

The potential of the INDEPTH network to contribute towards urgently needed data for the SDG's – a case study from the Agincourt HDSS

Wayne Twine¹, Tor Vagen², Anja Gassner², Leigh Winowiecki³

¹University of the Witwatersrand, South Africa

²World Agroforestry Center, Kenya.

³International Center for Tropical Agriculture, Kenya



INDEPTH Network
Better Health Information for Better Health Policy



RESEARCH PROGRAM ON
Forests, Trees and
Agroforestry



CIAT
International Center for Tropical Agriculture
Since 1967 / Science to cultivate change

Introduction



- **Data** are critical for planning & monitoring attainment of targets by 2030
- Could **cost** twice the total annual spend on ODA (Copenhagen Consensus, 2015)
- Valuable role for INDEPTH in SDG3 (Good Health & Wellbeing) e.g.
 - Reduce newborn mortality by 70%
 - Halve malaria infection
 - Cut early death from chronic disease by 1/3
 - Lower chronic child malnutrition by 40%

- **BUT** is INDEPTH research platform a **potentially overlooked resource** for **other SDG goals and targets** (esp. monitoring)?
- Proof of concept: **HDSS dataset** to quantify links between human wellbeing & natural resources

INDEPTH has potential to demonstrate importance of linkages between health & other SDG goals



Goal 3: Ensure healthy lives & promote well-being for all at all ages



Goal 2: End hunger, achieve food security & improve nutrition & promote sustainable agriculture



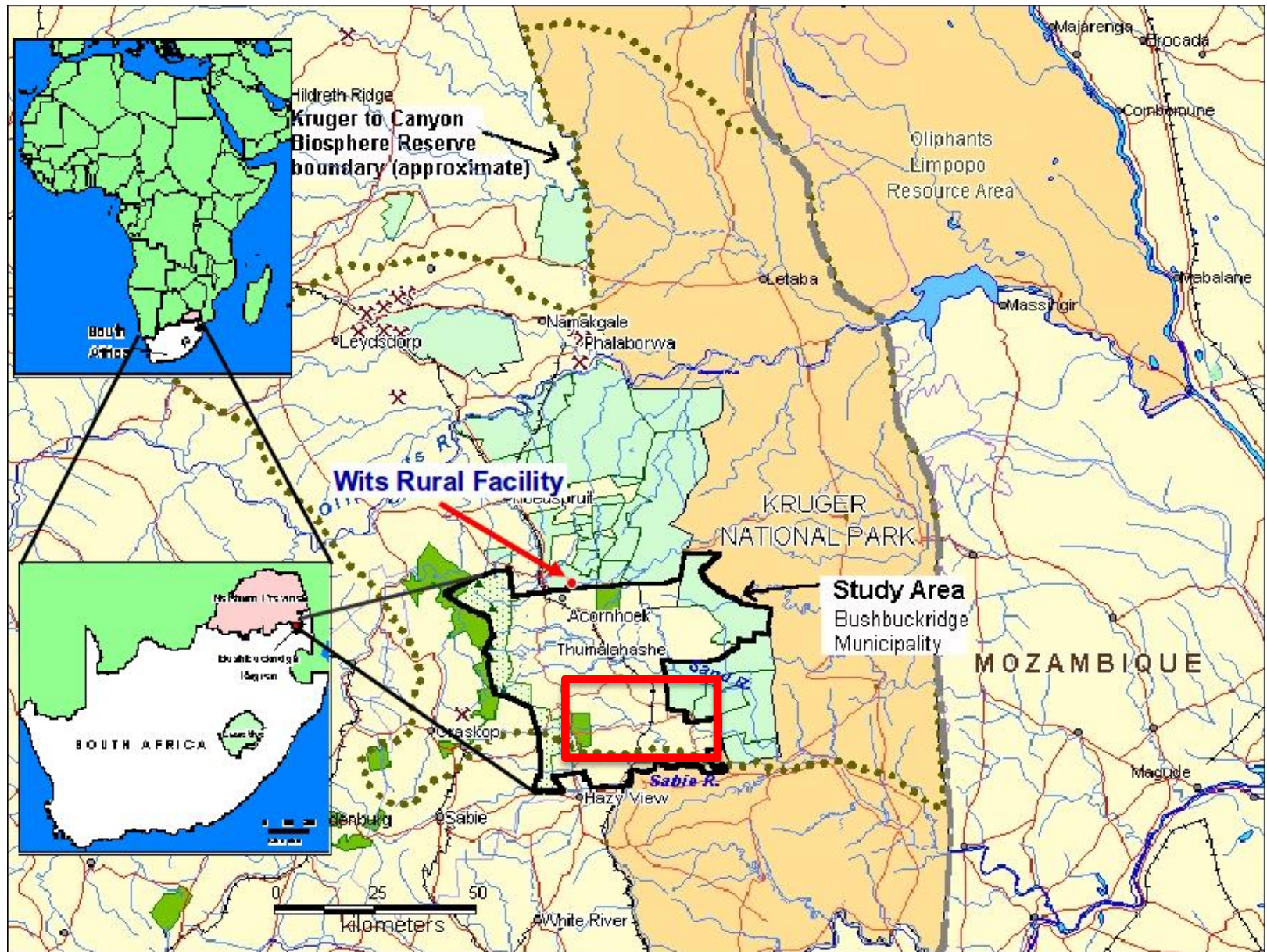
Goal 15: Sustainably manage forests, combat desertification, halt & reverse land degradation, halt biodiversity loss

