NATIONAL AGRICULTURE INSURANCE PROGRAM

OVERVIEW OF KENYA CROP INSURANCE PROGRAMME

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Outline

1. Introduction; genesis of agric insurance programme in Kenya
2. Why Kenya Agriculture Insurance programme
3. Public private Sector Model for Agric Insurance
4. Crop Insurance: the Area Yield Index Insurance Programme
5. Achievements; lessons learnt
6. Conclusion

Introduction

Size: 581,309 km2 (224,445 sq million)

Population : about 46 Million

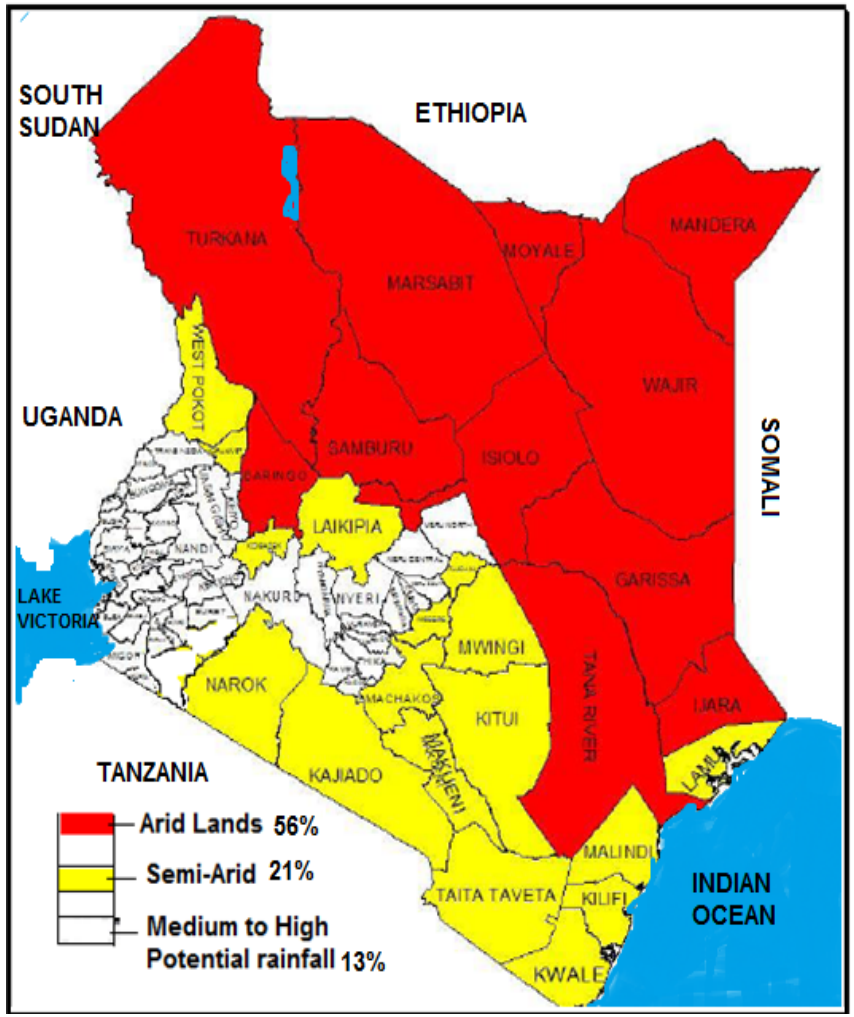
Arid land- 58%

Semi Arid- 21%

Medium-high potential land- 13%

Agriculture- Main source of livelihood; contributes 30% of GDP

Small-holder farmers: 75%



Genesis of Agric Insurance in Kenya

Agricultural producers progressively facing more risks

1. Climate Change Vs rain-fed agric

- Increasing unreliable rainfall, droughts, floods;
- New diseases; new pests

2. Majority smallholder farmers vulnerable to shocks

- Low resilience- Difficulty in bouncing back after a shock

3. Low Agric productivity correlated to low investment in agric: Access to credit and Inputs

- Low credit due to risks in agric

Genesis of Agric Insurance in Kenya

Challenges of sustainable Agric risks Management

- **Since 1970, Kenya has experienced a total of 41 major floods affecting 6.9 million people**
- **Since 1970, 13 major drought events**
- **Between 2008 and 2017: estimated KShs 699 billion in livestock losses and KShs 121 billion in crop losses**
- **Over the past 12 years, the Government of Kenya has spent on average KShs 4.2 billion per year on disaster relief funding**
- **In 2017: Ksh 16 Billion used; Maize floor subsidy: 9 Billion**

