Food and nutrition security in tropical sub-Saharan Africa

A meta-analysis of harmonised rural household data

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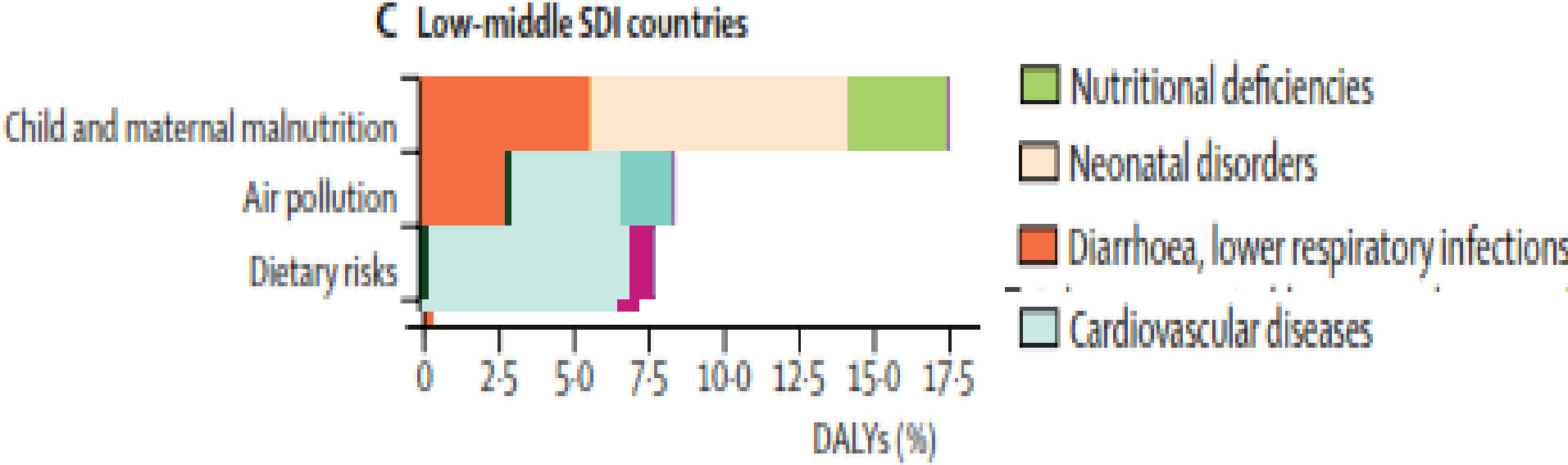
Overview

- Disease risk factors <- food security in SSA
- Knowledge gaps -> objectives
- Methods
- Results
- Limitations and further research
- Concluding remarks

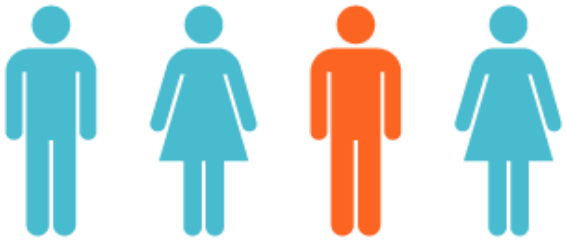
Risk clusters for global burden of disease

Triple burden of disease from malnutrition



Source: GBD 2016 Risk Factors Collaborators (2017)

Food and nutrition security in SSA



Chronic hunger

Severe food insecurity of access

Zinc deficiency

Calcium deficiency

Sources: FAO et al., 2018;

