

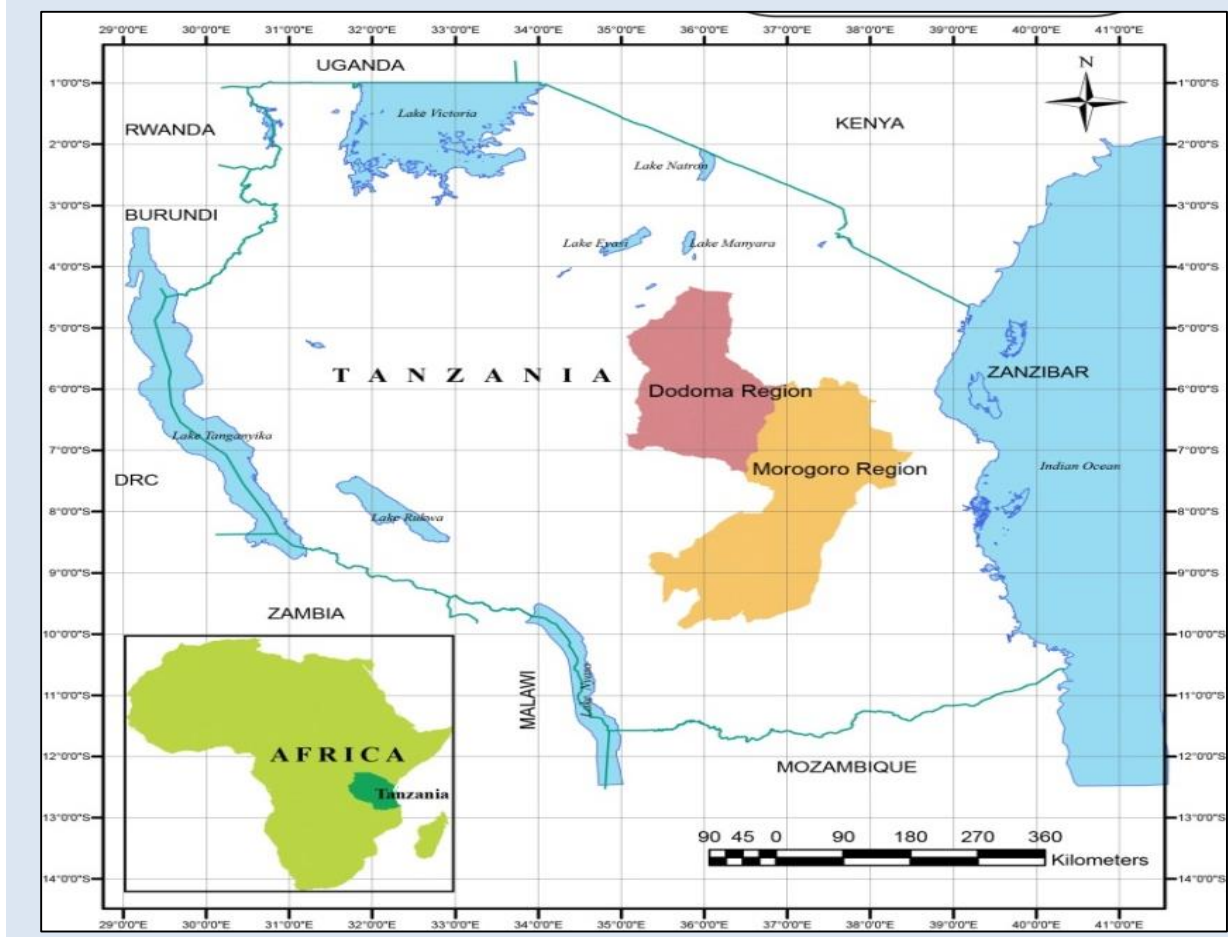
## 1. Introduction

- Uptake of UPS among smallholders improves household's welfare.
- Scant evidence of adoption impacts on vulnerability along traditional AVC.
- Most studies assess impacts of innovations along the modern value chains.

