Spatial farming systems diversity contributes to nutrient intake variability among children in rural Ethiopia

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Agriculture, Nutrition and Health Academy Week

Rationale

- Micronutrient status estimates are often reported at national and regional level

- Regional level estimates are more administrative boundary based and lack context, particularly in rural settings
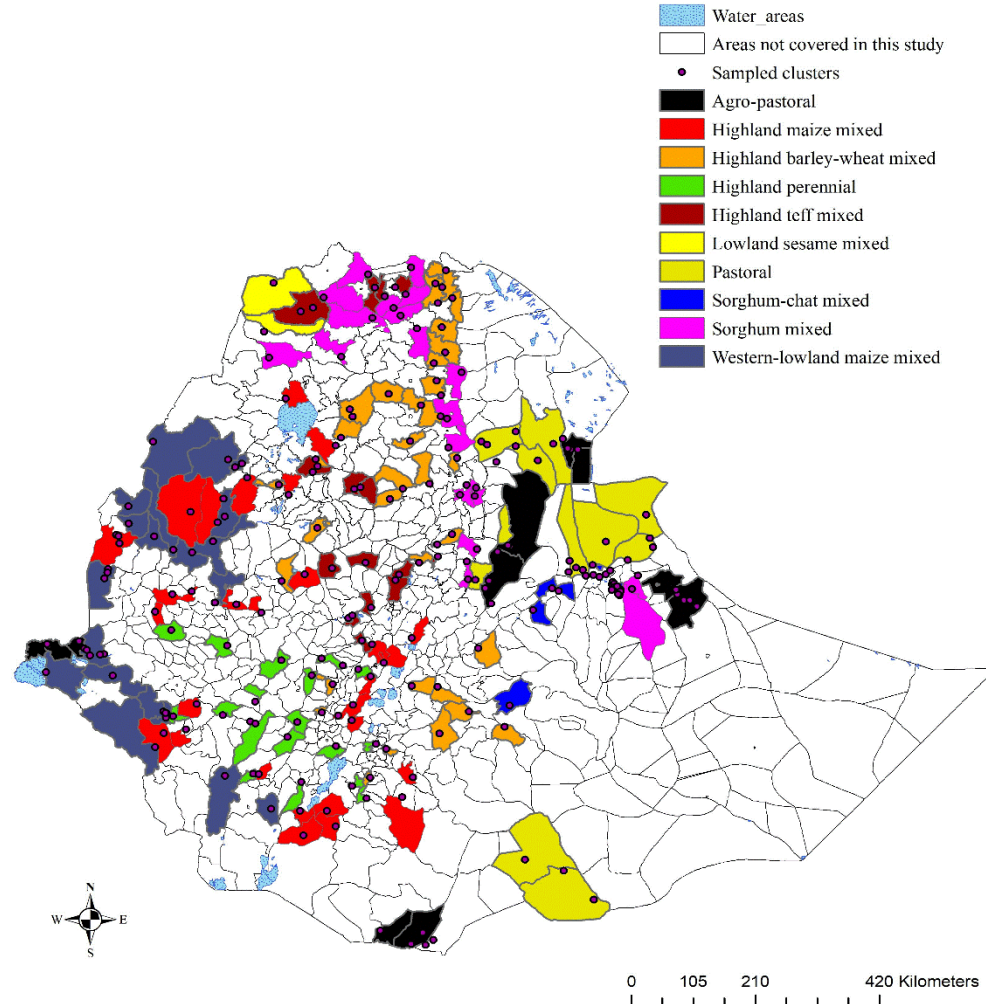
Methods

- We used a nationally representative intake data of 4902 children 6-35 months of age

- Rural clusters (n=228) were categorized in 10 dominant farming systems

- The National Cancer Institute (NCI) method was used to estimate the distribution of usual intakes of VA, iron and zinc

- Two approaches: EAR cut-off point (for VA and zinc) and full probability (for iron) to estimate inadequacy (%)

- A multi-level mixed model (a two level random intercept) was used to examine the association

Distribution of rural clusters based on farming systems

Legend:
- Water_areas
- Areas not covered in this study
- Sampled clusters
- Agro-pastoral
- Highland maize mixed
- Highland barley-wheat mixed
- Highland perennial
- Highland teff mixed
- Lowland sesame mixed
- Pastoral
- Sorghum-chat mixed
- Sorghum mixed
- Western-lowland maize mixed

