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Determinants of Malnutrition among Under-Five Children in Malawi:

Insights from the 2019 MICS Cross-sectional Survey

Mbachi Ruth Msomphora¹ *, Martin Mwale², Mariana Jumbe-Ngwira³

¹Department for Health and Care Sciences, UiT The Arctic University of Norway, Tromsø, Norway

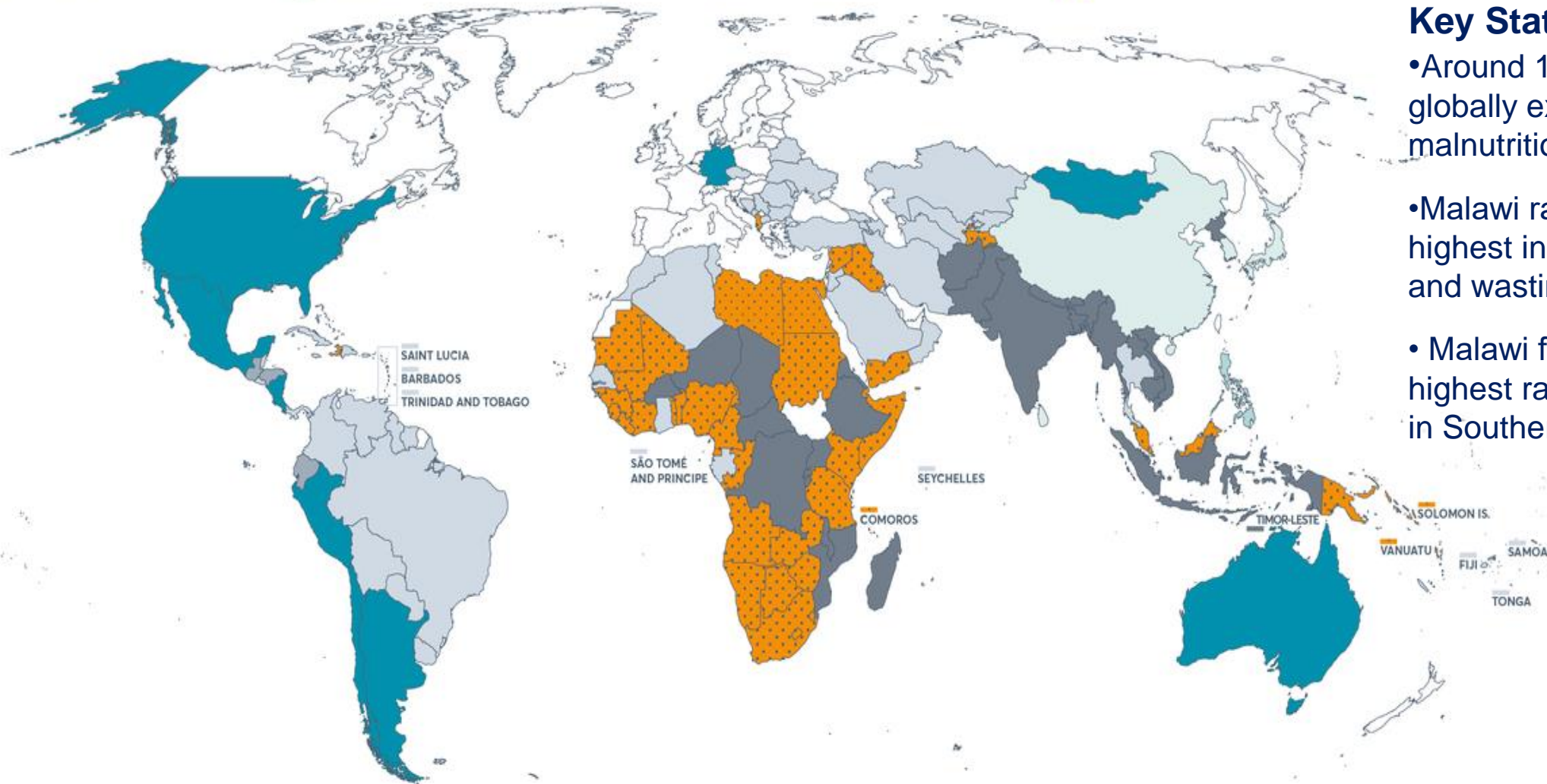
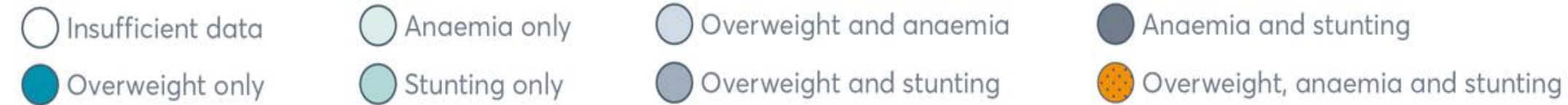
²University of Malawi, Department of Economics, Zomba, Malawi

