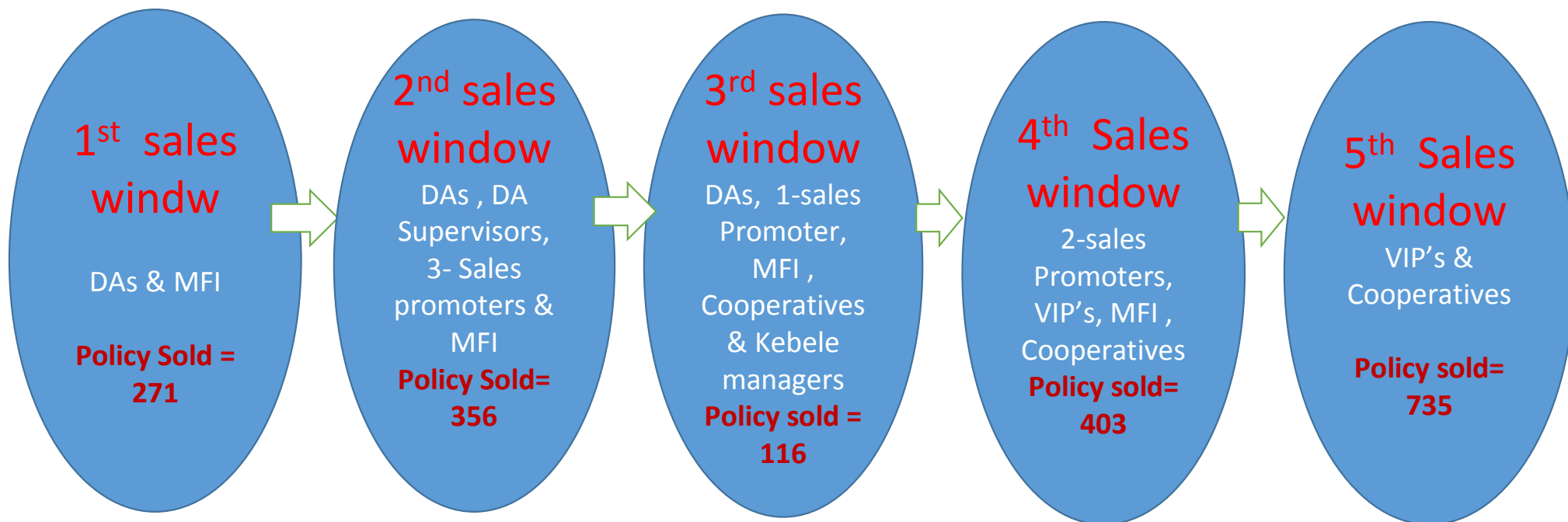
$$\text{Payout} = \left[\frac{\text{strike} - \text{czndvi}_{\text{pos}}}{\text{strike} - \text{Exit}} \right] \text{Maxpayout rate, Minpayout rate} \times \text{Value Insured}$$

- Payout shall be made every October and March if contract is triggered.

IBLI SALES STRATEGY.



Modifications made to IBLI delivery Channels



N.B: DA-Development Agent, VIP-Village Insurance Promoter, MFI- Microfinance Institution

Village Insurance Promoters(VIP) Training



6/2/2015



Incentives for VIPs

Performance Based Pay Structure Village Insurance Promoters(VIPs)				
	August/January	September/February	Total	Weight
Minimum Policies to be sold (x)	10	10	20	40%
Minimum Sum Insured (y)	18,400	18,400	36,800	60%
Pay in ETB	700	700	1,400	100%
Plus from cooperatives' ...				
Commission from premium	3%	3%	3%	

$$\text{VIP's Incentive} = \frac{25760x + 21y}{920} \quad ,x \leq 20, y \leq 36,800$$

IBLI POLICY HOLDER PASTORALISTS WITH CERTIFICATE AND RECEIPT ON HAND



During drought...what Goats are doing...



Drought 2014 – Borana (Pastoralist Area)



Payout Paid on November 1, 2014 by OROMIA INSURANCE COMPANY (Private) = ETB 569,887.00

Purpose of Initiative

- Development of Microinsurance product that can be scalable at low cost and that provides a risk mitigation package to the farming community.
- To offer basic safety net to protect farmers against weather related perils.
- In combination with weather information services, the insured credit package to avail through improved delivery channels.

The credit taken is insured (NOT the yields!!), based on the 'condition of the growing season'

- Offers a geodata-driven risk-mitigation (insurance) product
- Targets smallholder farmers in Ethiopia (**80% < 0.5ha**)
- Aims to boost purchase of agricultural inputs
- Protects farmers against shocks caused by weather related perils
- Uses branchless banking technology
- Makes the insured credit package (bundled) locally available
- Is aligned to the rural finance strategy (RFS) program, managed by Agricultural Transformation Agency(public)

Summary

Uninsured Risk: the Cause for Poverty Trap

- ❖ In the absence of formal insurance, households manages risks through different costly strategies that can have permanent consequences
 - Forego risky but profitable livelihood strategies → Households tend to settle for low return for fear of risk
 - Reduced meal intake → stunting, wasting & cognitive effect
 - If asset holding reduces below certain threshold, asset accumulation will be exacerbated
- ⇒ all can make households permanently trapped in poverty

Role of Insurance to Break the Cycle of Poverty

- The insured tend to be open to new ideas, tries new ways of production (risk taking)
- A preliminary research result indicates that insured are: (Carter and Janzen 2013)
 - Less probable to use costly coping strategies
 - Less likely to have reduced the number of meals eaten per day & less likely to have relied on other assistance
- If agricultural assets are insured banks will be willing to extend credit to farmers

CONCLUSION

- Credit without insurance is not recommended for low income people
- Utilization of technology e.g. mobile money for premium collection and payout are very important for scale.
- Optimum usage of agricultural inputs for low income is possible when credit plus insurance is provided in bundle.
- Development agents and Donors should focus on highly productive areas to maximize productivity scientifically.
- Farmers operate with full confidence and hope when transfer their risks and then maximize their productivity.

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Thank You!