Genesis of Agric Insurance in Kenya

Standard response mechanism to agric hazards- not effective

1) **Problems of resource mobilization: budgets re-allocation, disrupted national budgets and plans**
2) **Food aid/Cash Aid to affected population: not sustainable; reinforce dependency syndrome**
3) **Expensive post-drought livestock restocking; livestock feed, crop seeds aid**
4) **Problem of targeting the beneficiaries and managing logistics**

Why Agric Insurance as alternative

Overall Purpose of Agric Insurance: To Reduce impact of risks in Agric

•Build resilience of smallholder farmers: ability to remain in production; bounce back after set-back

•Increase farmers' access to credit, and inputs

• Improve agricultural productivity, transition from subsistence to commercial farming

• Eliminate post disaster response challenges

•Provide social protection to the poor

Options of Insurance

- **Conventional (individual) insurance**
- **Government supported Insurance**

Private Public Partnership Model

• For several years Kenya government investigated options to initiate large-scale agriculture insurance in Kenya

• 2014- 2015: The Gov commissioned the World Bank to undertake **comprehensive *Agriculture Insurance Solutions Appraisal and Policy Review*** for Kenya.

• World Bank: proposed development of large scale **Public-Private Partnerships** (PPPs) arrangement for crops and livestock insurance in Kenya.

- **Livestock Insurance: larger focus on the arid, pastoral regions where livestock is main source of livelihood**
- **Crops insurance programme: Mainly none ASAL counties**

Private Public Partnership Model

Public Private Participation model

- **Issues: How to make insurance, cheap, accessible, sustainable, popular with small scale farmers**

Actors

- **Government: National; county levels**
- **Ministry of agriculture, Insurance Regulation Authority; Kenya Re-insurance company**

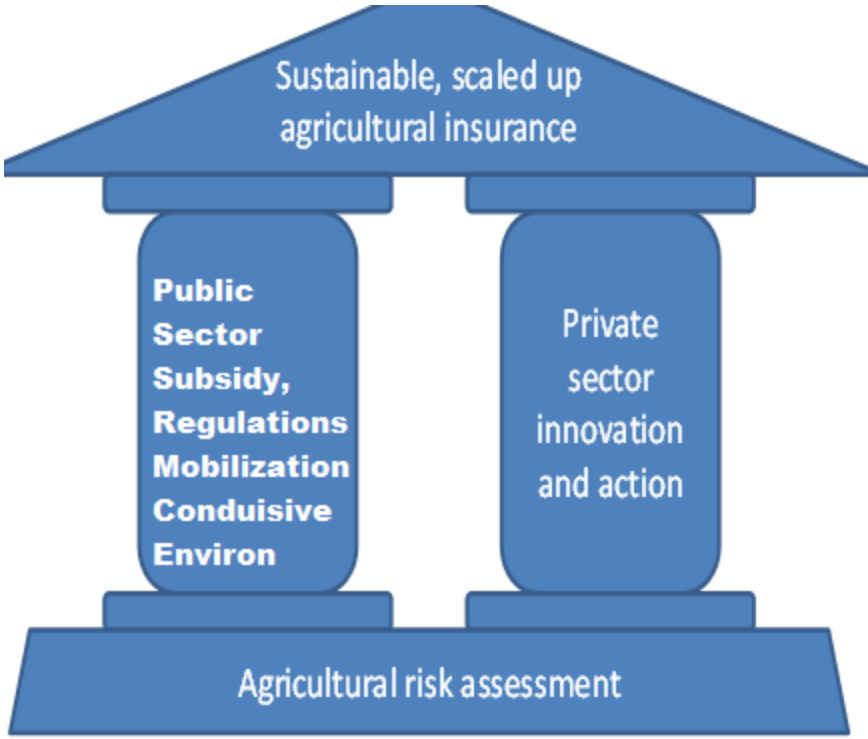
Private Sector

- **Private Insurance companies (52 in Kenya); Financial institutions**
- **Dev Partners: World Bank, WFP**
- **None State Actors: Financial Sector Deepening Kenya, Syngenta EA**
- **Agencies dealing with farmers' aggregation support eg One Acre Fund, etc**