³Ministry of Transport, Department of Policy and Planning, Lilongwe, Malawi

*Presenter & Corresponding Author: mbachi.msomphora@uit.no



Background:



Key Statistics:

- Around 12.5% of children globally experience malnutrition.
- Malawi ranks among the highest in Africa in stunting and wasting, 36% (MICS 2019-20).
- Malawi faces one of the highest rates of malnutrition in Southern Africa

Figure 2: A global map highlighting malnutrition burden status in various countries, including Malawi

Source: UNICEF/WHO/World Bank Group, joint child malnutrition estimates, NCD risk factor collaboration, WHO Global Health Observatory.

Study Objectives and Methods

Objective:

To identify the prevalence and determinants of malnutrition (stunting, wasting, underweight) among under-five children in Malawi.

Methodology:

- Study Design: Cross-sectional study using data from the 2019 Multiple Indicator Cluster Survey (MICS).
- Participants: 15,457 children aged 6-59 months from various regions of Malawi.
- Data Analysis: Ordinary Least Squares (OLS) regression analysis with a significance level of $\alpha = 5\%$.

Table 1: Summary of Participant Demographics, Sample Sizes, & Key Variables

Variable	Frequency (%)
Age (6-59 months)	15,457
Gender (Male/Female)	52/48
Matrilineal kinship (%)	68
Male-headed households (%)	70
Urban/Rural (%)	84/16
Under-5 Mortality rate (per 1000 live births)	61

Key Definitions

Malnutrition Metrics:

- **Stunting:** Height-for-age index below 2 standard deviations of the WHO Child Growth Standards.
- **Wasting:** Weight-for-height index below 2 standard deviations of the WHO standards.
- **Underweight:** Weight-for-age below 2 standard deviations.

Table 2: Growth Standards diagram showing malnutrition thresholds

Indicator	Anthropometric indices
Height-for-Age < 2	Stunting (chronic malnutrition)
Weight-for-height < 2	Wasting (acute malnutrition)
Weight-for-age < 2	Underweight (acute and chronic malnutrition)

Prevalence of Malnutrition

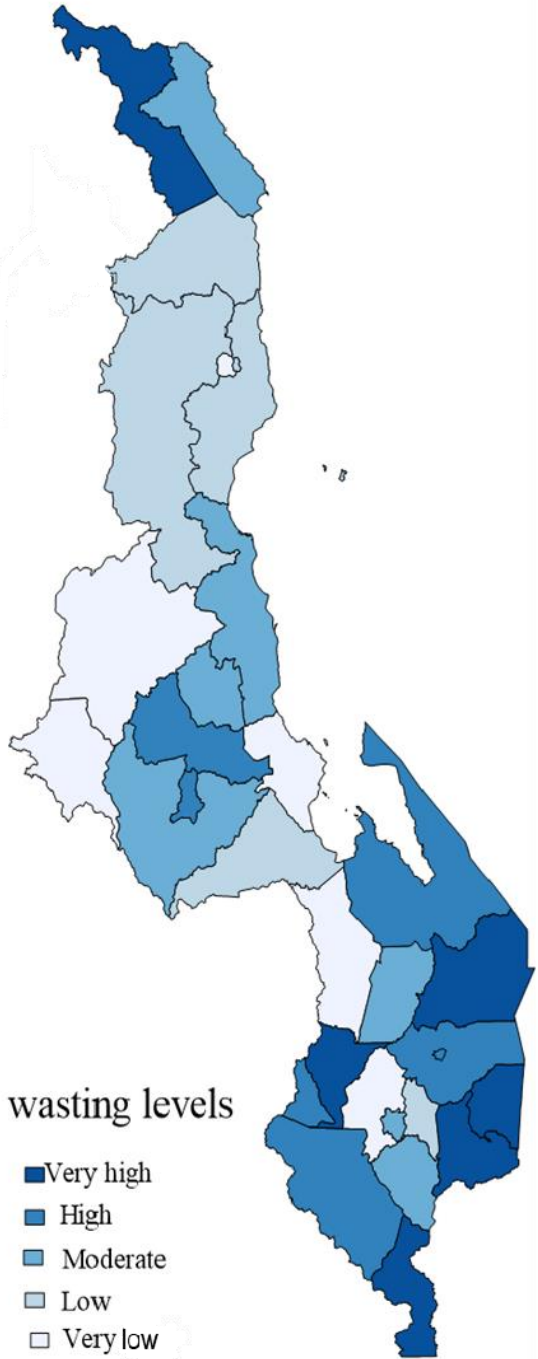
Findings:

- **Stunting:** Highly prevalent among older children and those from matrilineal kinships.
- **Wasting:** Associated with larger household sizes and less common in wealthier households.
- **Underweight:** Prevalent in older children and larger households, especially in southern Malawi.

Table 3: Prevalence of malnutrition by age, household wealth, and household headship

Variable	Stunting (%)	Wasting (%)	Underweight (%)
Age > 36 months	50	20	30
Wealthiest quintile	10	5	8
Male-headed Household	15	8	12

wasting 2019



wasting 2014

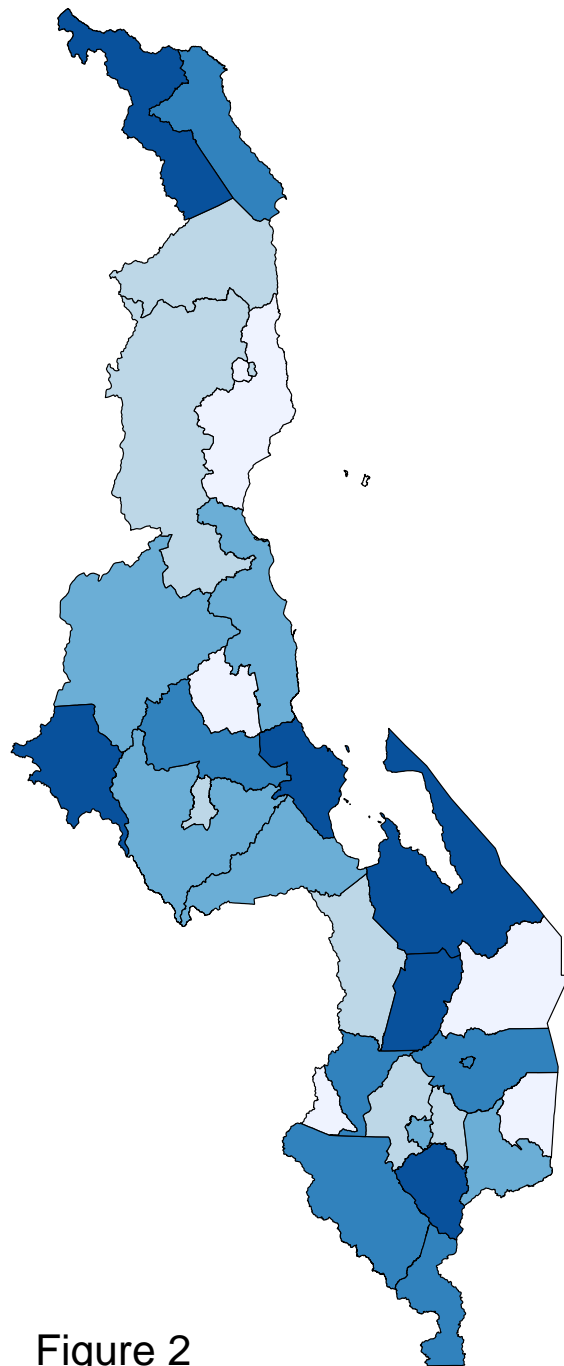
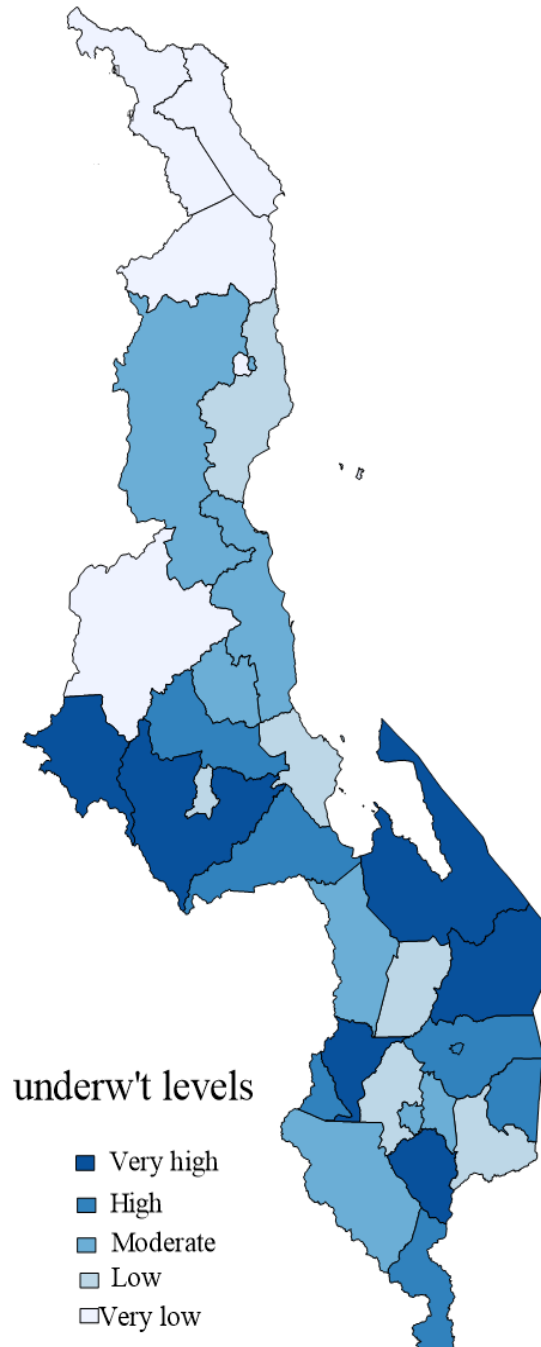