## 2. Objectives

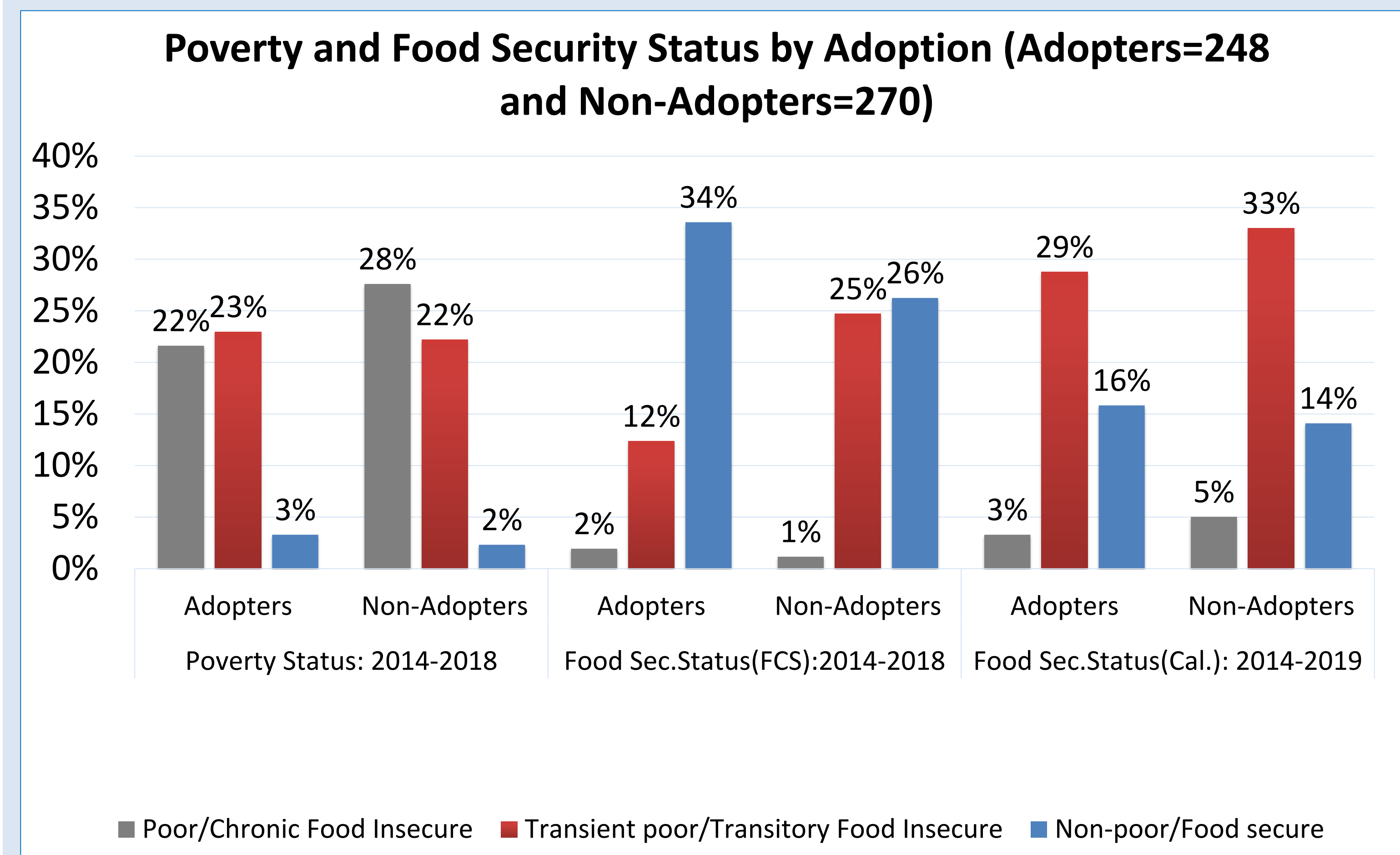
- Assess impacts of UPS adoption on households vulnerability to (i) poverty; and (ii) food insecurity.

## 3. Data and Method



**Study area:** Kilosa (Morogoro) & Chamwino (Dodoma).  
**Data:** Households surveys (2014, 2016 & 2018) in 4 treatment villages (Adopters=248) and 2 control villages (Controls=270).  
**Estimation:** IV-oprobit with dependent variables taking 3 outcomes (Poor, vulnerable & Non-Poor based on Panel data VER approach) and covariates being adoption (Yes/No) among others.

## 4. Results: A.Types of Poverty as percentage of all households by adoption



## Upgrading Strategies

### Millet thresher



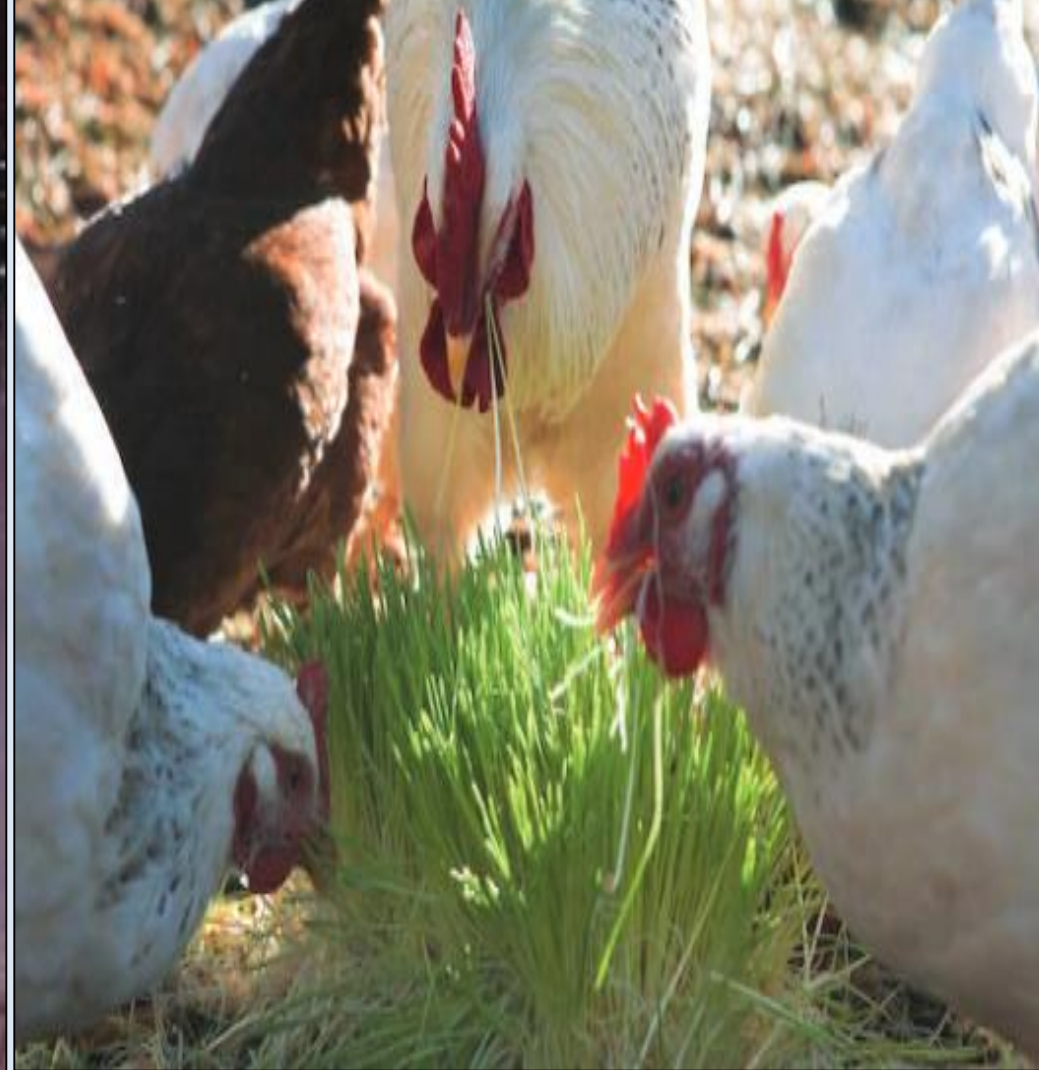
### Sunflower Oil Pressing



### Storage bags



### Poultry farming



### Kitchen Garden



### m-IMAS



## 4. C. Results

UPS adoption reduced vulnerability among smallholders in Tanzania.

- Reduced probability of being poor and increased probability of being non-poor.
- Increased probability of transient poor to escape this category.
- Increased probability of extreme food insecure to escape this category.
- Increased probability of transient food insecure to exit the food vulnerable category.

## 6. Bibliography

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- Biru, W. D., Zeller, M., & Loos T. K.,(2020). The Impact of Agricultural Technologies on Poverty and Vulnerability of Smallholders in Ethiopia: A Panel Data Analysis. Social Indicators Research (2020) 147:517.544. <https://doi.org/10.1007/s11205-019-02166-0>

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## Upgrading Strategies

### Rainwater harvesting



### Fertilizer Mcrodosing



### Pyrolysis(Charcoal )



### Tree planting



### Improved stoves



## 4. B. Results: Impacts of UPS adoption on Vulnerability

Dependent variable	Adoption Coef(SE)
<b>HhIncome(per capita/day US\$ 2011 PPP)</b>	
• Chronically poor	-0.3812*** (0.1006)
• Transient poor(Vulnerable)	0.2238*** (0.0285)
• Non-poor	0.1573* (0.0801)
<b>Food Consumption Score</b>	
• Chronic food insecurity	-0.2185** (0.0855)
• Transitory food insecurity(Vulnerable)	-0.2518*** (0.0389)
• Generally food secure	0.4704*** (0.0535)
<b>Daily Calories intake per adult equivalent</b>	
• Chronic food insecurity	-0.1434*** (0.0377)
• Transitory food insecurity	-0.1285*** (0.0201)
• Generally food secure	0.2719*** (0.0496)

## 5. Conclusion

- Adoption of UPS along the traditional AVC substantially reduced vulnerability to poverty and food insecurity among rural smallholders in Tanzania.
- Policy efforts should focus on continued implementation of upgrading strategies to improve rural households' welfare.

## Acknowledgement:

The Trans-SEC Project: <http://project2.zalf.de/trans-sec/public/index>