Private Public Partnership Model

Public Private Participation model

- **Govt support: data management, farmers mobilization, capacity development; subsidies, Gov Re-insurance support, policy and regulatory framework**
- **Private Insurance companies: form pool; develop and market insurance products; research/innovations; private re-insurance**
- **Financial institutions: bundle credit lending to insurance**
- **Dev Partners: provide other technical support**



Typical examples:

- India; Mongolia; Spain, United States
- On a global basis, only 7% of transaction volume is purely private

Area Yield Index Insurance (AYII)

- Type of crop insurance proposed by World Bank to Gov of Kenya for up-scaling and direct gov support
- AYII- Insurance of farmers grouped in homogeneous geographical areas/units; farmers in each unit assumed to have near-similar yields of the insured crop
- Historical average yield of the crop in each identified homogeneous area form the index used for developing product (sum assured, premium cost), and lose assessment
- Farmers purchase insurance, pay premium individually. However, sum assured, premium pay and lose assessment/ payouts are determined by the data collected from the homogeneous areas

Area Yield Index Insurance

AYII Process

- Identify the crop and counties to be covered
- Create the homogeneous Unit Areas of Insurance (UAI)
- Gather and clean historical data
- Develop insurance product and set premium cost
- Undertake farmers' awareness creation
- Undertake product underwriting (sale to farmers)
- Undertake crop cutting at end of season to determine actual yields
- Decide on payout or not
- Conclude the season and prepare for next season

AYII-Selection of Crop

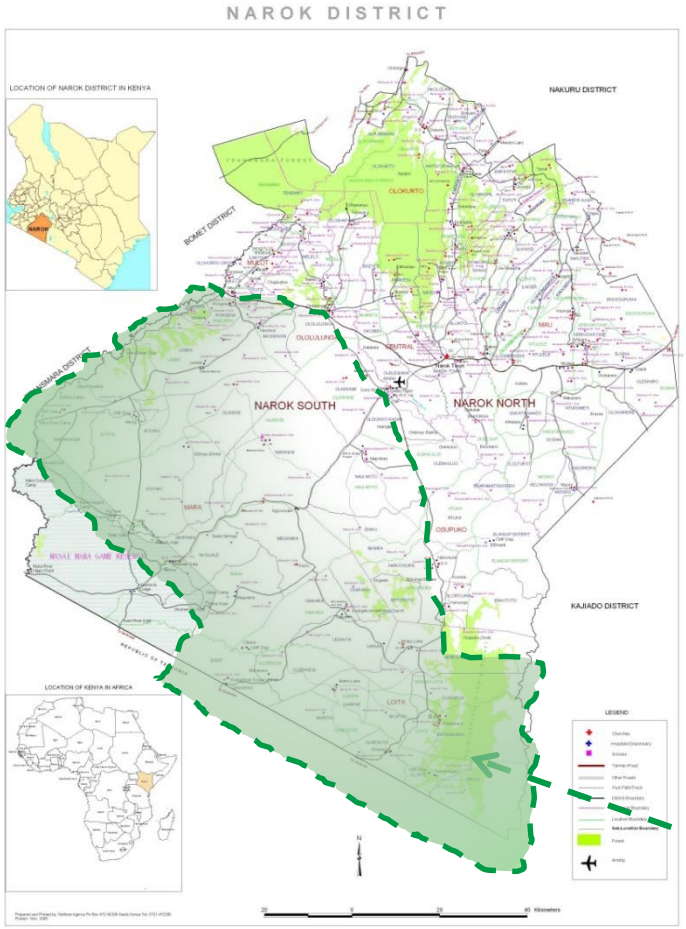
Consideration:

- Practice by many farmers
- Food security
- Contribution to agricultural value addition
- Availability of Data