Figure 2

underweight 2019



underweight 2014

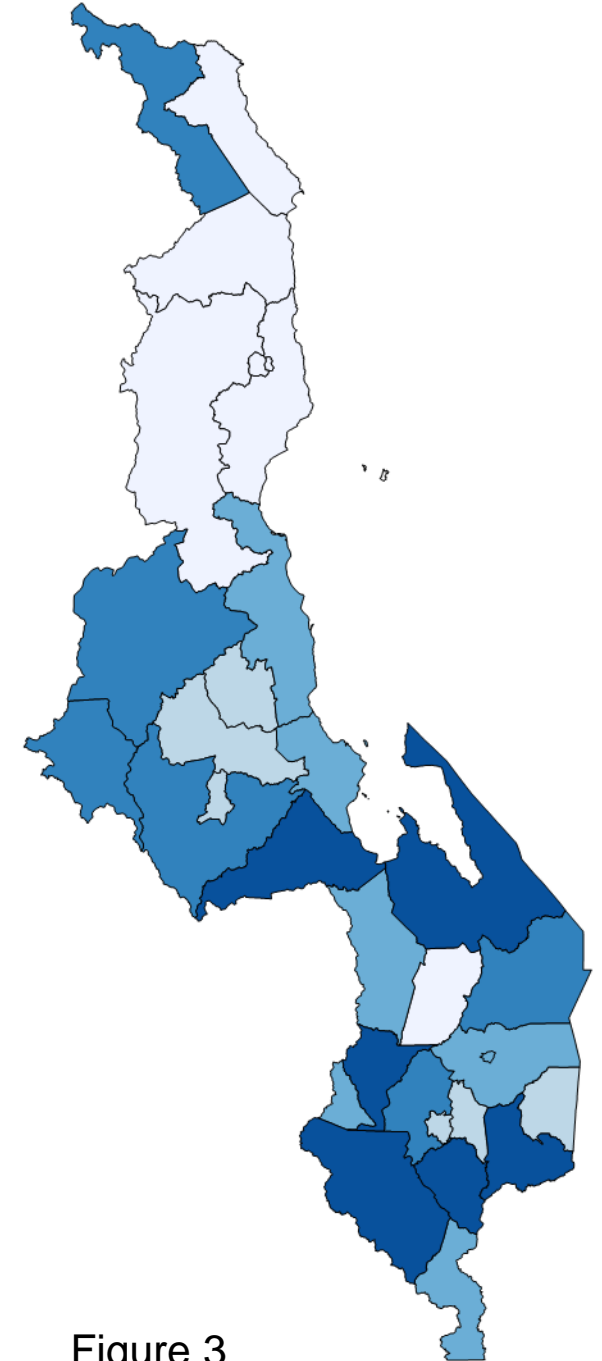


Figure 3

Factors Influencing Malnutrition

Key Determinants:

- Age: Older children were more likely to be stunted or underweight.
- Household Wealth: Wealthier households had lower rates of stunting and wasting.
- Household Headship: Female-headed households showed higher prevalence of stunting.
- Region: Underweight children were more common in southern Malawi.