Joy et al., 2013

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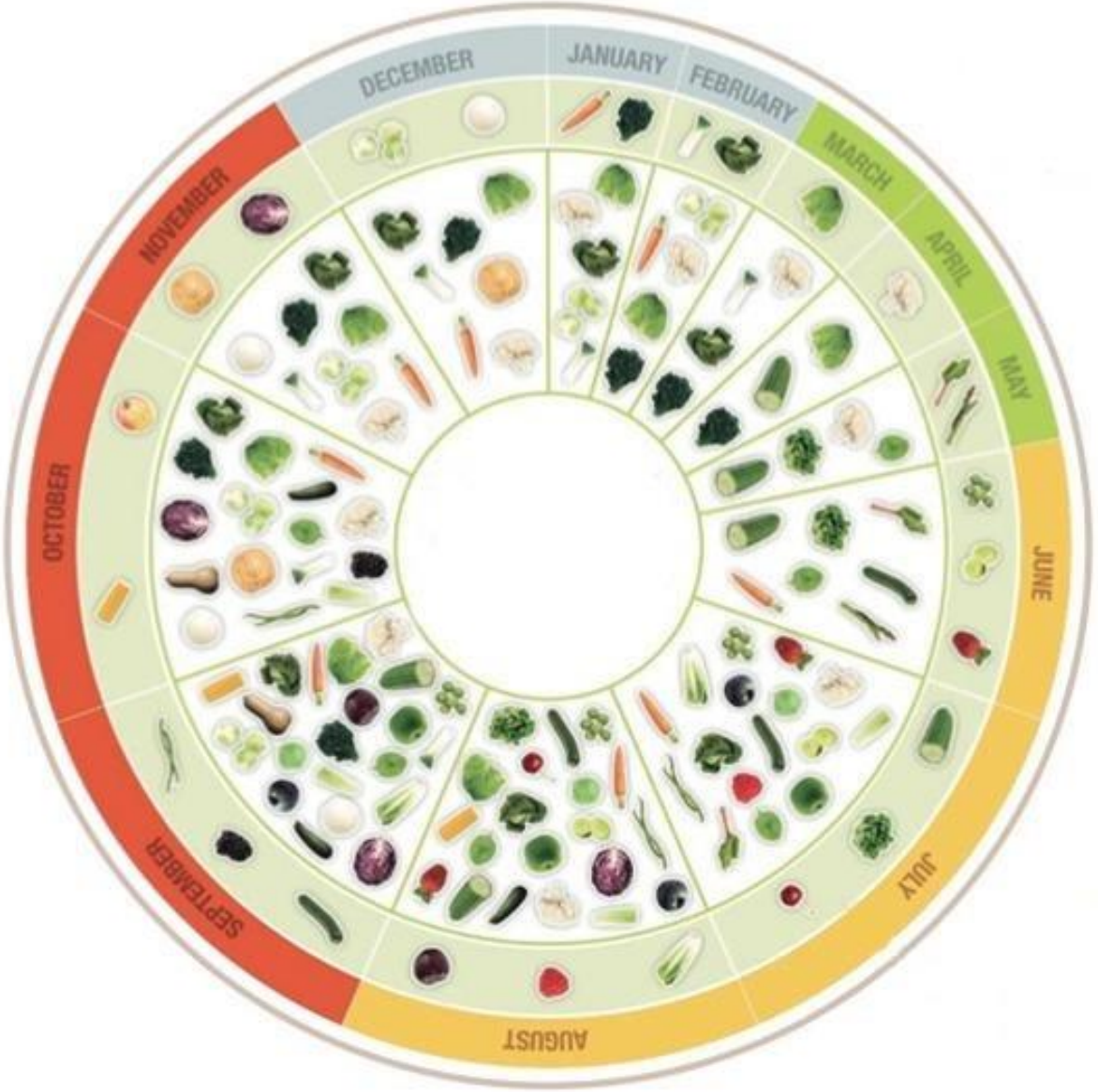