Note:

1. Choice should be Demand Driven by counties
2. Private insurance allowed to insure other crops under traditional arrangements

AYII-Defining UAI



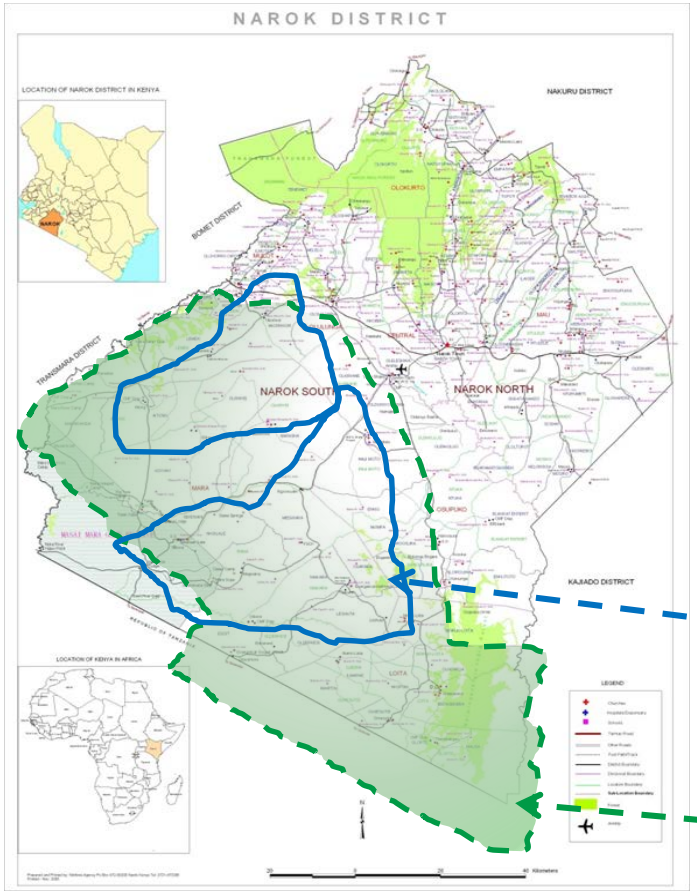
- Factors: agro-ecological zones, soil variations, rainfall patterns, elevation, vegetation, etc
- Local administration boundaries

Example: Narok County

- In the hypothetical administrative area of “Narok South” sub-county as a UAI;
- But how homogeneous is Narok South Sub-county?.

Boundaries of a hypothetical “Narok South” Sub-county

AYII-Definition of UAI….cont



- How homogeneous is Narok South sub-county for a crop eg wheat?
- Or segment to smaller homogeneous areas (Wards, or sub-location)?
- For ease smaller UAI, try to follow existing admin boundaries

Boundaries of hypothetical sub-UAIs

Boundaries of hypothetical "Narok South"

Gather and Clean Historical Yield Data

1. Identify Gov Source of data to lowest admin levels
2. Strive to get 10 years data or more
3. Check data quality; missing data; outliers
4. Draw trend; see whether yields have been steady, increasing or decreasing trend
5. Assess years of low yields and confirm with historical records of regional/national hazards/disasters
6. Undertake measures to ensure data quality and reliability

Gather and Clean Historical Yield Data

Case of Maize crop in Kanduyi sub-county in Bungoma County

i) Long Rains season crop yield higher than Short Rains season crop, why?. Is there need for S.R crop insurance?