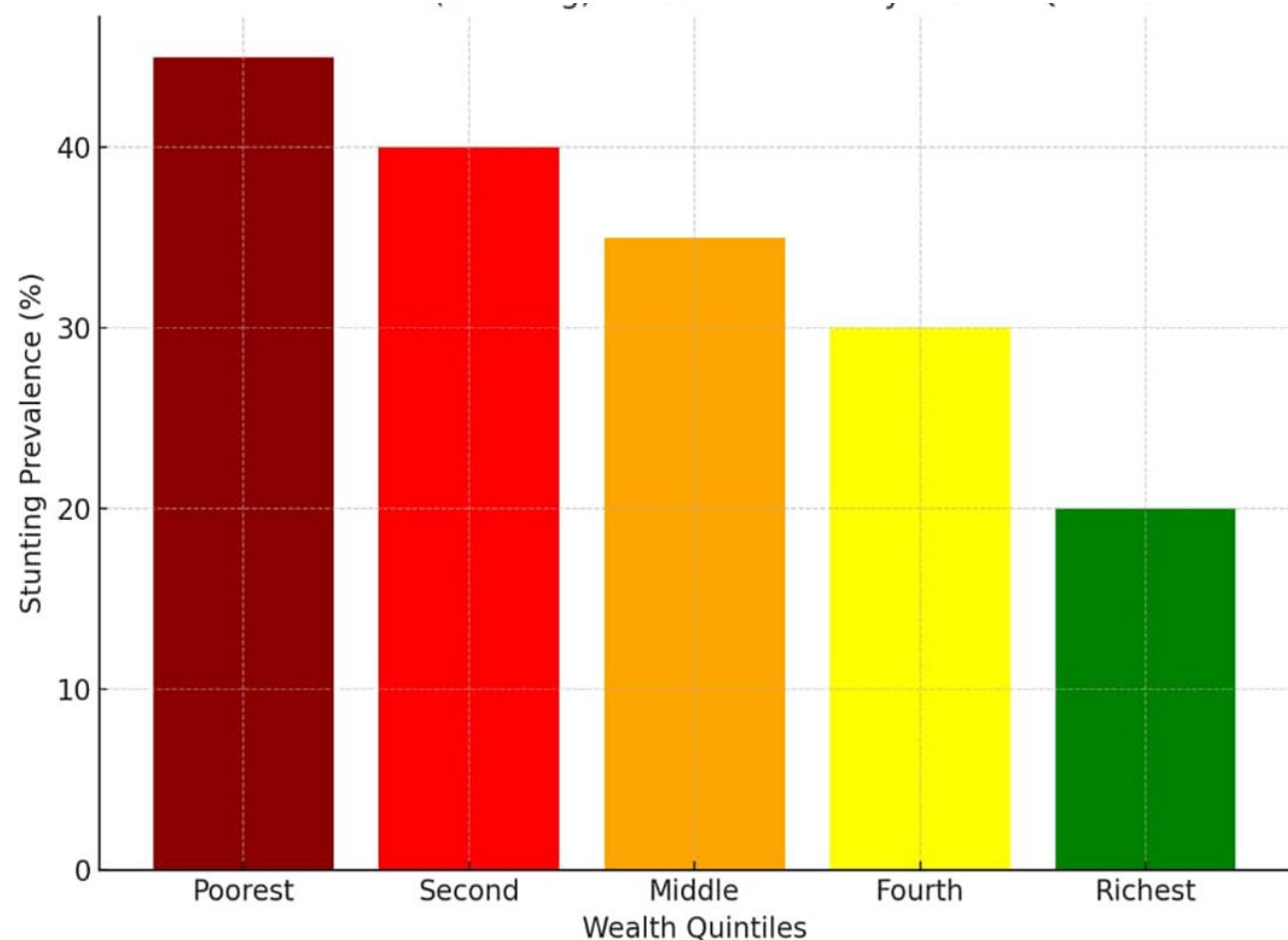


Figure 4: Malnutrition (Stunting) Rates in Malawi by Wealth Quintiles

Source: Retrieved from UNICEF MICS Malawi (2023)

Regression Analysis Results

Ordinary Least Squares (OLS) Regression

Significant Factors:

- Stunting: Age, kinship, farm input subsidy.
- Wasting: Household size, wealth, household headship.
- Underweight: Age, region, wealth.

