

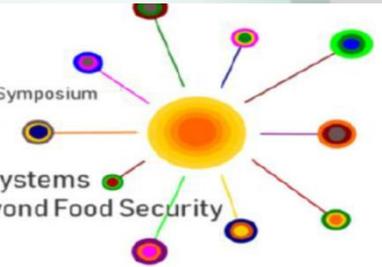


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**HARAMAYA  
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Building the Basis for Development

International Symposium  
07.02.-08.02.2020

Sustainable Food Systems  
- going beyond Food Security



# Seasonality and Food Security among Smallholder Rural Households in Eastern Ethiopia: Using Panel Data

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**Sustainable Food Systems-going beyond food security -7-8  
February, 2020  
Giessen, Germany**

# Ethiopian Map



Source: World Atlas

# Introduction

- In Ethiopia, 80% of the total populations live in rural areas with 95% of the total agricultural output obtained from smallholder agriculture (CSA, 2015).
- Most crops are grown using rain-fed agriculture and irrigation is limited to a small minority of households
- As far as we know, the empirical literature in Ethiopia especially in low-land agro-ecology and detailed evidence on food and nutrition security across agricultural seasons, however, is scant

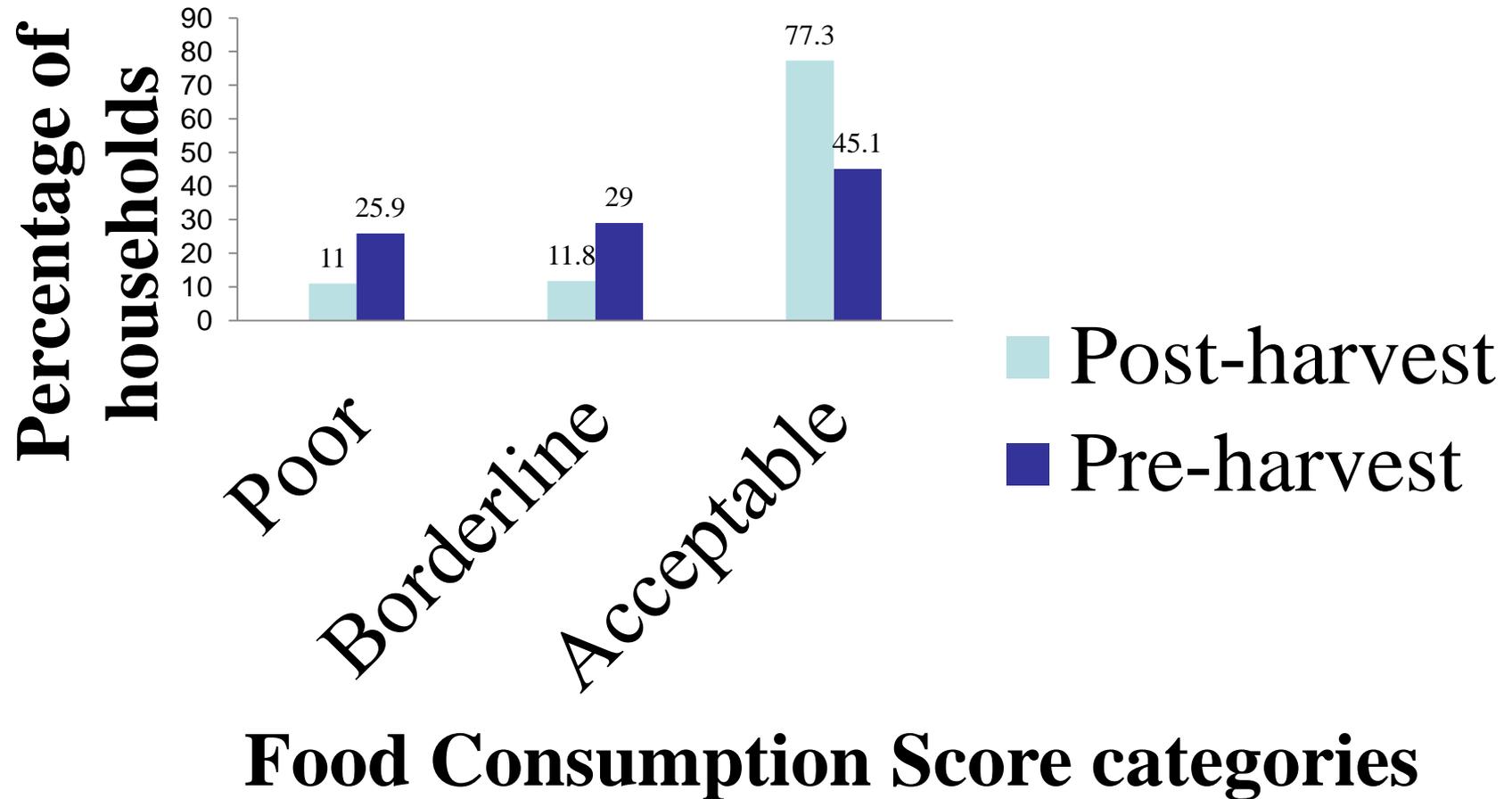
# Objective

- This study was conducted in Eastern Ethiopia to examine seasonal food security and identify factors contributing to seasonal variation at household level

# Methods

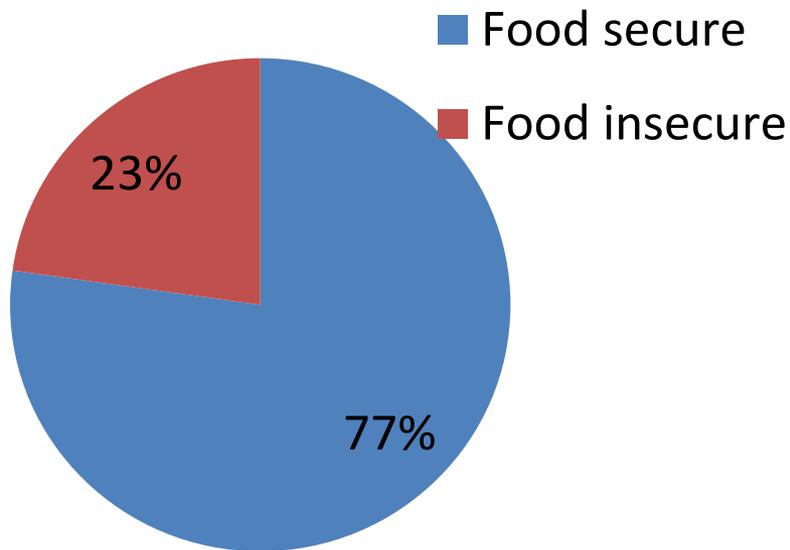
- Questionnaire was developed and pre-tested
- Households were twice asked about the food items consumed seven days prior to the survey, once during the high season (Mid January to February) and again during the low seasons (August to Mid September),
- **Random Effects Model** was employed for this study after conducting Hausman test and LM test

