



Transforming Smallholder Agriculture in Kenya in the Context of Climate Change, Devolution & Increasing Land Constraints

Conference Overview and Objectives

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Introduction & Objectives

- The contribution of the agricultural sector to overall economic growth and food security in Kenya cannot be overemphasized

- The sector is a key driver of economic growth
 - Economic pillar of the Kenya Vision 2030.

- Currently, the sector contributes about 27% of the Gross Domestic Product (GDP) (Economic survey, 2015)

Introduction Cont....

- About 80% of the farmers in the country are smallholders
 - About 75% of agricultural production is by smallholder farmers
- However, these farmers face multiple challenges that affect their production, including;
 - Climate change and variability
 - Increasing land constraints
 - Limited access & high costs of key inputs
 - Poor access to agricultural information and other services
- Changing service delivery structure occasioned by devolution
- Tegemeo continues to conduct research to address these challenges and provide evidence-based options/ inform policy formulation

Introduction Cont....

- Tegemeo Institute
 - Policy research institute under the Division of Research and Extension of Egerton University
 - Established through Egerton University's Statutes under the University Act, 2012 (no. 42 of 2012).
 - Policy research and analysis since 1990
 - Leading centre in agricultural policy research
 - Reservoir of knowledge on rural livelihoods
 - Large network of collaborators/partners

Mandate

To conduct policy research and disseminate the findings in an objective manner

Vision

A people forever free from hunger and poverty

Mission

To conduct pro-active policy research and advocacy that enhance food security, create wealth and sustain the environment

Values

- ✓ *Commitment to quality*
- ✓ *Integrity, transparency and accountability*
- ✓ *Teamwork*
- ✓ *Empowerment*
- ✓ *Consultation*

Tegemeo's Main Themes

- **Policy Research:** To generate and promote evidence-based research to inform and influence policy direction on Kenya's agriculture and rural sectors.
 - Topical/emerging issues
 - Long term research

- **Outreach/advocacy** – work with policy makers and other stakeholders to identify appropriate policy options
 - Breakfast Policy Forums
 - Workshops
 - Conferences
 - Publications – Policy briefs, working papers, technical papers/bulletins, journals, etc

Tegemeo's Main Themes

- **Monitoring and Evaluation:** to monitor changes in the Ag sector and assess impacts of alternative policies for Government, development partners and other stakeholders
 - Household panel surveys – general trends and patterns
 - M & E Studies
 - Evaluations/Impact assessment
 - Creation of an MLE Unit

- **Training/ Capacity Building:** seek to build capacity in data collection and management and policy analysis for public sector and other stakeholders

Some government interventions....

- To address existing and new challenges and transform smallholder agriculture, the government has launched a number of interventions, such as:
 - Input subsidy programs
 - Large scale irrigation e.g. Galana Kulalu scheme
 - Climate smart agriculture programmes
 - Innovations e.g. the e-Extension programme
 - Land reforms & policy e.g. the minimum and maximum land holding law

- Our analysis gives evidence on effects of some of these programs on smallholder agriculture

Broader questions

- How can the agricultural sector achieve this transformation in the face of the increasing land constraints?
 - Land subdivision due to population growth
 - Emerging land issues and implications for policy
 - Land reforms and policy -- effectiveness ?
- What are the effects of climate change on smallholder farmers?
 - Likely impacts of climate change on crop production & household welfare
 - Status and viability of existing coping mechanisms
 - Economic viability of irrigation in the Kenyan context?
 - Potential contribution and challenges of crop insurance in Kenya ?
- Use of inputs is crucial in improving agricultural productivity and livelihoods ---has this been achieved in Kenya and what has been the performance of the relevant interventions ?
 - How have subsidy programs (NAAIAP) performed in in meeting its objectives?
 - Does off-farm work enhance the use of inputs to increase productivity?

Broader qns cont..

- How is the agriculture sector performing after devolution?
 - Are County Governments prioritizing agriculture?
 - Has the new structure led to improved service delivery in the sector?
 - What are the lessons after devolving majority of the functions in agriculture to County Governments?