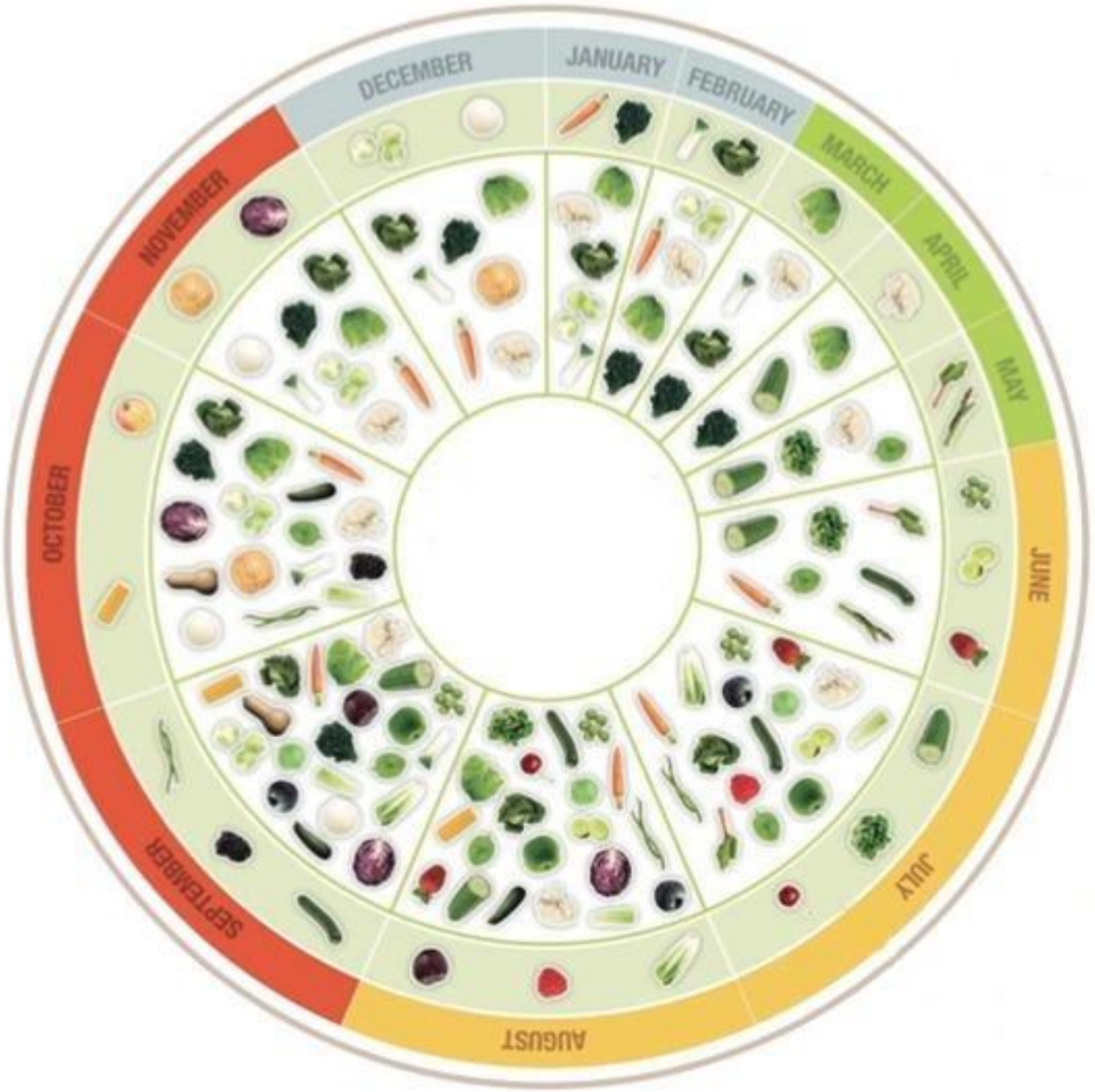
Temporal vs spatial representativeness