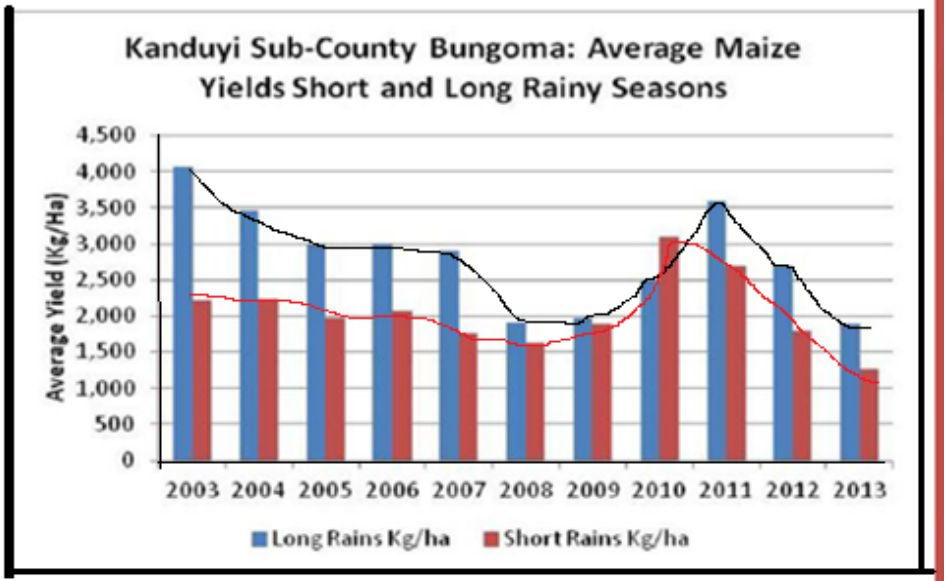
ii) Years 2008, 2009 Low yields- Why? PEV; Drought cases

iii) SR 2010 Yield- probably outlier. What is the problem in 2013?

iv) Yields trend- general decline, but picked up from 2010. Why?

v) Overall; by data trend, how risky is Kanduyi (Determines Insurance cover level and premium cost)

Year	Long Rains Kg/ha	Short Rains Kg/ha	Total Annual Kg/ha
2003	4,078	2,214	3,452
2004	3,465	2,228	3,050
2005	2,977	1,971	2,625
2006	2,993	2,057	2,709
2007	2,898	1,750	2,474
2008	1,910	1,633	1,784
2009	1,962	1,890	1,941
2010	2,489	3,090	2,635
2011	3,600	2,700	3,317
2012	2,700	1,800	2,433
2013	1,890	1,260	1,769
Average	**2,815**	**2,054**	**2,563**
SdDev	723	504	572
COV	26%	25%	22%



Confirm Office Data with farmers

1. Gather farmers, extension officials and opinion leaders in each of the potentially identified Unit Areas of Insurance (homogeneous zones)
2. Ask farmers to confirm the UAIs boundaries
3. Ask farmers in each zone to state their average yields over the last 5 years
4. Ask farmers to indicate years of extremes: very high or very low yields over last 10 years
5. Use farmers' response to adjust UAIs boundaries as well as average historical yields for each UAI

AYII- Developed product

Product Example: Kirinyaga County; Mwea West Sub-county
Maize Long Rains Season 2017; UAI= Unit Area of Insurance

UAI NAME	Ward	Sub-location	Historical Yields (90 Kg bags/ acre)	Insurance Cover Level	Trigger Level (Bags/ Acre)	Ave Maize Price (Ksh/90 Kg)	Total Sum Assured (Ksh) per bag; and per acre	Premium (Ksh) cost	Subsidy GoK (Ksh)	Farmer Pay (Ksh)
UAI-1	Mukure	Kianjang'a	8.25	70%	5.8	2,400	13,920	835	418	418
UAI-2	Mukure	Gitaku	8.25	70%	5.8	2,400	13,920	835	418	418
UAI-3	Kiine	Kithumbu	8	70%	5.6	2,400	13,440	806	403	403
UAI-4	Kiine	Maitharui	8	70%	5.6	2,400	13,440	806	403	403
UAI-5	Kariti	Sagana	9.5	70%	6.7	2,400	16,080	965	482	482
UAI-6	Kariti	Gacharu	10	70%	7	2,400	16,800	1,008	504	504
UAI-7	Kariti	Thigirichi	9.5	70%	6.7	2,400	16,080	965	482	482