Table 3: OLS Regression coefficients and p-values for malnutrition predictors

Predictor	Coefficients (Stunting)	Coefficients (Wasting)	Coefficients (Underweight)
Age	+0.018 (p<0.01)	-0.004 (p<0.01)	+0.008 (p<0.01)
Wealthiest Quintile	-0.062 (p<0.01)	-0.009 (p<0.01)	-0.03 (p<0.01)
Male-headed Household	-0.038 (p<0.01)	-0.010 (p<0.05)	-0.052 (p<0.01)

Interpretation of Results

The figures highlight: ongoing challenge of malnutrition in young children in Malawi, a country within the regions plagued by poverty, instability, and inadequate healthcare infrastructure.

Key Insights:

- **Age:** Older children are at higher risk for malnutrition due to extended exposure to food insecurity.
- **Wealth and Household Headship:** Wealthier, male-headed households are protective against wasting and stunting.
- **Regional Variation:** Higher underweight rates in southern Malawi suggest regional disparities in food access and healthcare.

Policy Recommendations

Targeted Interventions:

- Prioritise older children in malnutrition programs.
- Focus on female-headed households and poorer households.
- Expand the Malawi farm input subsidy program to improve household food security.

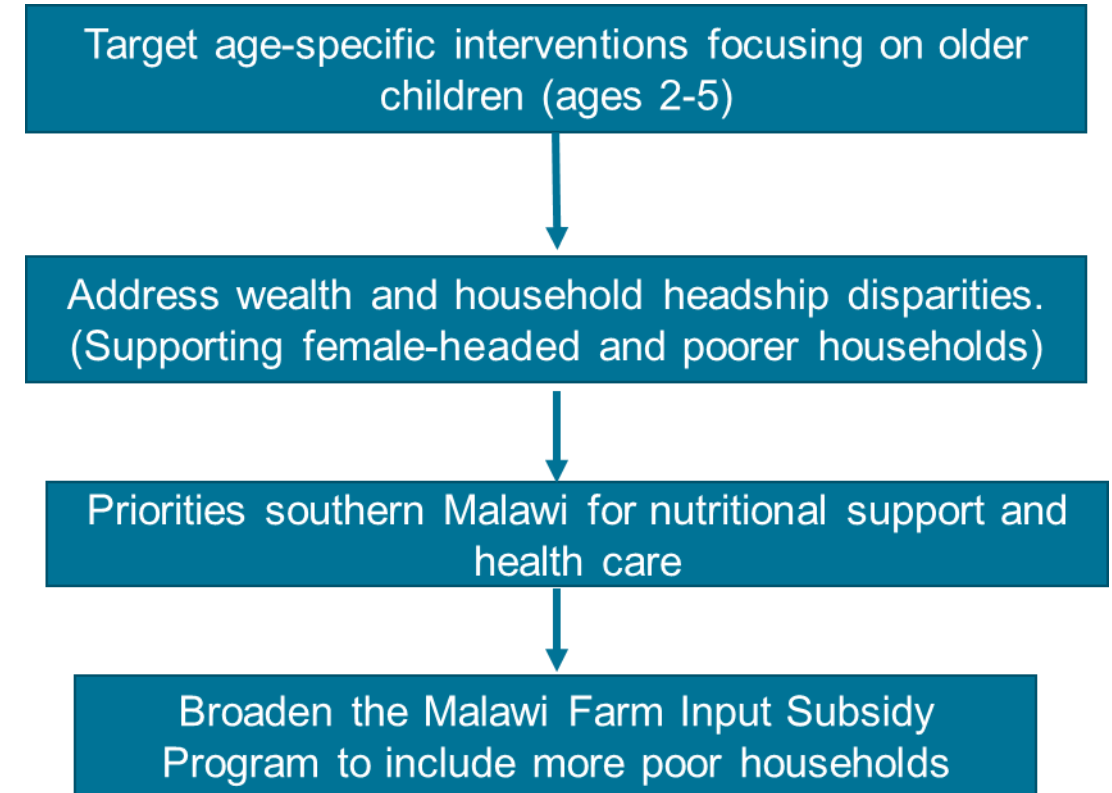


Figure 4: Flowchart outlining policy recommendations to reduce malnutrition in Malawi

Strengths and Limitations of the Study

Strengths:

- Large sample size and national representation.
- Robust statistical analysis using OLS regression.

Limitations:

- Cross-sectional design limits causality.
- Exclusion of children aged 0-5 months might miss key determinants.