Diets vary

So, when to sample?

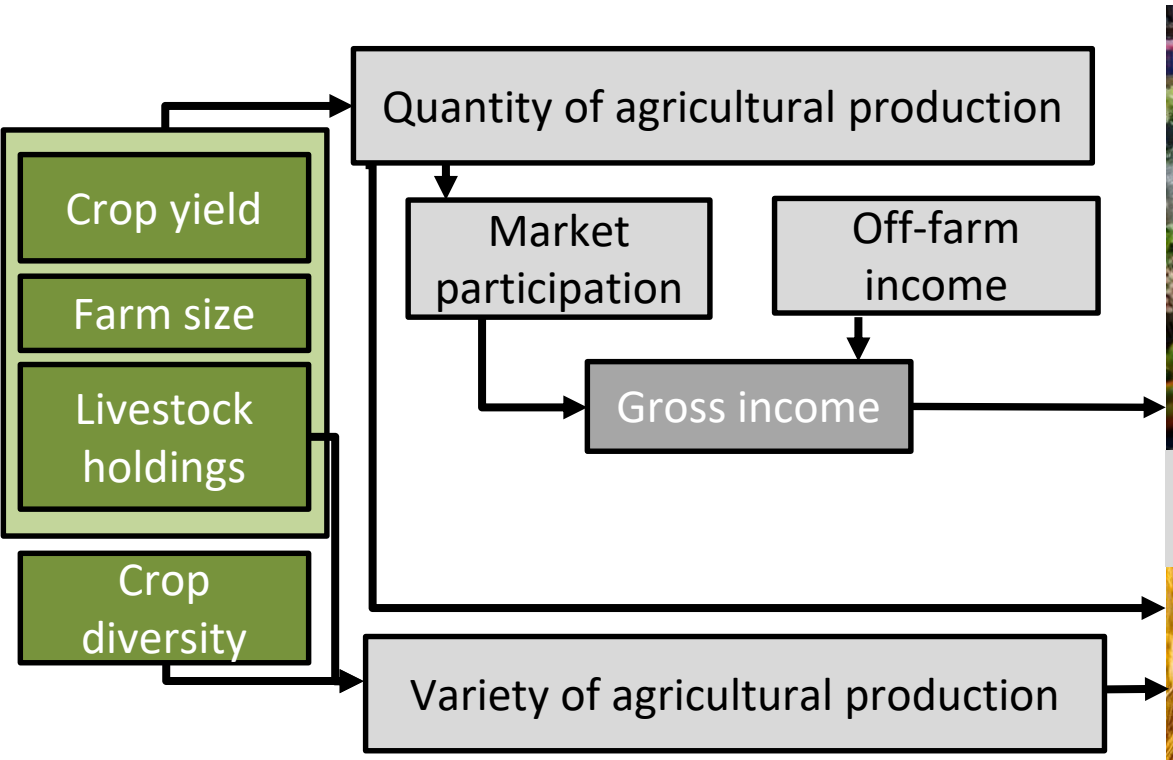
Temporal vs spatial representativeness



Households, regions and countries vary

So, how to sample enough frequently?