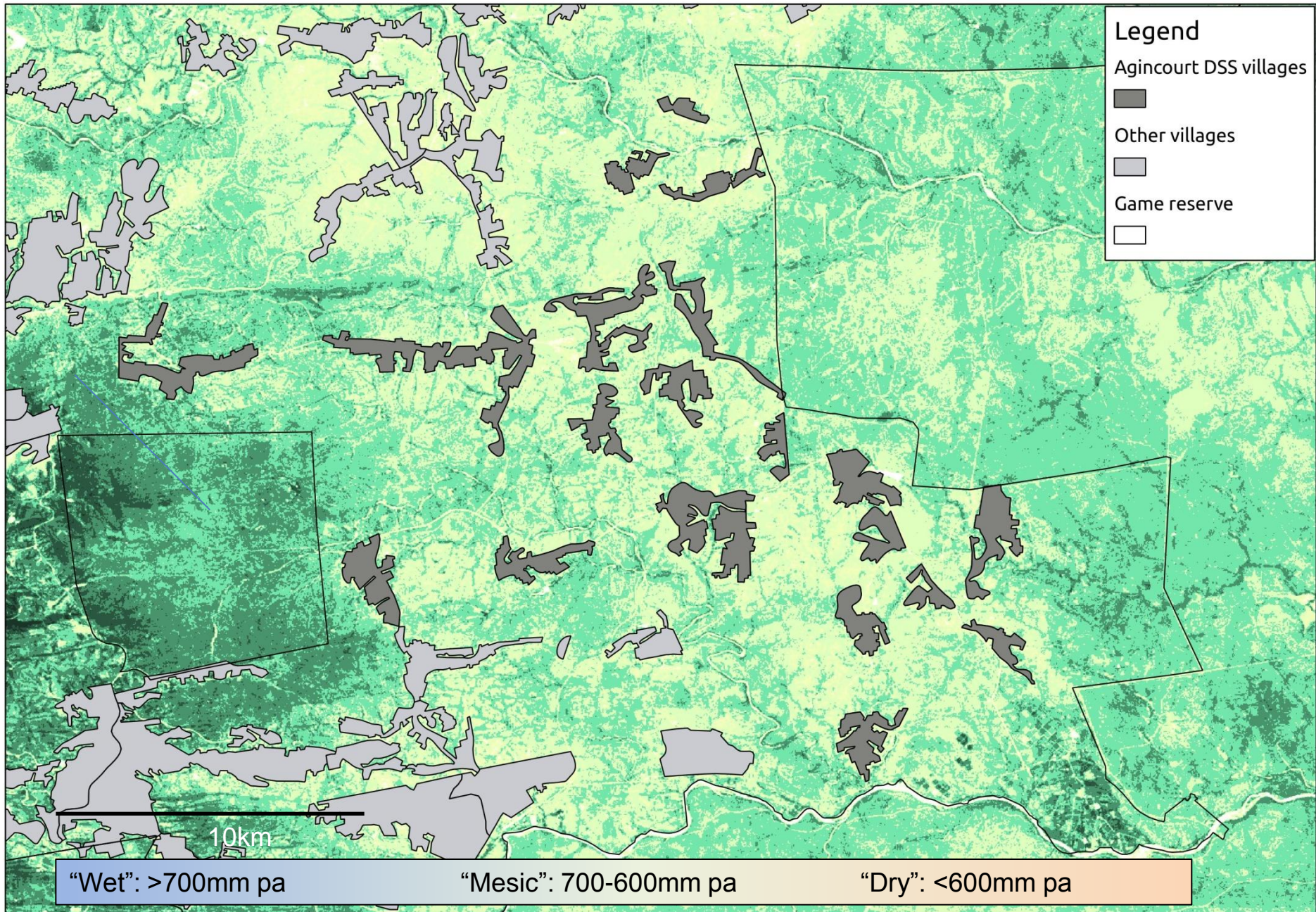
Proof of concept

- Agincourt HDSS: South Africa
 - SSA -> co-varying development challenges:
 - Poverty
 - Food insecurity
 - Climate change
 - Longitudinal data on food security & natural resource use
 - Strong collaboration between public health & ecology