Table 4: Strengths and limitations of the study

Strengths	Limitations
Large dataset (15,457 children)	No causal inference
Nationally representative	Exclusion of 0-5-month-olds
Use of OLS regression	Self-reported data may introduce bias

Conclusion

Summary:

- Malnutrition remains a critical public health issue in Malawi, especially among older children, female-headed households, and poorer regions.
- Interventions should target identified risk factors to reduce malnutrition rates.

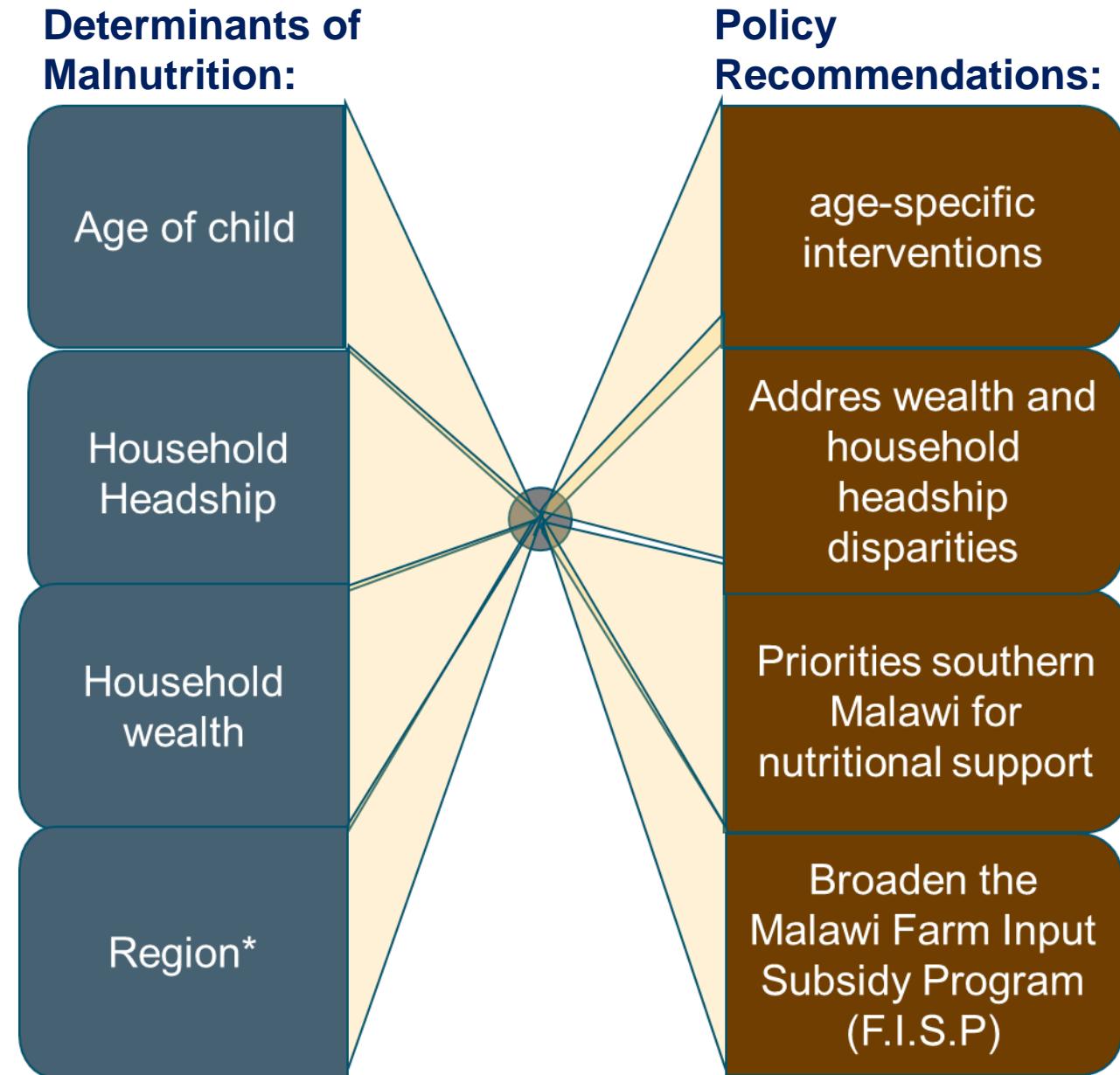


Figure 6: Infographic Summarising Key Findings and Action Recommendations