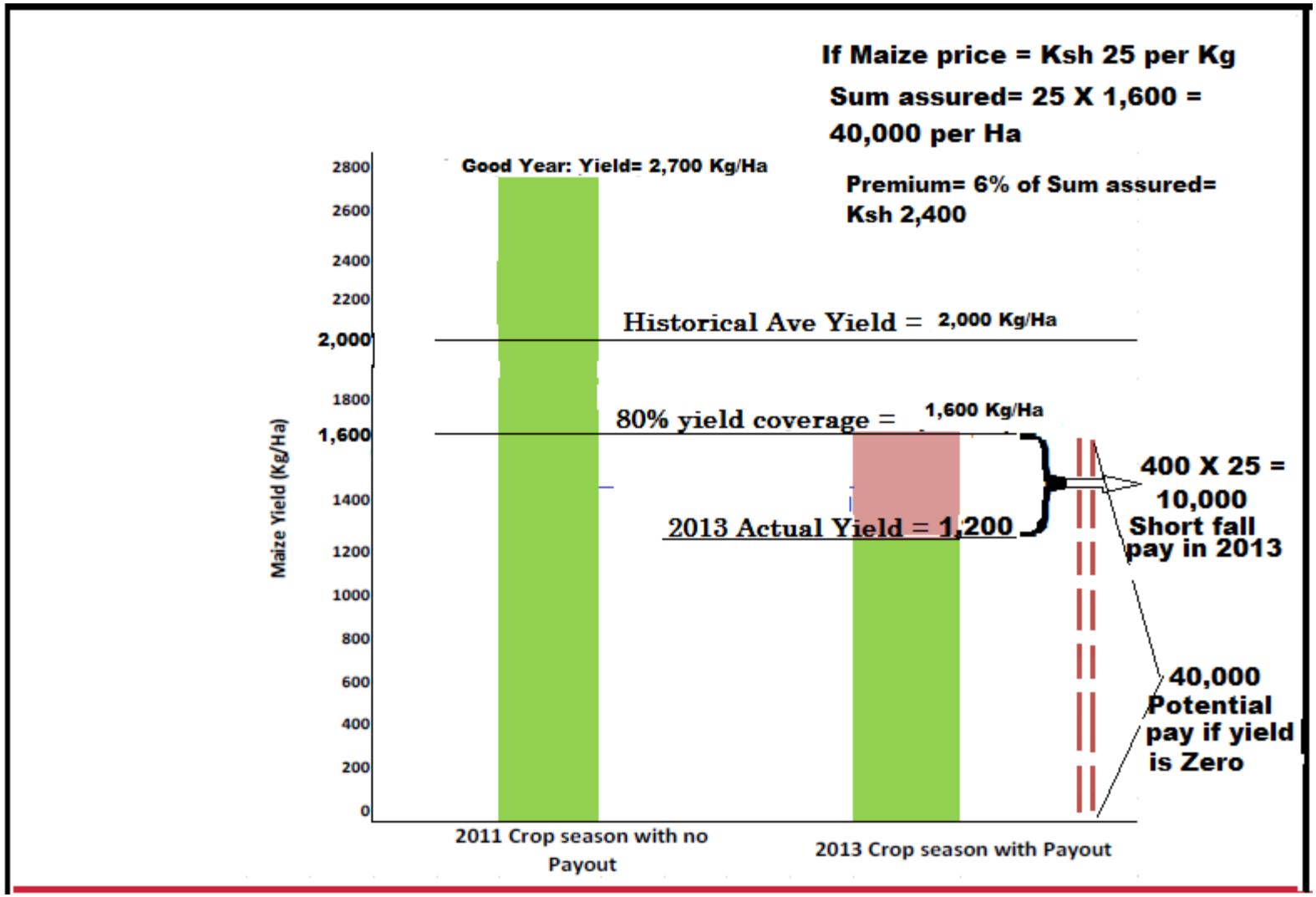
Sale window: Not more than 1 month after planting/sowing week

Loss Assessment

Yield assessment based on Crop Cutting (CC)

- **Who does CC: Government, so far**
- **Purchase of Crop Cutting tools: tape measure, weighing scales, moisture meters, Tablets/ smart phones**
- **Training on crop cutting**
- **Sampling of Farmers' within UAI**
- **Actual crop cutting;**
- **Crop Cutting auditing by select team**
- **Data analysis and actual yield determination;**
- **Payout determination**
- **Results announcement to farmers**
- **Pay- At most 1 month after results announcement**