Pathways to food and nutrition security



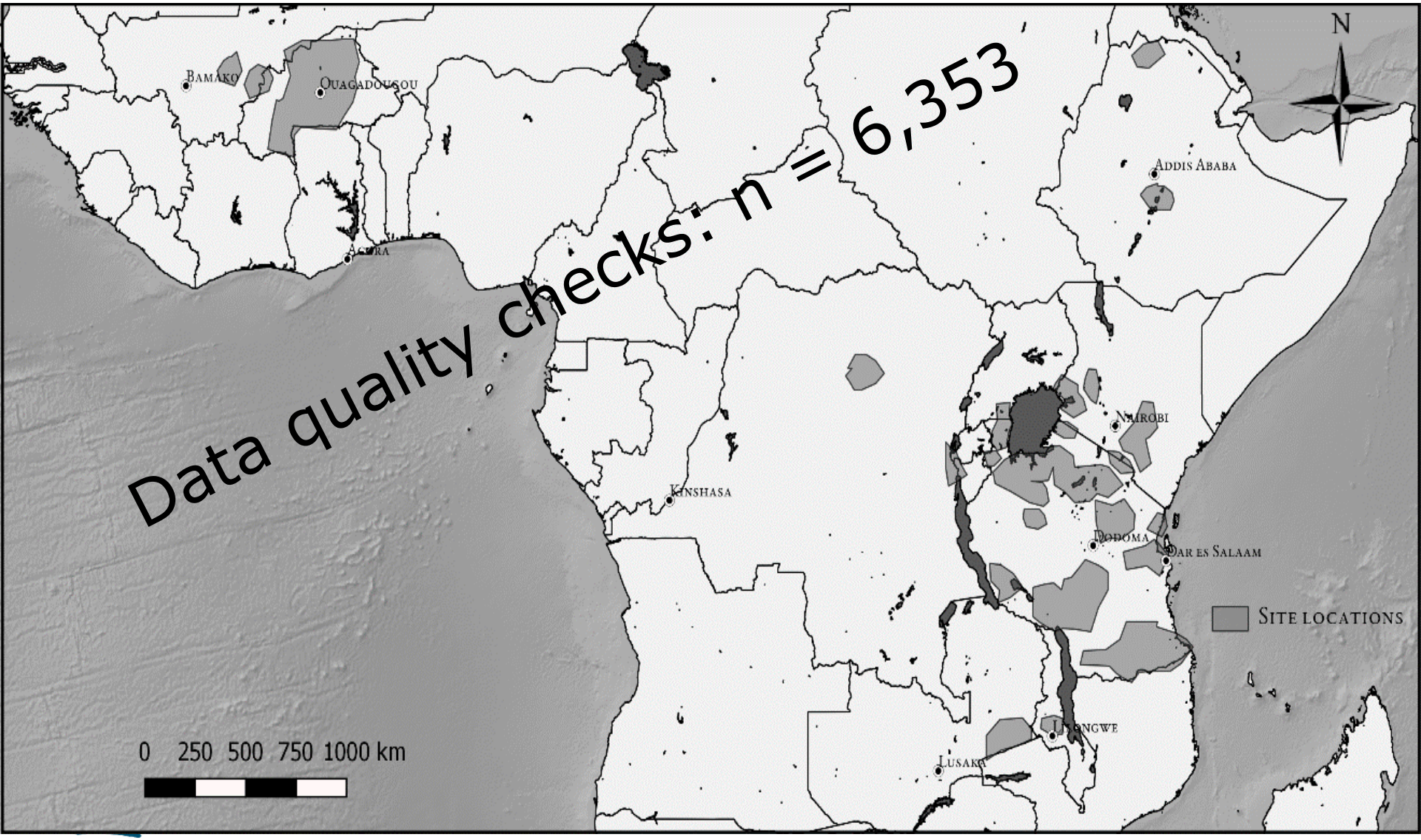
Food and nutrition security

Objectives

- Estimate prevalence of dietary gaps
- Identify associations between dietary gaps and rural livelihoods
- Understand food sourcing behaviour throughout the year

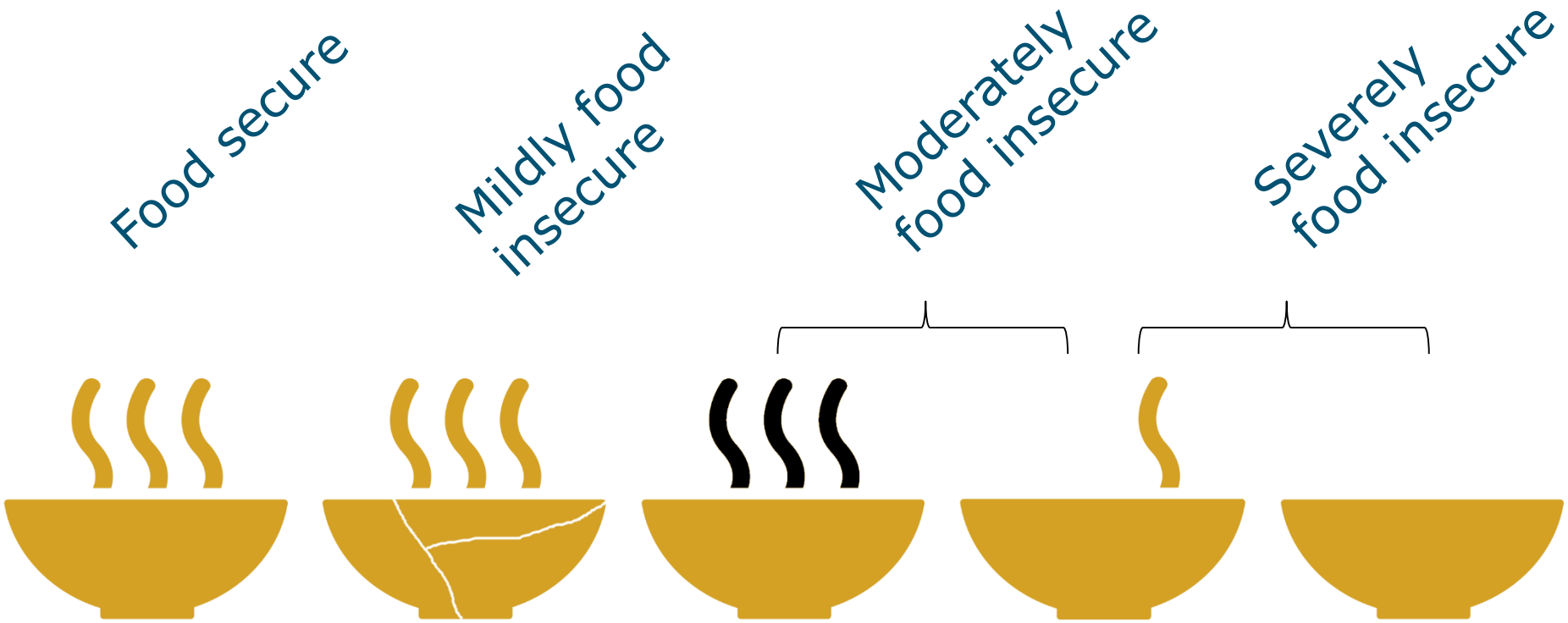
Methods

Study sites (n = 7,931)