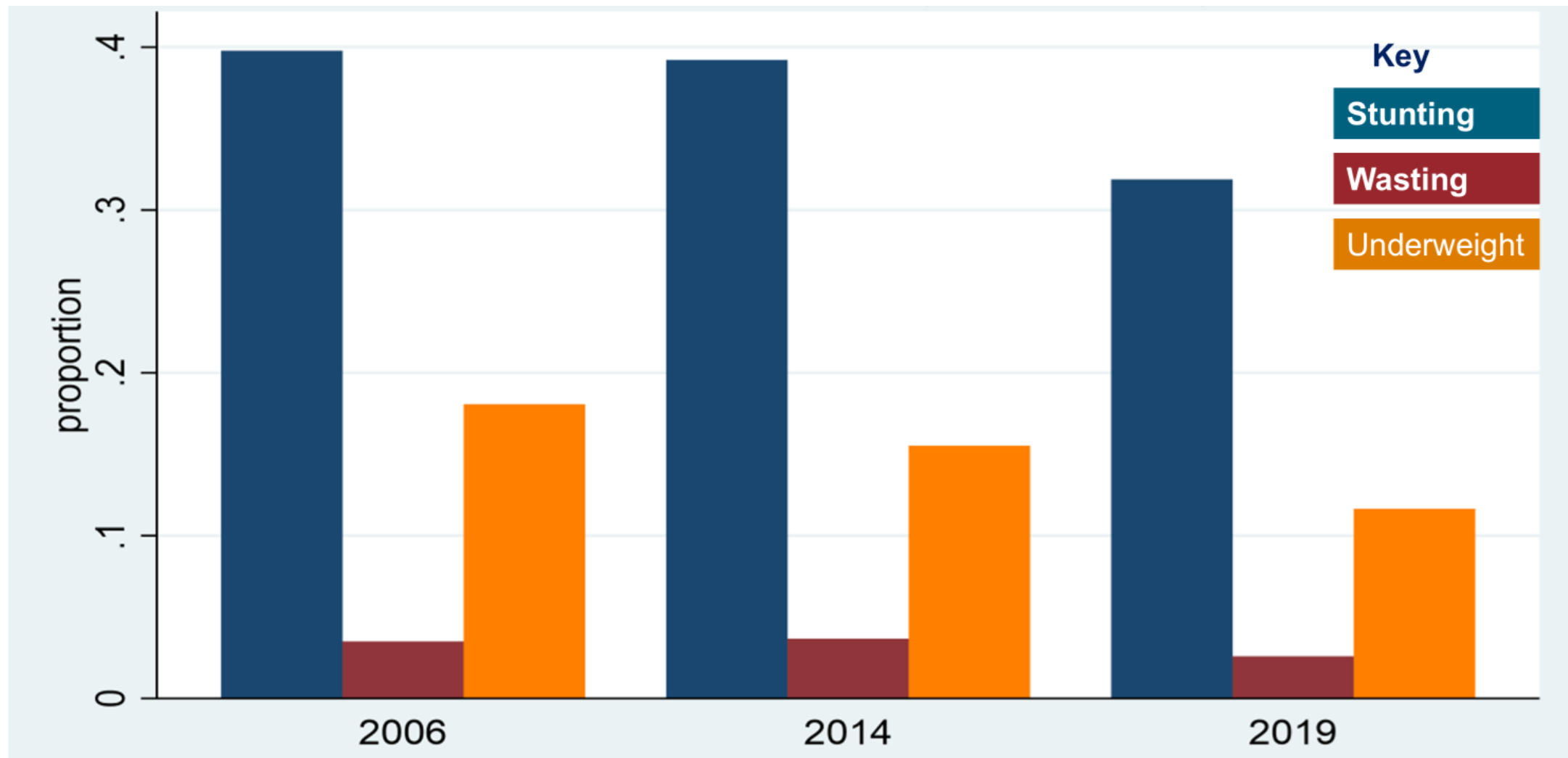


Figure 7: Manutrition trend (%) between the years 2006 and 2019

Source: MICS dataset

Acknowledgements and References

- Chilora, L. K., & Duchoslav, J. (2020). Determinants of children's nutritional status in Malawi (Vol. 36). Intl Food Policy Res Inst.
- Sassi, M. (2012). Short-term determinants of malnutrition among children in Malawi. Food Security, 4, 593-606.
- Chirwa, E. W., & Ngalawa, H. P. (2008). Determinants of child nutrition in Malawi. South African Journal of Economics, 76(4), 628-640.

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But, more so to:

