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Bioenergy and Food
Security Project

Household level food security impacts (Module 5)

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Acknowledgements: David Dawe and Luca Tasciotti (ESA FAO)

Final BEFS Consultation, Dar es Salaam, 20 May 2010



Module 5: Household level impacts

Questions addressed



Key Question: Which are the most vulnerable household groups?





Changes in food prices and the impacts

- Food prices can change because of international and domestic supply and demand shocks
 - This can also include changes in biofuel demand
- The resulting change in food prices affects households
- We need to understand
 - a) how does the price change **impact** households?
 - b) are any groups **vulnerable**?



Household level impacts and vulnerable groups

- Households may produce and consume a crop at the same time
- Price increases will affect households in different ways:
 - *Net consumers*: Those who buy more food than they sell will be hurt by higher prices.
 - *Net producers*: Those who sell more food than they buy benefit from higher prices.
- Given a price change, we calculate the **net welfare impact** on the household based on the position of the household (Some literature: Minot and Goletti 1998, Deaton 1988, Dawe and Maltsoğlu 2009)

...data...



Data requirements and the countries investigated

- The household level analysis within BEFS has been applied in Tanzania, Peru and in the South East Asia context in Cambodia
- Data used: macro, price, micro
- The welfare analysis needs income and expenditure data by crop
- Data availability problem, therefore we use a regional dataset as example of application in Tanzania



Which commodities do we focus on in Tanzania?

- **Food security commodities:** Selected based on calorie consumption data. Main focus on **Maize** and **Cassava**.



Ranking	Commodity	Calorie Share
1	Maize	33.4
2	Cassava	15.2
3	Rice (Milled Equivalent)	7.9
4	Wheat	4.0
5	Sorghum	4.0
6	Sweet Potatoes	3.3
7	Sugar (Raw Equivalent)	3.3
8	Palm Oil	3.0
9	Beans	2.9
10	Beverages, Fermented	2.7
11	Milk – Excluding Butter	2.2
12	Bovine Meat	1.8
13	Pulses, Other	1.7
14	Plantains	1.5
15	Millet	1.4
Subtotal share for selected items		88.5
Total Calories per capita		1959

Source: FAOSTAT

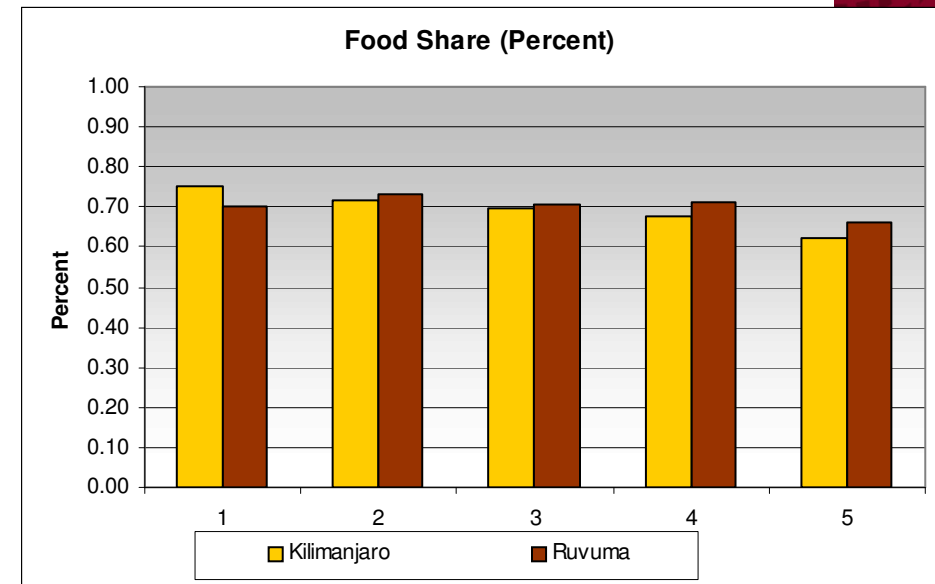
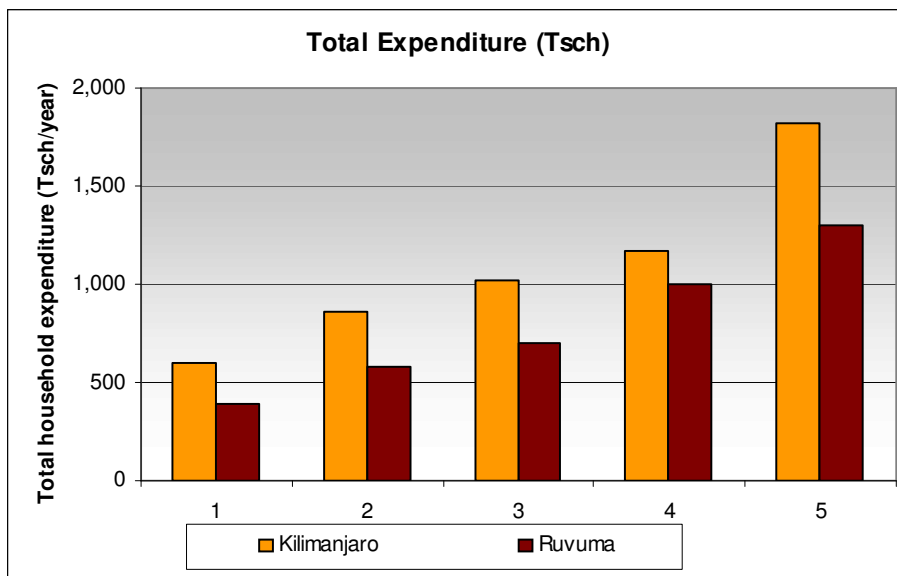
The household survey data

Ruvuma and Kilimanjaro 2004



- The dataset was collected jointly by REPOA/FAO/WB between 2003 and 2004
- The survey covered 957 **rural** households in the **Kilimanjaro** region and 890 rural household in **Ruvuma**

Sample	Kilimanjaro			Ruvuma		
	Size (Number)	Education (Years)	Age (Years)	Size (Number)	Education (Years)	Age (Years)
Total	5.3	6.0	53.5	5.2	6.0	43.2

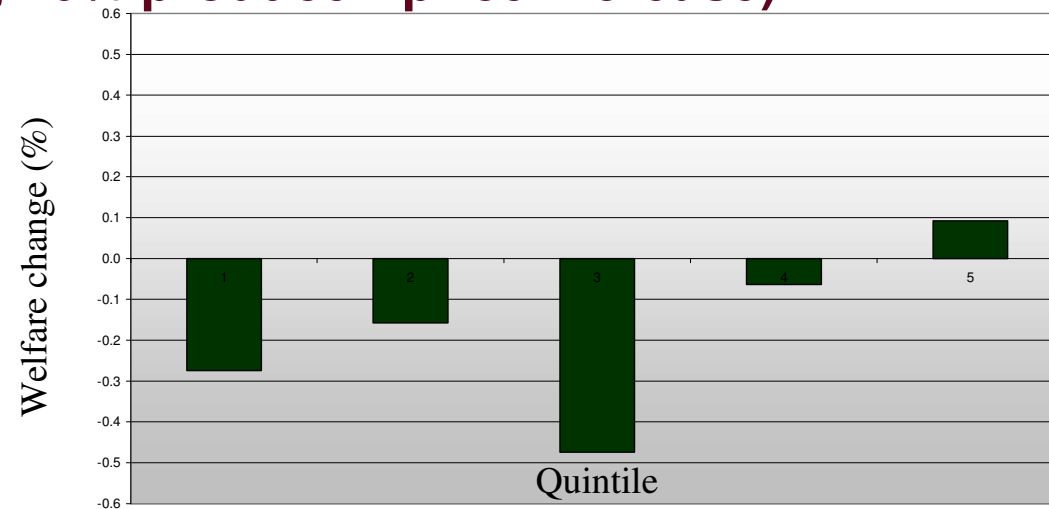


Tanzania Example: Maize

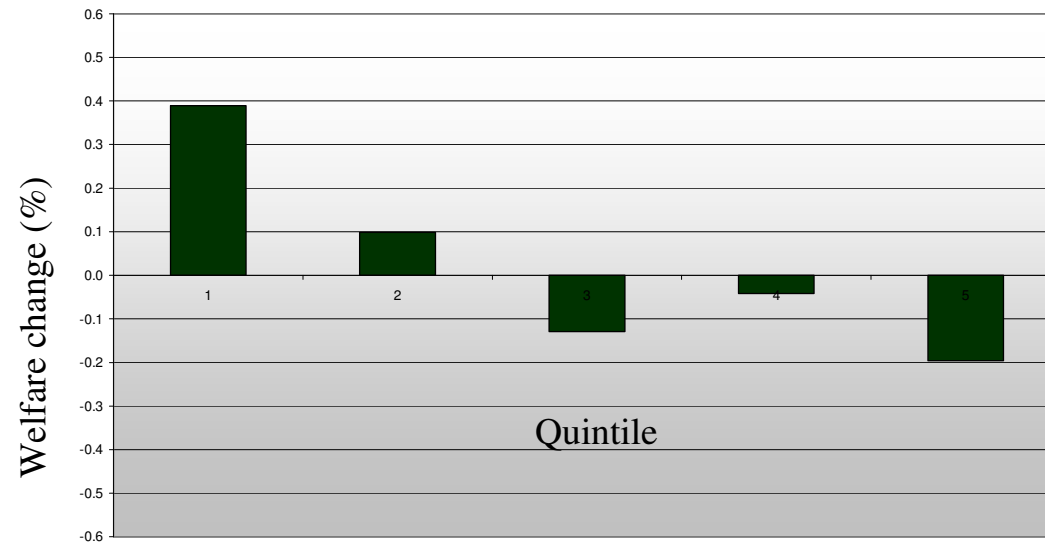
Household welfare impacts by quintile

(Rural households, 10% producer price increase)

- Kilimanjaro



- Ruvuma



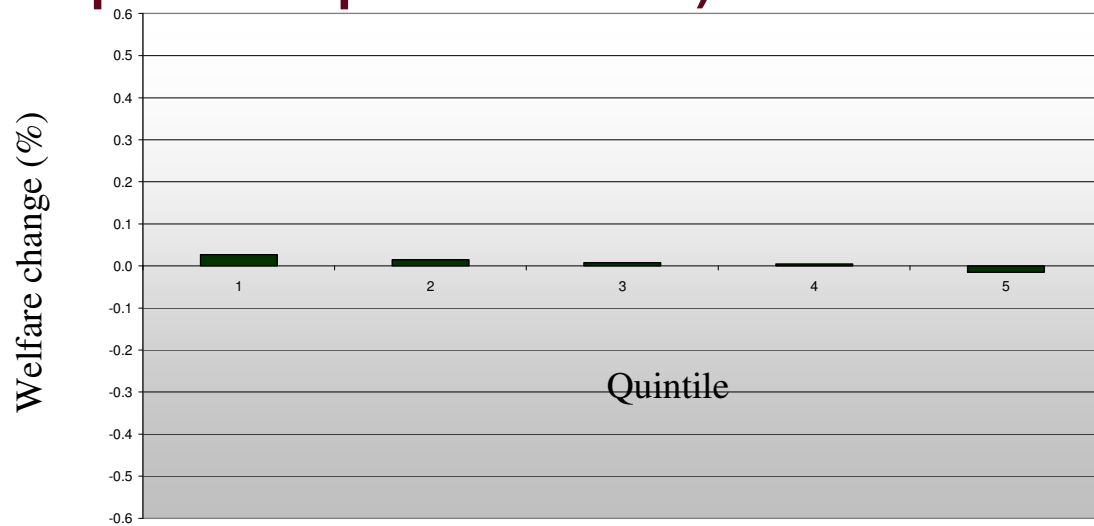
Tanzania Example: Cassava

Household welfare impacts by quintile

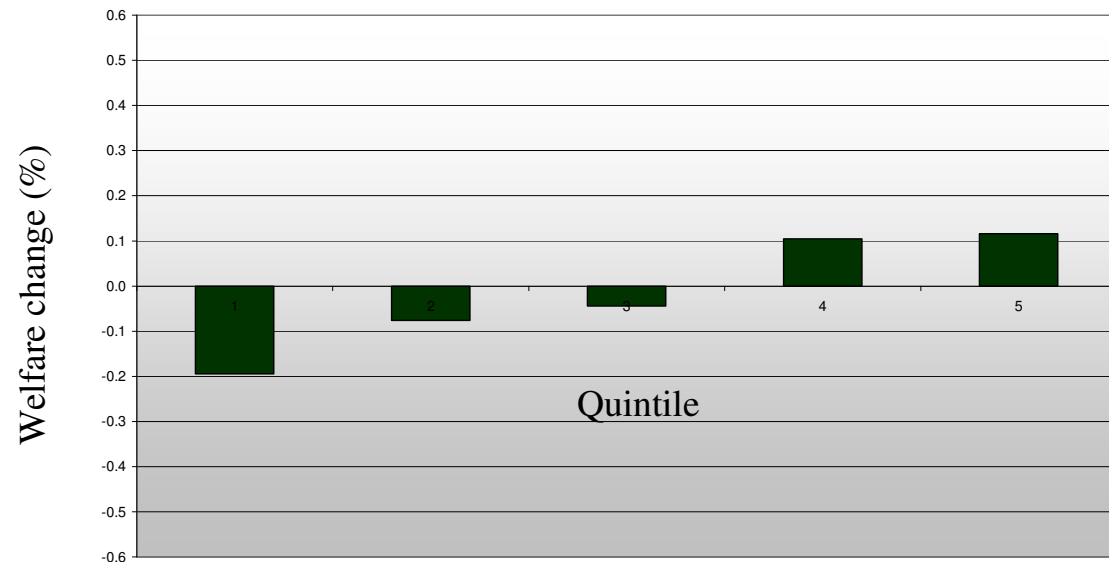
(Rural households, 10% producer price increase)



- Kilimanjaro



- Ruvuma





Maize and Cassava Price Changes

Commodity and Marketing Level	Domestic Retail Fresh Cassava	Domestic Retail Dried Cassava	Domestic Maize Wholesale
Real Percent change between 2003 - 2008	+50%	+42%	+44%

Source: Ministry of Trade, Calculations by the authors

Capacity building: Technical training

- Training course
 - Co-ordinated by REPOA, focal point
 - Participants from the following institutions:
REPOA, ESRF, UDASM, Open University,
Ifakara Research Centre





Technical training structure

- Technical training
 - Background on food security and the linkages to bio-energy
 - The BEFS Analytical Framework and how the household analysis fits into the BEFS structure
 - Background theory on household level welfare impacts due to increasing food prices
 - Hands on experience with STATA
 - Hands in implementation of the analysis with real household data



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THANK YOU!

www.fao.org/bioenergy/foodsecurity/befs

Irini Maltsoglou, BEFS FAO

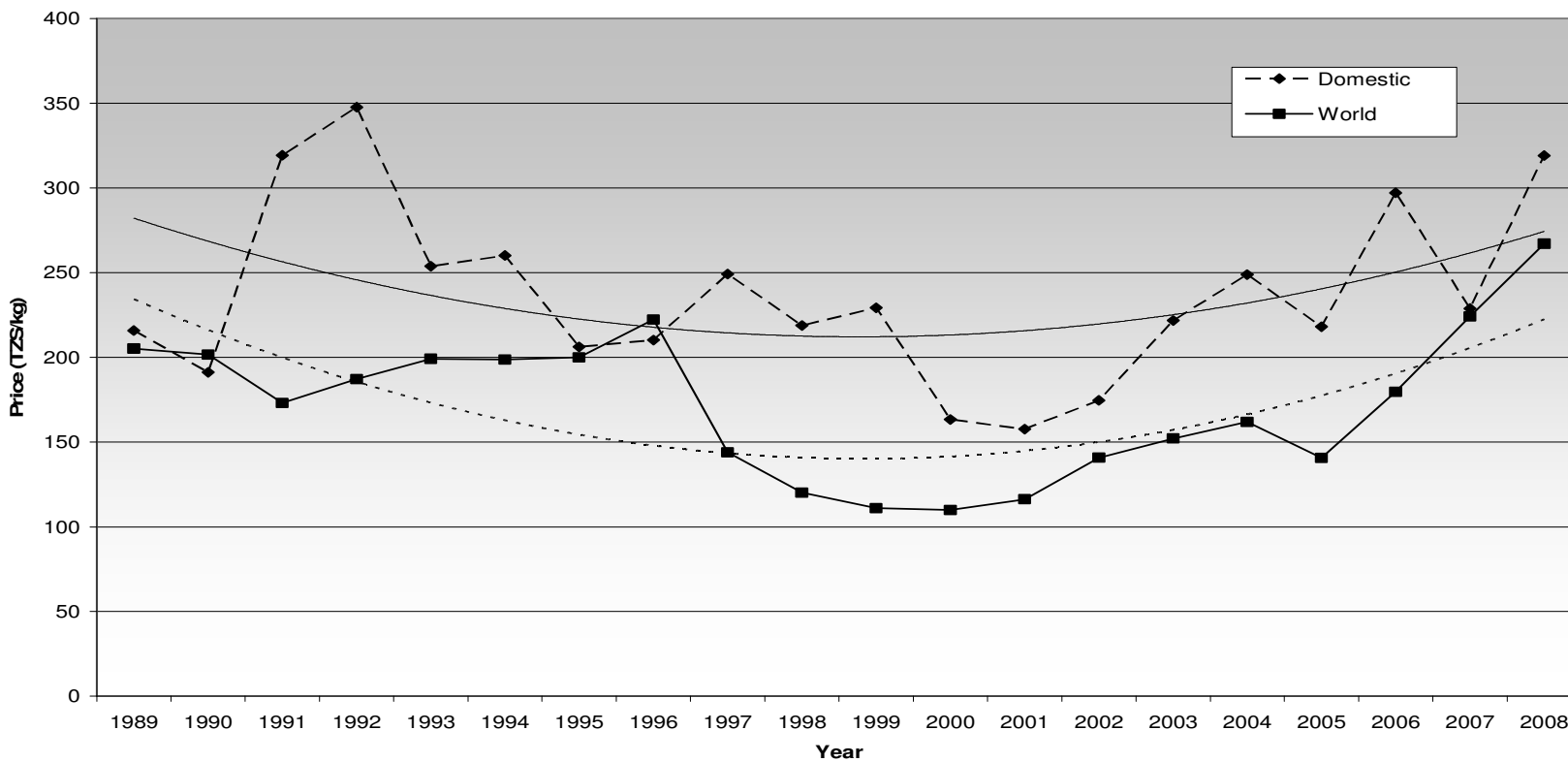




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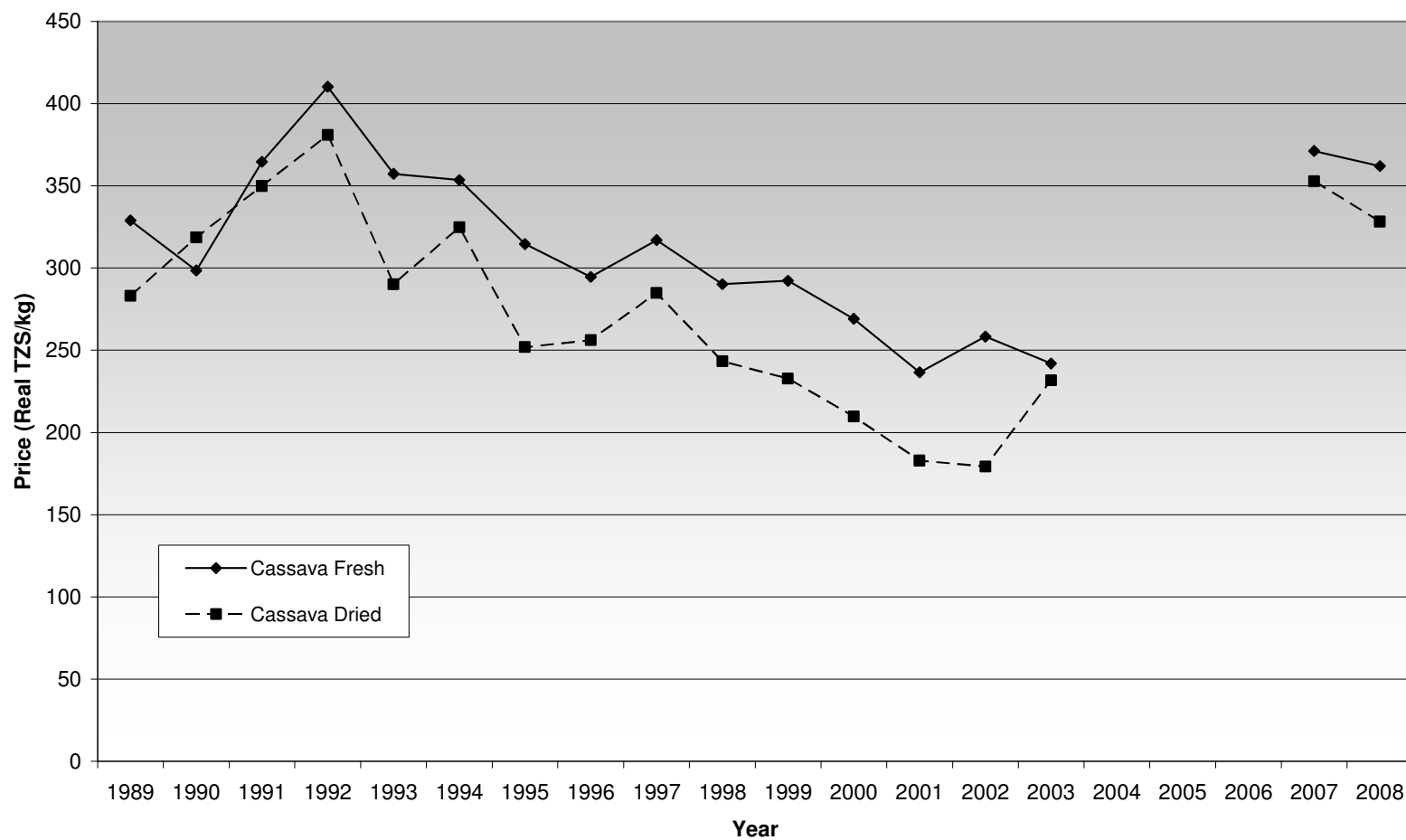
Maize Price in Tanzania



Cassava Price in Tanzania



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....maize and cassava market are interlinked