- Are smallholder farmers accessing timely ag information to influence their production choices?
 - What innovations are propelling smallholder farmers towards higher productivity and incomes?
 - Are there successful innovations that can be up-scaled?

- Role of Monitoring, Learning and Evaluation(MLE) in agriculture ---how can a broadened MLE better address these questions?

Data

- Research uses the below datasets:
 - Existing Tegemeo data sets
 - TAPRA Panel Survey Data
 - TAPRA Household survey 2014
 - Additional/specific data
 - Value chain analysis
 - Cost of production/profitability
 - Other secondary information

TAPRA Household Panel

Cropping Year	No of Respondents
1996/97	1534
1999/00	1,428
2003/04	1,324
2006/07	1,275
2009/10	1,245

Distribution of TAPRA Household Panel

Agro-regional zones	Counties/Districts	No. of households
Coastal lowlands	Kilifi, Kwale	74
High potential maize areas	Bungoma, Kakamega, Bomet, Nakuru, Narok, Trans-Nzoia and Uasin-gishu	331
Western lowlands	Kisumu and Siaya	149
Central Highlands	Meru, Nyeri and Muranga	241
Marginal Rain shadow	Laikipia	34
Western transitional	Bungoma (Kanduyi), Kakamega (Kabras/Mumias)	145
Eastern lowlands	TaitaTaveta, Kitui, Machakos and Makueni	141
Western Highlands	Kisii and Vihiga	128
		1,243

TAPRA Household Survey 2014

- Sample frame developed after 2009 population census by the Kenya National Bureau of Statistics (KNBS).

- Two-stage stratified cluster sampling
 - 350 rural clusters from the KNBS household-based sampling frame (NASSEP V) using equal probability selection method (EPSEM).
 - Second stage randomly selected a uniform sample of 20 households in each cluster

- A total sample of 6512 households interviewed

Distribution of TAPRA Household Survey 2014

Agro-ecological zone	Counties	n	N
Coastal Lowlands	Kilifi, Kwale, Taita Taveta , Tana river	609	331,342
Lower Highlands	Baringo, Bomet, Bungoma, Elgeyo Marakwet, Kakamega, Kericho, Kiambu, Kisii, Laikipia, Makueni, Muranga, Nakuru, Nandi, West Pokot, Uasin Gishu, Trans Nzoia, Nyandarua, Nyeri, Nyamira	1,125	1,412,807
Lower Midland (1-2)	Bungoma, Busia, Homabay, Kakamega, Kisumu, Migori, Siaya , Vihiga	921	856,815
Lower Midlands (3-6)	Baringo, Busia, Elgeyo Marakwet, Embu, Homabay, Kajiado, Kirinyaga, Kisumu, Kitui, Machakos, Makueni, Meru, Migori, Muranga, Samburu, Taita Taveta, Tharaka, West Pokot	1,082	1,355,318
Upper Highlands	Elgeyo Marakwet, Kiambu, Laikipia, Meru, Muranga , Nakuru, Narok, Nyandarua, Nyeri, Uasin Gishu, West Pokot	698	441,709
Upper Midlands(0-1)	Bomet, Bungoma, Embu, Kakamega, Kericho, Kiambu, Kirinyaga, Kisii, Kisumu, Muranga,Nandi, Nyamira, Nyeri, Tharaka, Vihiga	854	748,319
Upper Midlands (2-6)	Baringo, Bomet, Bungoma, Busia, Elgeyo Marakwet, Embu, Kajiado, Kakamega, Kericho, Kiambu, Kisumu, Kitui, Laikipia, Machakos, Makueni, Meru, Muranga, Nakuru, Narok, Nyamira, Nyeri, Tharaka, Trans Nzoia, Uasin Gishu, West Pokot	1,223	1,776,961
Overall		6,512	6,923,271

TAPRA 2014 HH Data: Household Characteristics by AEZ

AEZs	Household Size	Age of HH head	Gender of head (% female)	Education of head (Years of schooling)
Coastal Lowlands	7.2	51.0	22.4	5.0
Lower Highlands	5.2	49.7	23.6	8.0
Lower Midlands 1-2	5.8	50.7	28.5	7.0
Lower Midlands 3-6	5.3	52.1	23.8	6.4
Upper Highlands	5.5	49.6	19.9	7.4
Upper Midlands 0-1	5.4	52.2	29.5	7.2
Upper Midlands 2-6	5.2	49.5	18.8	7.2
Overall	5.4	50.6	23.4	7.1