Agincourt HDSS site





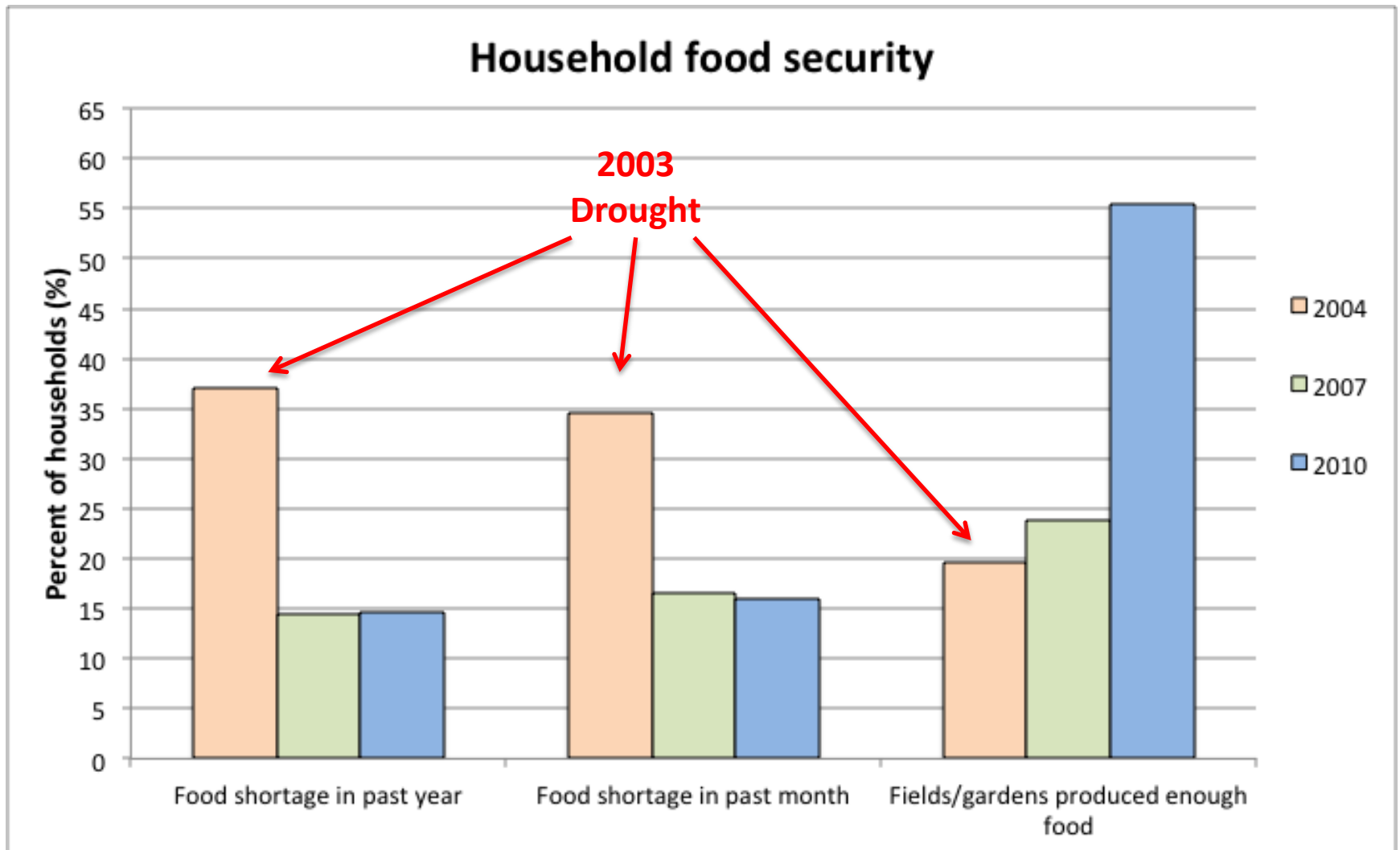