# Seasonal household food consumption

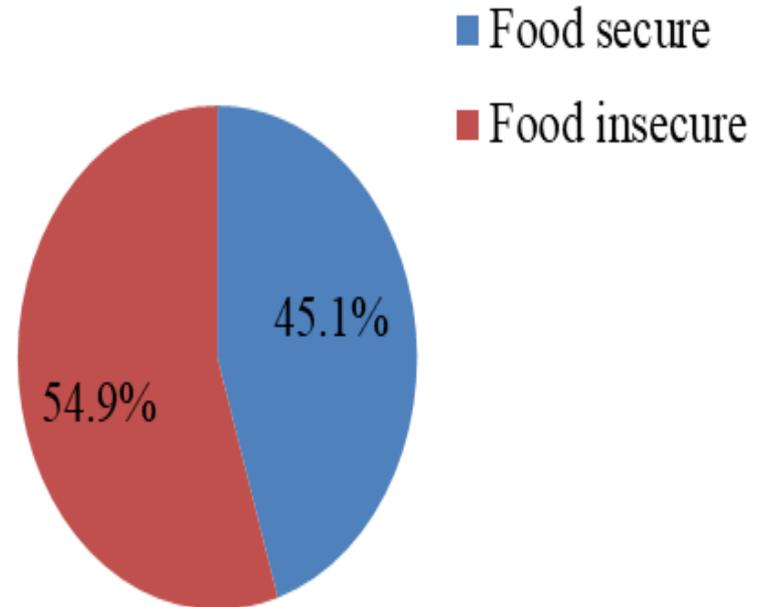


# Seasonal food security of households

**Post-harvest (Proportion of households)**



**Pre-harvest (Proportion of households)**



# Factors associated with seasonal household food security (N=784)

<b>Explanatory Variables</b>	<b>RE (Std. Err.)</b>	<b>RE-rob (Std.Err.)</b>
Family Size	-0.202(0.33)	-0.202(0.33)
Age of Household Head	-0.050 (0.060)	-0.050(0.06)
Education of Household head	3.862(1.55) **	3.862(1.50) **
Cellphone Ownership	5.786(1.54) ***	5.786(1.56) ***
Extension contact	1.950(1.71)	1.950(1.70)
Cooperative membership	4.826(1.83) ***	4.826(1.66) ***
Credit access	-4.521(1.49) ***	-4.521(1.53) ***
Total cultivated land	3.487 (1.14) ***	3.487(1.12) ***
Livestock ownership (TLU)	0.785(0.28)***	0.785(0.27)***
Food group production	3.339(0.77) ***	3.339(0.75) ***
Total Income quintile-2	1.577(1.92)	1.577(1.95)
Total Income quintile-3	3.498(1.95) *	3.498(1.89)*
Total Income quintile-4	5.357(1.96) ***	5.357(1.96)
Total Income quintile-5	3.943(2.17) *	3.943(2.33)*
Housing quality	-1.135(1.47)	-1.135(1.47)
Illness of household member	1.996(1.31)	1.996(1.35)
Keeping livestock in the dwelling	-4.141(1.54) ***	-4.141(1.55) ***
Access to safe drinking water	5.216(1.52) ***	5.216(1.52)***
Season	-10.810(1.42) ***	-10.808(1.43) ***
Constant	30.053(3.89) ***	30.053(3.87) ***

# Factors associated with seasonal household food security...

- Seasonal variation in food security was positively and significantly associated with
  - own production of food groups
  - household income
  - size of cultivated land
  - livestock ownership
  - cell phone ownership,
  - cooperative membership,
  - education of the household head and
  - access to improved drinking water

On the other hand, households keeping livestock within their dwelling and credit access were negatively associated with household food security

# Conclusion and policy implications

- Considerable seasonal differences exist between households in terms of dietary diversity and food security, requiring differentiated policy responses across seasons
- Household dietary diversity and food security deteriorate sharply in the pre-harvest season: this requires more dynamic understanding of household food security, and specific responses by government and other agencies

# Conclusion and Policy Implications

- Diversification of agricultural production, household income and increasing farm size has positive impacts on food security, and should be encouraged,
- Expanding education of household heads, ownership of cellphones, access to cooperatives and improving sanitation can also improve food security across seasons
- Policies aimed at reduction of food insecurity much include an emphasis on the development of the rural farm and non-farm economy
- Future interventions aiming at ensuring food and nutrition security should pay attention to seasonality and to mechanisms of improving diversified production

# Acknowledgement

- Irish Aid through Agridiet Project
- Centre for International Cooperation and Development, University of Pavia
- Conference Organizers
- Haramaya University
- University College Cork, Ireland
- Households who participated in the research

**Thank you very much**