TAPRA 2014 HH Data: Access to Inputs & Infrastructure

Distance in KM to the nearest

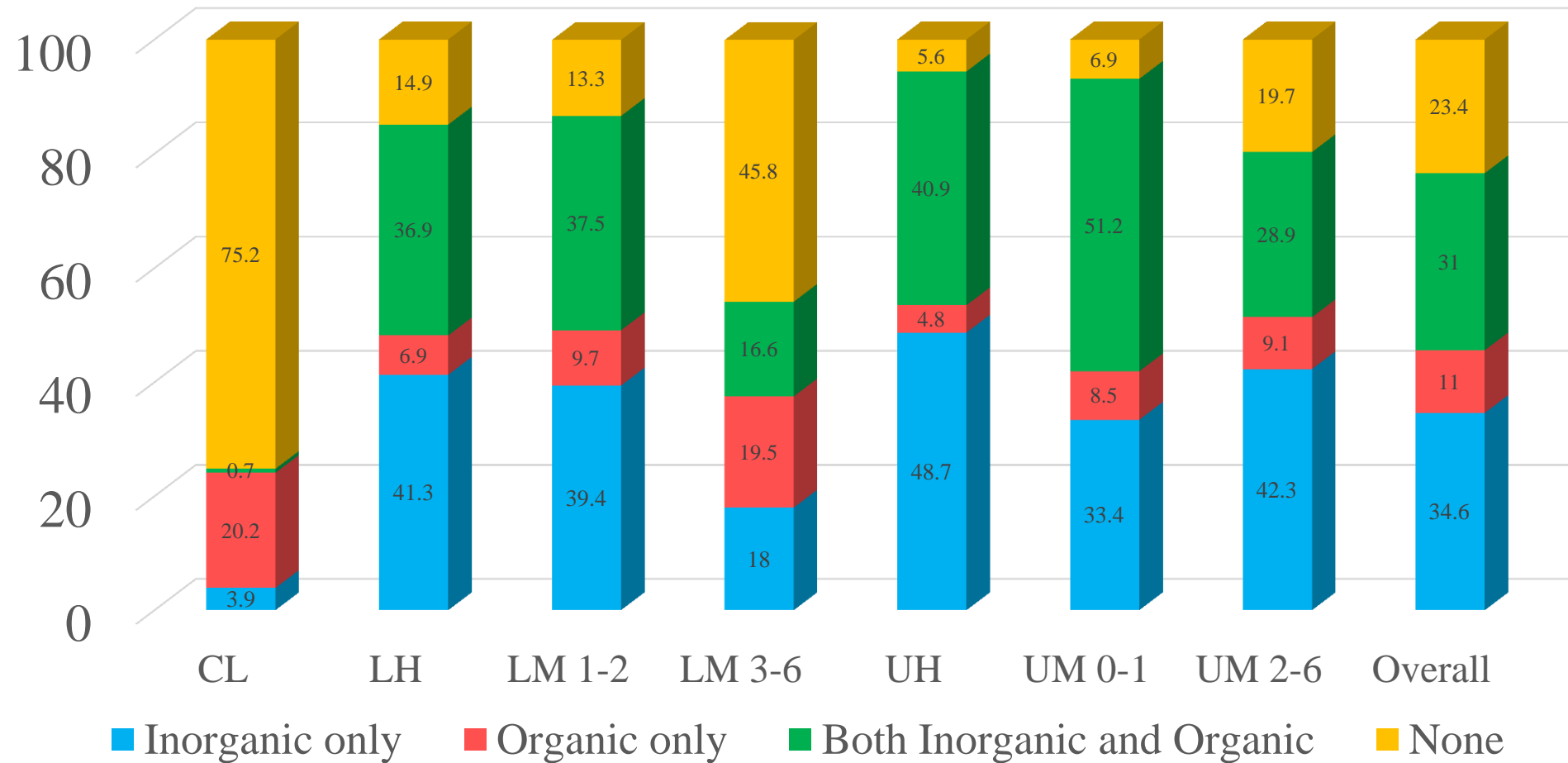
AEZ	NCPB depot	Extension advice	Fresh produce market	Motorable road	Tarmac road
Coastal Lowlands	39.4	11.5	10.0	0.5	15.5
Lower Highlands	23.2	6.5	3.9	0.3	7.5
Lower Midlands 1-2	18.4	5.3	2.8	0.3	5.3
Lower Midlands 3-6	31.7	11.1	5.2	0.5	14.8
Upper Highlands	23.7	7.3	4.9	0.3	7.9
Upper Midlands 0-1	16.6	5.3	2.6	0.2	3.1
Upper Midlands 2-6	24.0	7.3	4.0	0.4	11.2
Total	24.2	7.6	4.3	0.4	9.5

TAPRA 2014 HH Data: Access to Services

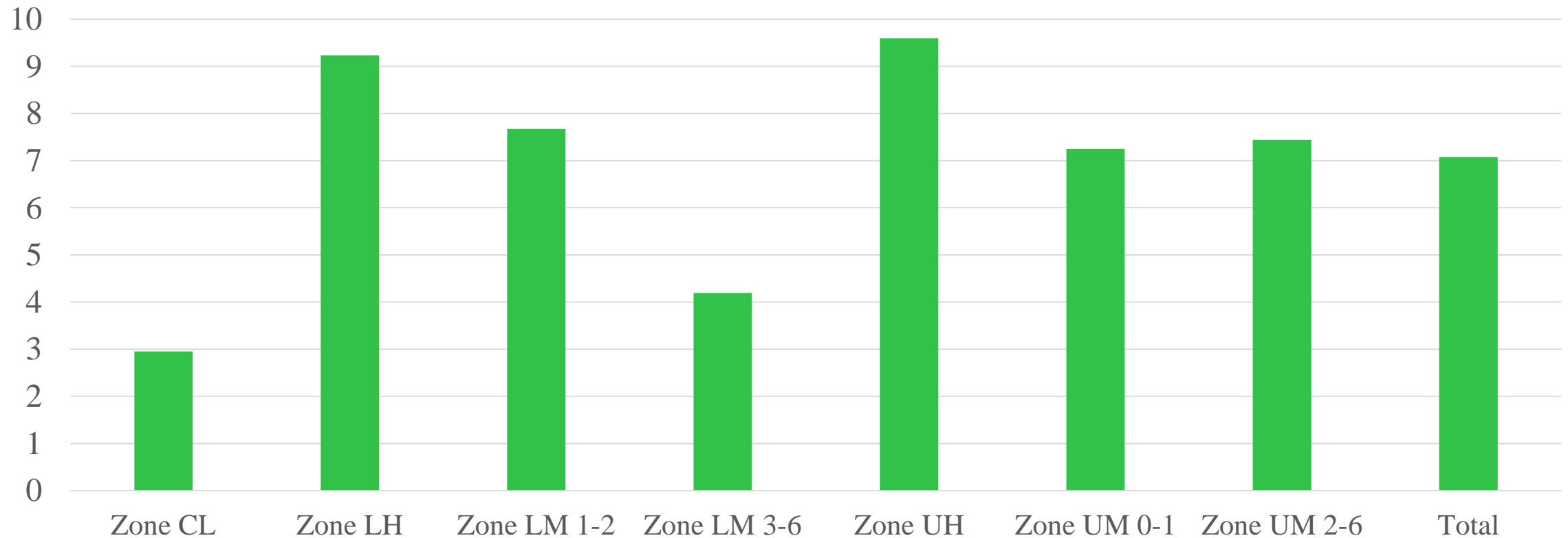
Distance in KM to the nearest

AEZ	Piped water source	Health center	Electricity supply	County/ sub County headquarters
Coastal Lowlands	6.5	4.1	3.0	27.0
Lower Highlands	2.1	2.3	1.0	14.5
Lower Midlands 1-2	3.8	2.1	0.8	10.3
Lower Midlands 3-6	5.0	3.6	3.2	16.9
Upper Highlands	3.0	3.8	1.8	15.2
Upper Midlands 0-1	2.1	2.0	0.5	8.0
Upper Midlands 2-6	2.7	2.9	1.4	15.2
Total	3.3	2.8	1.6	14.6

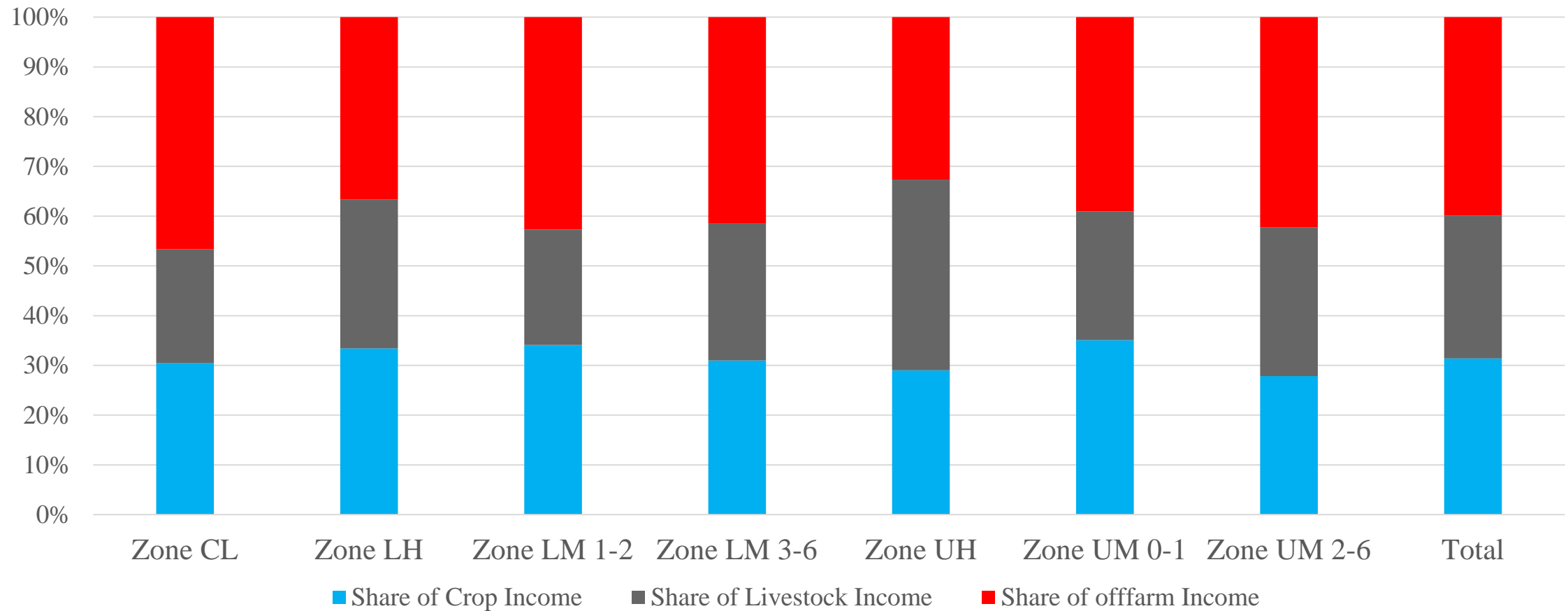
TAPRA 2014 HH Data: Fertilizer Use (% farmers)