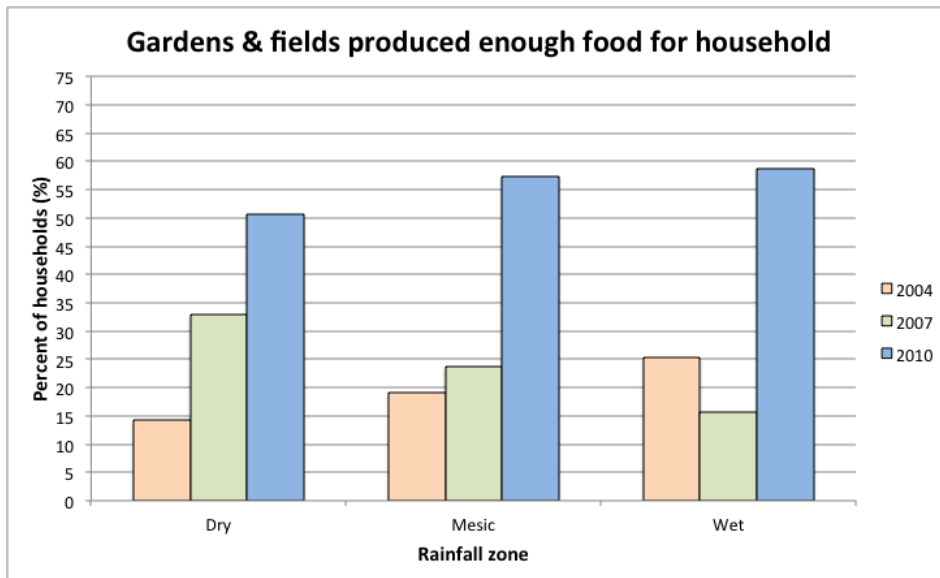
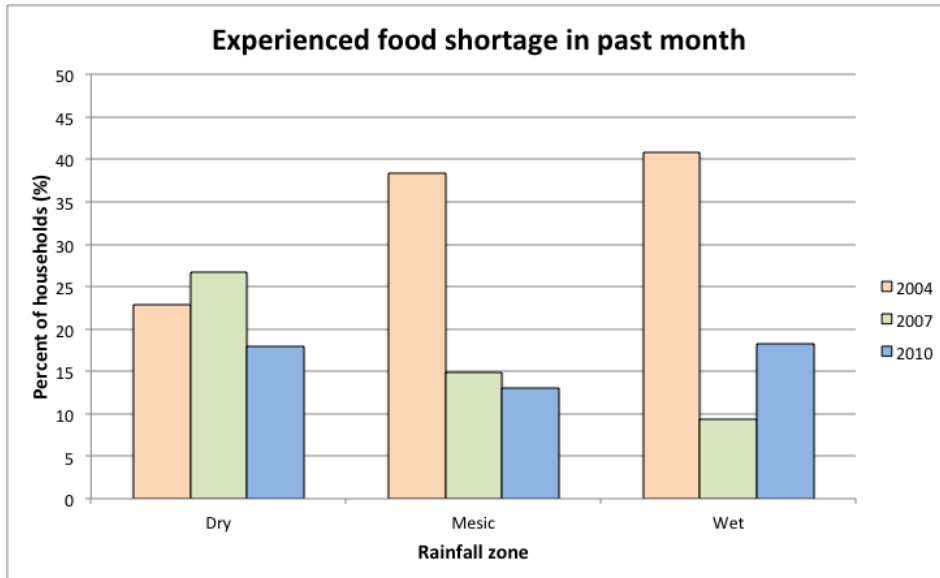
Methods

- Agincourt HDSS: 31 villages, 21 000 households, 110 000 people in 2015
- Open-source sample of HDSS household data
- Food security module: 2004, 2007, 2010
 - Experience of food shortage in last 12 months & 30 days
 - Sufficiency of food production by home gardens & fields
 - Use of wild fruit to mitigate food shortage
 - Fruit produced in home gardens & fields (indigenous & domesticated)
- n=1009, 1041, 1122 households
- Desc. stats & mixed effects models

Results

Food security

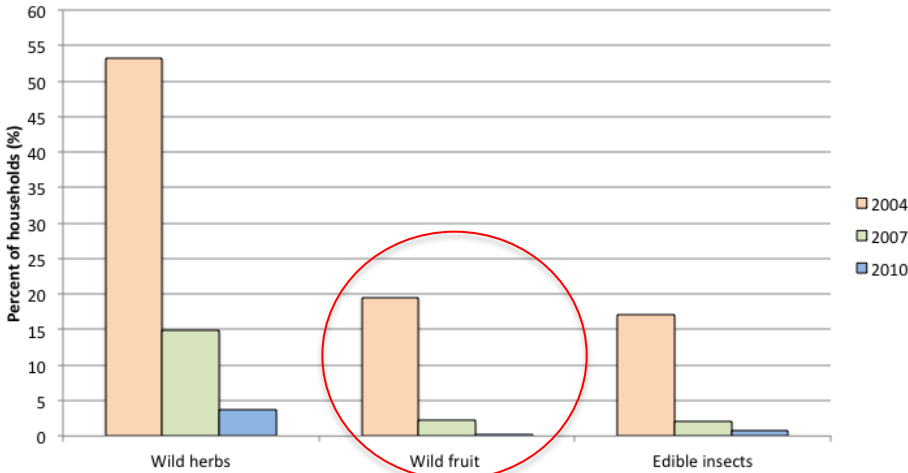




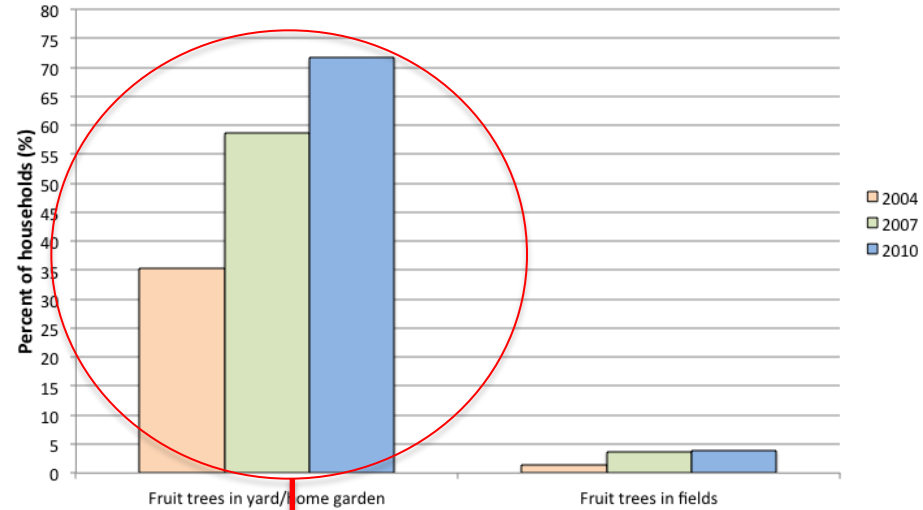
- Food (in)security varies temporally & spatially, (even at quite fine scale)
- Patterns are complex: multiple interacting factors
- Need for longer time series