0   105   210   420 Kilometers
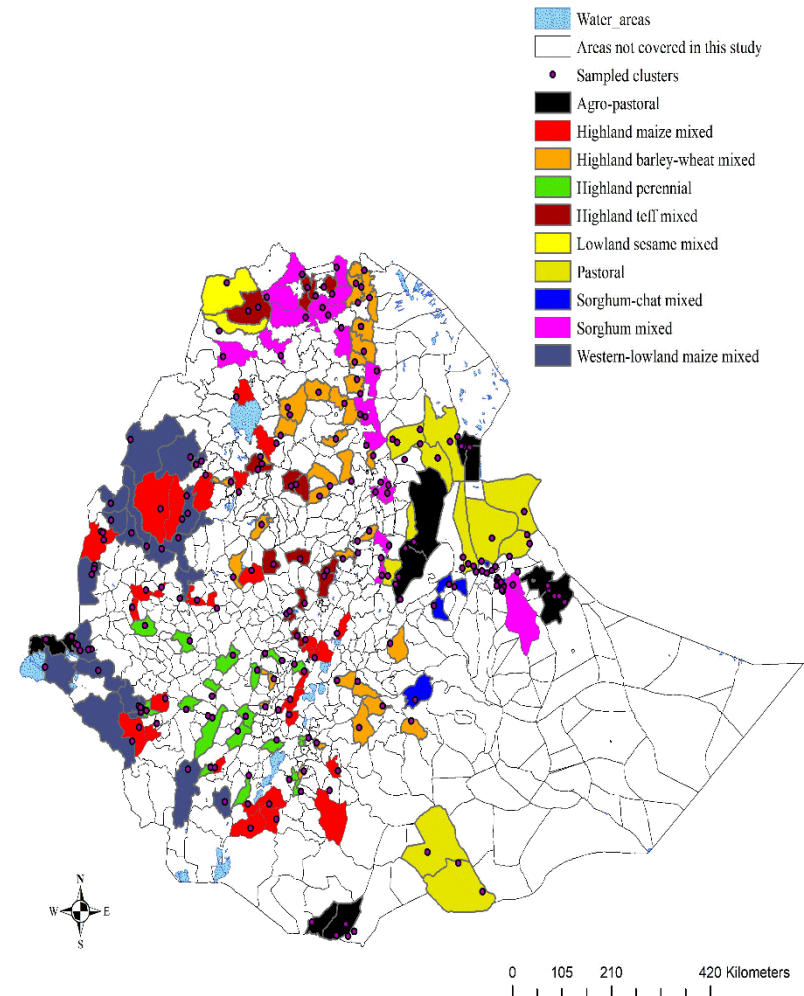
Results

- High prevalence of inadequate intakes for dietary vitamin A and zinc was observed across the 10 farming systems

- Low prevalence of inadequate intakes of iron, except in agro-pastoral and pastoral farming systems

Legend:
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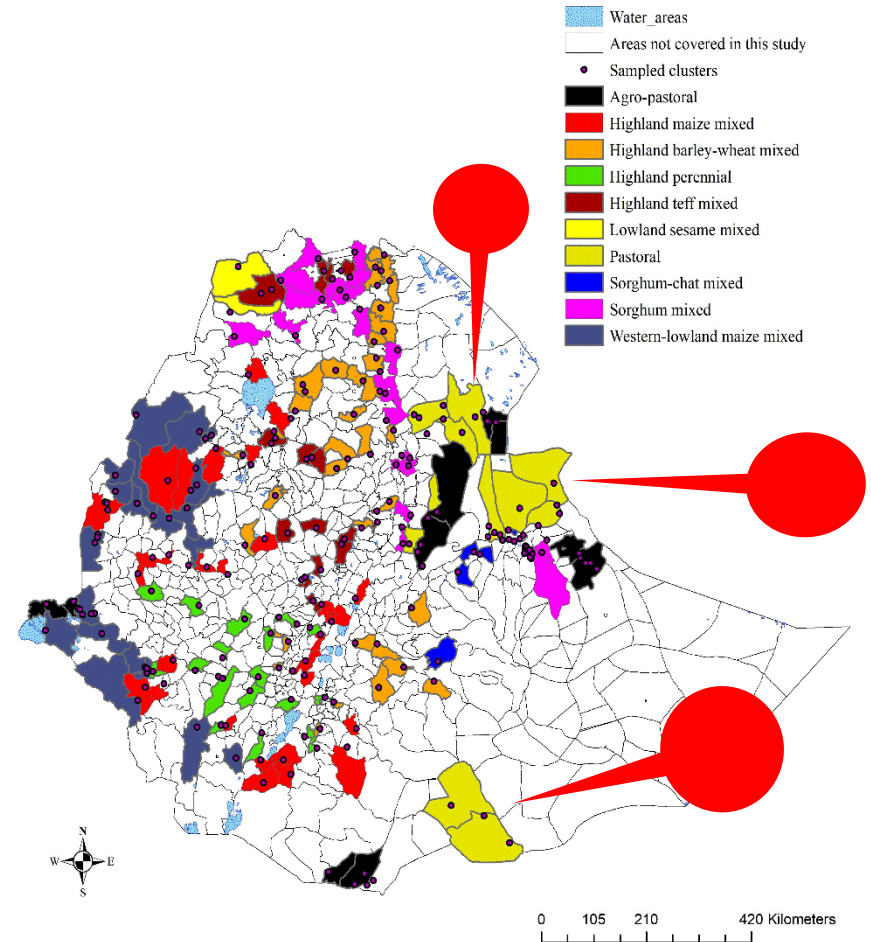
Results

- Diversity of farming systems observed at clusters:

    a) Contributed significantly to differences in the usual intakes

    a) Explained the observed variation in the usual intakes of vitamin A (48.2%), iron (57.2%) and zinc (26.7%)

Water_areas
Areas not covered in this study
Sampled clusters
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Highland maize mixed
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Highland perennial
Highland teff mixed
Lowland sesame mixed
Pastoral
Sorghum-chat mixed
Sorghum mixed
Western-lowland maize mixed

0   105   210   420 Kilometers

Conclusion

- The diets of rural children were inadequate to meet the requirements for micronutrients

- Understanding the context in rural setting could offer an entry point to explore the potential options to address the high prevalence of inadequate intakes of micronutrients

Questions

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