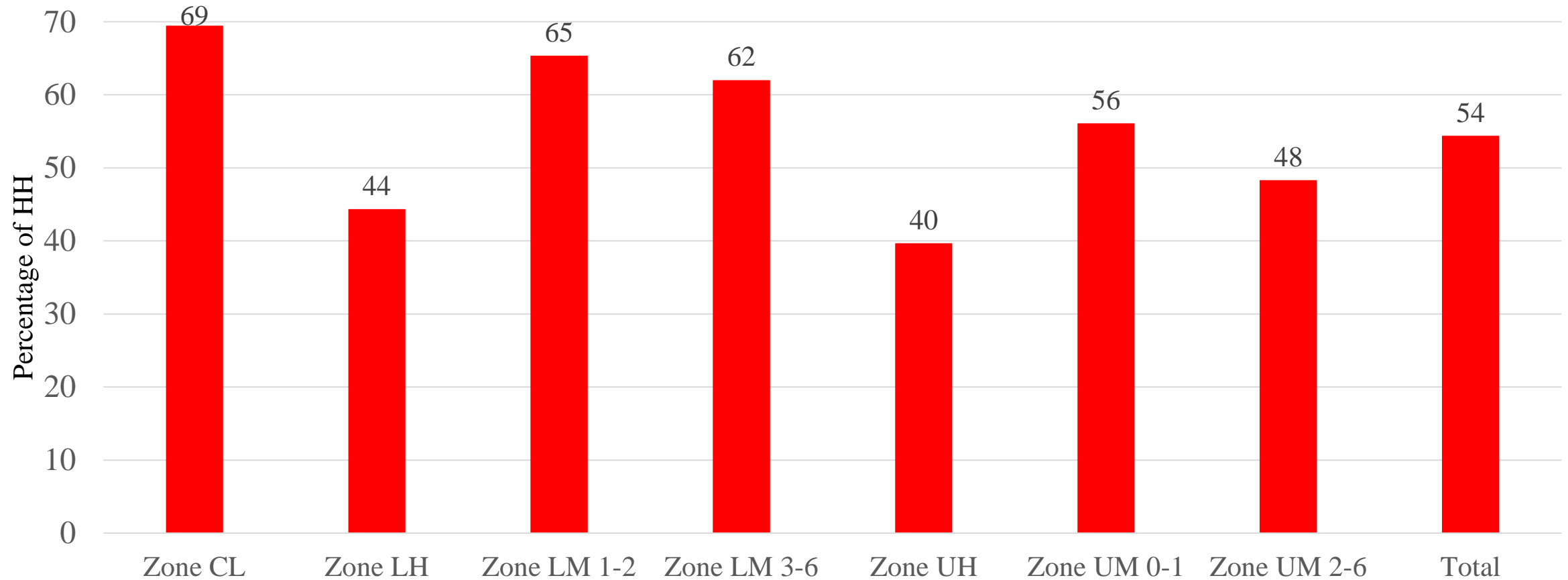
TAPRA 2014 HH Data: Maize yields (90 Kg bags/acre) by AEZ



TAPRA 2014 HH Data: Income Share by AEZ



TAPRA 2014 HH Data: Poverty Head Count by AEZ (%)



Conference objectives

- Present our research findings to stakeholders and experts with a view to eliciting debate and feedback from the participants
- Lay some background for a wider discussion on policies and interventions that could help transform smallholder agriculture to effectively address food insecurity and poverty challenges
- Provide a forum for open discussion among stakeholders on appropriate policy options

Tegemeo conference 2015today

- Core theme : *“Transforming Smallholder Agriculture in Kenya in the Context of Climate Change, Devolution & Increasing Land Constraints”*
- Sub-themes

Day 1

- Land Access & Policy
- Climate Change and Livelihoods
- Input Intensification, Subsidies and Off-farm Work

Day 2

- Agriculture & Devolution
- Agricultural Services & Innovation
- Monitoring, Learning & Evaluation

Program

	Day 1 (November 10)	Day 2 (November 11)
Morning Session	Session I: Opening	Session I: Recap of Day 1
		Session II: Agriculture and Devolution
	Session II: Keynote Address	Session III: Agricultural Services and Innovations
	Session III: Land Access and Policy	Session IV: Monitoring Learning and Evaluation
		Session V: Panel Discussion
Lunch Break		Lunch break and departure
Afternoon Session	Session IV: Climate Change and Livelihoods	
	Session V: Input Intensification & Subsidies	

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 - Ford Foundation, among others
 - Michigan State University for the long standing partnership in research
 - Other Universities/ Research organizations
 - Private sector
 - Civil Society esp farmer organizations – CGA, KENAFF, EAFF
 - Farmers & other actors along value chains
- Most of all appreciation to you all for being part of this important conference

Thank you