Use of trees

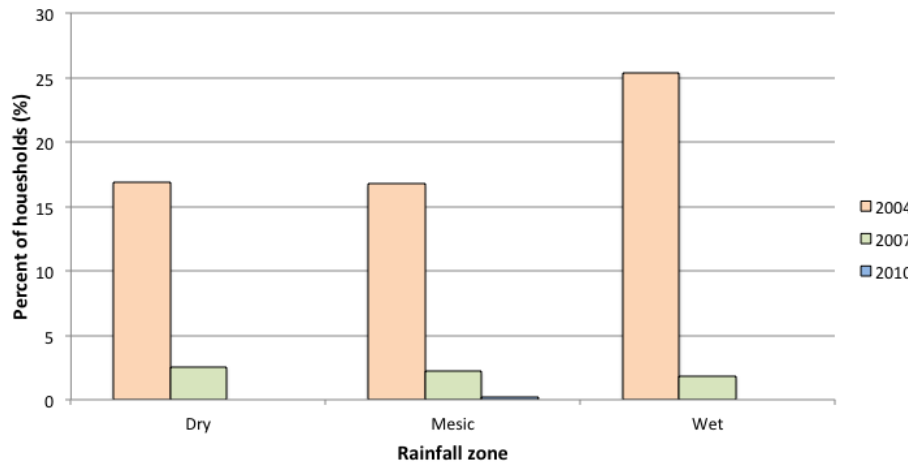
Gathered wild foods to compensate for shortfall from gardens & fields



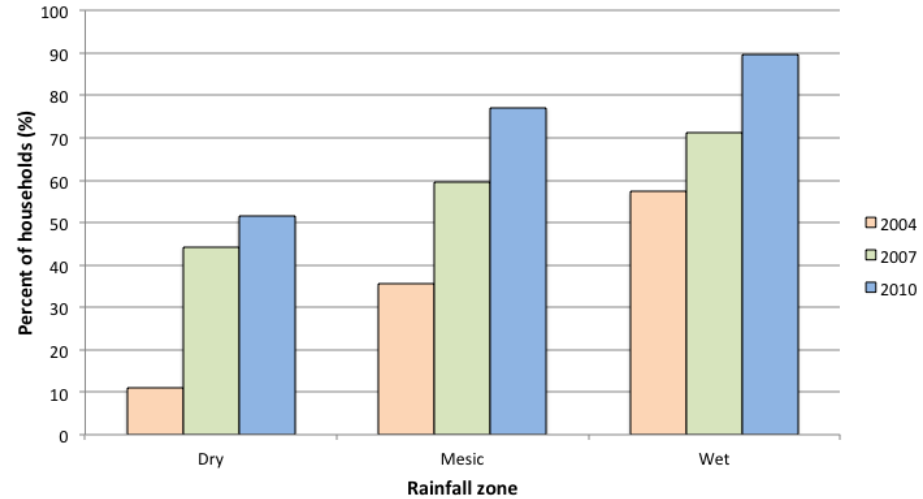
Use of fruit trees



Gathered wild fruit to compensate for shortfall from gardens & fields



Fruit trees in yard/home garden



Food security vs use of trees

- Key household determinants of food security:
 - Household size (-ve)
 - Prime-age adults (+ve)
 - Female head (-ve)
 - Socio-economic status
 - Cooked with wood (-ve)
 - Number of assets owned (+ve)
 - Location: village/rainfall zone (random effects)
- After controlling for the influence of these

1) Experienced food shortage in past 12 months (odds ratios)

Resource use	2004	2007	2010
Used wild fruit to meet shortfall	1.54	2.92	ns

2) Experienced food shortage in past month (odds ratios)

Resource use	2004	2007	2010
Used wild fruit to meet shortfall	1.36	4.97	ns
Fruit from trees in home garden	ns	0.67	ns

3) Garden/fields produced enough food (odds ratios)

Resource use	2004	2007	2010
Fruit from trees in home garden	3.30	4.71	1.54
Fruit from trees in fields	ns	3.69	3.13

Linking with more detailed panel data

- **SUCSES study** (Sustainability in Communal Socio-Ecological Systems)
 - Longitudinal household livelihoods panel study
 - N=590 households, 9 settlements in Agincourt HDSS
 - 2010-2014
 - Annual survey of:
 - Assets, income & expenditure
 - Natural resource use (*including trees in yards/fields; wild foods*)
 - Agriculture & livestock
 - Livelihood shocks
 - Food security

Conclusion

- Able to track food security, vulnerability to climate impacts, and reliance on local ecosystems
 - Simple, qualitative variables (food security & resource use), but available for whole population longitudinally
 - Useful for monitoring trends & exploratory analysis of relationships
 - Cross-HDSS comparative study & identify possible interventions
 - INDEPTH: HDSS longitudinal datasets have potential to contribute to SDGs **beyond health**
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