AYII- Determination of Payouts



SUMMARY OF ROLES

Role of Government

- Political will; Resource mobilization
- Stakeholders coordination
- Identify the crop and counties to be covered
- Create the homogeneous Unit Areas of Insurance (UAI)
- Gather and clean historical data
- Undertake farmers' awareness creation
- Capacity building
- Pay subsidy: Half of premium costs; 0.5 acres to 20 acres
- Loss assessment: undertake crop cutting at end of season to determine actual yields
- Support loss assessment auditing; arbitrations
- Policy, regulations
- Re-insurance

ROLES……CONT

Role of Insurance companies

- Undertake farmers' awareness creation
- Products Development; innovations
- Capacity building
- Undertake product underwriting (sale to farmers)
- Pay farmers where applicable

Advantages of AYII

1) **Multi-peril; covers several risks**
2) **Easy to understand and explain to farmers**
3) **Useful for covering large number of farmers**
4) **Minimal adverse selection or moral hazards: AYII does not depend on individuals; individuals' behavior does not affect the programme adversely**
5) **Cheap administrative costs for insurance companies**
6) **Cheaper premium compared to others**

Disadvantages of AYII

Prone to Basis Risk-Defined as the potential paying farmer who does not deserve pay; or not paying one who deserves pay within the insured area.

Sources of Basis risk under AYII:

1) **Localized perils** (e.g. hailstones, wildlife or flooding by a nearby river), that do not impact on the UAI average yield;
2) **Creation of Non homogeneous UAIs; inaccurate data**

Ways to reduce Basis Risk more costly:

1) **Proper identification of the homogeneous producing zones(UAIs)**
2) **Improving data accuracy and reliability**

Achievements

1) No of crops covered: Maize; moving to other crops soon
2) Year 1: Counties= 3; insured farmers= 900;

Year 2= 10 Counties covered; over 230,000 farmers

Year 3: 20 counties; 313,000 farmers (Agg-303,000; traditional AYII-7,500; Banks-2,500)

Target: 5 Million farmers by 2020

3) Estimated Gov annual budget: Ksh 350 Million; to scale to 2.2 Billion in next 4 years

4) Development of ICT based data management system

Overall Challenges

- Few Insurance companies interested; low capacity for mass sale of product; insurance companies mainly in major towns not rural areas
- Insurance companies avoiding drier/risky counties
- No local re-insurance company supporting agric insurance
- Little competition; low product diversification and options
- Slow, late payments to farmers
- Farmers' little understanding or index insurance; need more education; poor history from weather index insurance
- High cost of managing AYII-data collection; creation of homogeneous zones; lose assessment via crop cutting
- Insurance regulation: weak on AYII; Agric insurance under "Miscellaneous", lack of policy on agric insurance

Lessons for Improvement

- Continue to improve on AYII product design to improve reliability and farmers' interests
- Working with farmer aggregators eg cooperative societies; 1 acre fund; bundling crop insurance with provision of inputs to get more numbers
- Bringing on board Banks; bundling insurance with agric credit
- Bundling Agric Insurance with Gov inputs subsidy programmes
- Work on Policy and regulatory framework
- Working with counties to increase subsidy funding
- Need for National Re-insurance company eg Kenya Re-insurance company
- Need for Gov protection of local insurance companies in the short run- taxes, tender awards,
- Need for opening up to competitions in the long run
- Calling on other re-insurance companies (currently SWISS Re)
- Compel insurance Co to take both risky and less risky counties- Aggregating counties; combining Risky with less risky counties
- Use of ICT and modern technology to improve efficiency; reduce cost
- Introduction of Agric Insurance at University training curriculum

Lessons

Increase use of ICT

- **To Minimize manual data collection, reports,**
- **Improve accuracy of data analysis**
- **Improve timeliness of payouts**

Conclusion

1) Agriculture insurance has huge potential in Africa; big business for insurance companies
2) It takes time to scale up and need for strong government support
3) Need to encourage local insurance companies at initial stages
4) Need to improve policy and legal framework to support agriculture insurance
5) Timely payment to farmers; reducing cost of insurance to farmers
6) Promotion of Weather Index for Hort Crops- due to difficulties of crop cutting as done for cereals

The End……

THANK YOU