Food and nutrition security indicators

Household food insecurity of access prevalence (HFIAP)



Food and nutrition security indicators

- Diet diversity
  - Recall ‘good’ and ‘lean’ periods
  - Sourcing channels – own farm vs purchase vs free

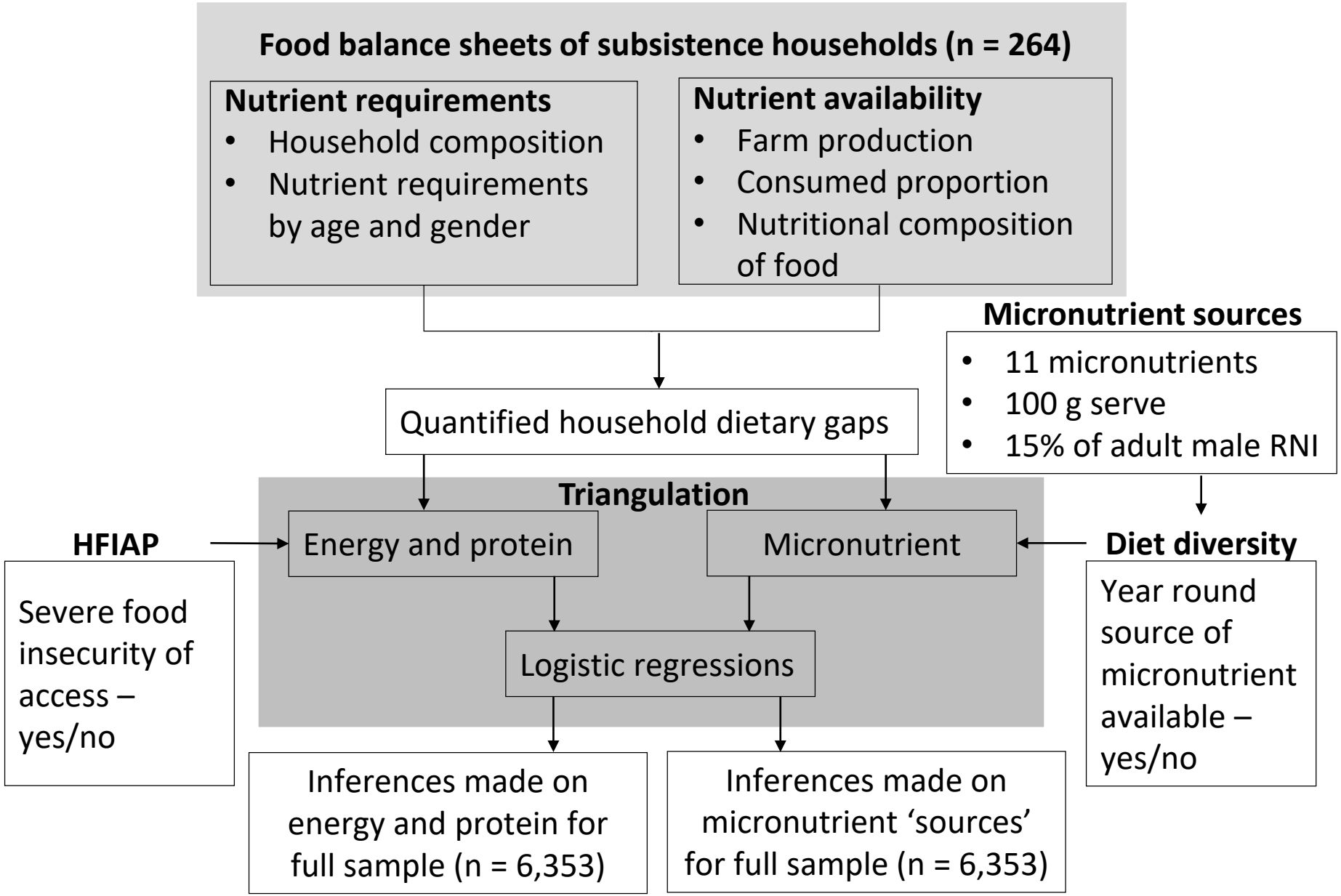




What does this indicator tell us about nutrition?






Food balance sheets of subsistence households (n = 264)
Nutrient requirements
• Household composition
• Nutrient requirements by age and gender
Nutrient availability
• Farm production
• Consumed proportion
• Nutritional composition of food
Micronutrient sources
• 11 micronutrients
• 100 g serve
• 15% of adult male RNI
Quantified household dietary gaps
Triangulation
HFIAP
Severe food insecurity of access – yes/no
Energy and protein
Micronutrient
Diet diversity
Year round source of micronutrient available – yes/no
Logistic regressions
Inferences made on energy and protein for full sample (n = 6,353)
Inferences made on micronutrient 'sources' for full sample (n = 6,353)

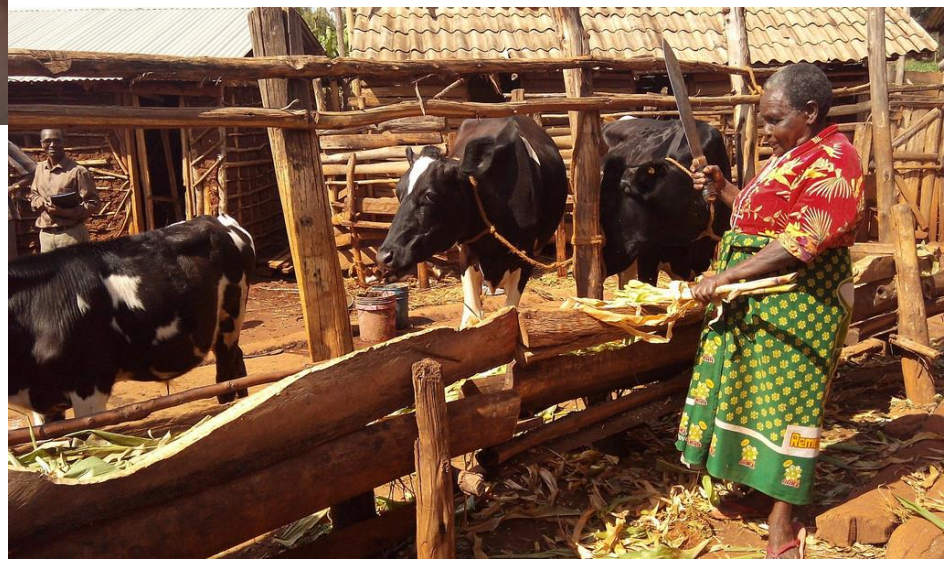
Farm type classification

- Specialised cropping

< 3 crops

- Diverse cropping

> 3 crops



- No livestock component

< 1.5 TLU

- Livestock component

> 1.5 TLU

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Results

Timing of food insecurity (n = 6,353)

Unpublished results removed

Diet diversity: associations with livelihoods

Unpublished results removed

Dietary gaps: associations with livelihoods

Unpublished results removed

Channels of food sourcing by farm type

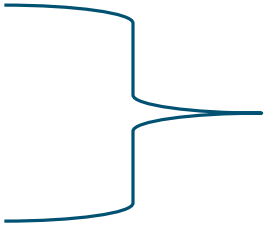
Unpublished results removed

Prevalence of dietary gaps (n = 6,353)

Unpublished results removed

Limitations and further research

- Meta-analysis – limits consistency
- Data quality
- Proxies of proxies



Validation?

- Food composition tables
- Household level – intra-household allocation
- Food preparation, sanitation, exclusive breastfeeding
- Health implications

Conclusions

- The occurrence and duration of scarcity varies
- There are several farm and household factors associated with food security – differing in association by AEZ
- Livestock keepers tend to have more diverse diets in the good and lean periods
- Household don’t necessarily supplement their lack of farm diversity through purchases
- Severe food insecurity and dietary gaps are not independent of farm type and AEZ

- There is more work to be done

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Donors

- AVCD = Accelerated Value Chain Development
- BMGF = Bill and Melinda Gates Foundation
- CCAFS = Climate Change, Agriculture and Food Security
- CLiP = Crop-Livestock integration Project
- FORETS = FOrmation, Recherche, Environnement dans la TShopo
- EU
- LSHTM-IMMANA = The London School of Hygiene …
- SAIRLA = Sustainable Agricultural Intesification Research and Learning in Africa
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