

Does Amount and Kind of Food Bought by a Household Vary by Indices of Wealth in Nepal?



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Feed the Future Innovation Lab
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Background

- In Nepal, 41% of children under 5 are stunted, 29% of children are underweight, and 18% of women of reproductive age are undernourished.¹
- More than 84% of rural households consume a high staple diet (more than 60% of kcal from energy-dense grains and starches).² Dietary intake of foods high in micronutrients such as Vitamin A and iron is low.³
- Agricultural production and infrastructure differ greatly between Nepal's agro-ecological zones, resulting in varying levels of income, food security, and nutritional status in the mountains, hills, and terai (plains).
- Increasing income may increase dietary diversity and consumption of micronutrient-rich fruits & vegetables and meat but knowledge of household-level factors, including income, that influence food expenditure in Nepal is limited.⁴⁻⁸

Objectives

- Characterize typical household food expenditures in Nepal and
 - Explore how food expenditure on staples, meat, and fruits & vegetables differs by wealth status across agro-ecological zones
- Understanding the determinants of food purchasing, including income, can inform programs and policies that aim to improve nutrition through income generation.

Methods

- Data from 4,286 households (HH) assessed in the **PoSHAN (Policy and Science for Health, Agriculture and Nutrition) Community Studies**, a national survey of 21 Village Development Committees across 3 agro-ecological zones in Nepal (May-Jul 2013)
- Assessed associations between HH wealth and expenditure on specific foods using reported monthly household expenditures and socio-economic status (SES) indicators such as HH assets, HH amenities, and HH construction materials. Wealth index created from SES indicators using Principal Components Analysis
- Categorized expenditure data on 40 food items into staples, meat/poultry, fruits/vegetables, eggs, dairy, legumes/nuts, oils, snacks, other (alcohol, sugar, tea, juice, soda)
- Tested for significant differences in median total food expenditure by zone with the Kruskal-Wallis method
- Estimated odds of greater than median expenditure on selected food groups between wealth groups, adjusted for zone, sex of head of HH, maternal involvement in household food purchases, maternal education, HH food production, using multivariate logistic regression

Results

Table 1. Household Income & Expenditure Characteristics, by Agro-Ecological Zone

	Overall N = 4286*	Mountains N = 793*	Hills N = 1127*	Terai N = 2366*
Median Monthly Food Expenditure, USD (IQR)	60 (34-104)	84 (44-157)	60 (36-97)	56 (31-94)
Median Monthly Non-food Expenditure, USD (IQR)	31 (13-67)	45 (18-91)	23 (10-56)	30 (15-64)
Median Reported Total Income in the Past 30 Days, USD (IQR)	1 (0-100)	30 (0-182)	0 (0-54)	50 (0-90)
Wealth Quintile (n,%)				
Lowest	858 (20.0)	43 (5.4)	217 (19.2)	598 (25.3)
2nd	867 (20.2)	162 (20.4)	211 (18.7)	494 (20.9)
3rd	862 (20.1)	270 (34.1)	204 (18.1)	388 (16.4)
4th	840 (19.6)	244 (30.8)	131 (11.6)	465 (19.7)
Highest	857 (20.0)	73 (9.2)	364 (32.3)	420 (17.8)

*N's w/in +/- 5%

Figure 1. Proportion of Median HH Expenditure Spent on Each Food Group

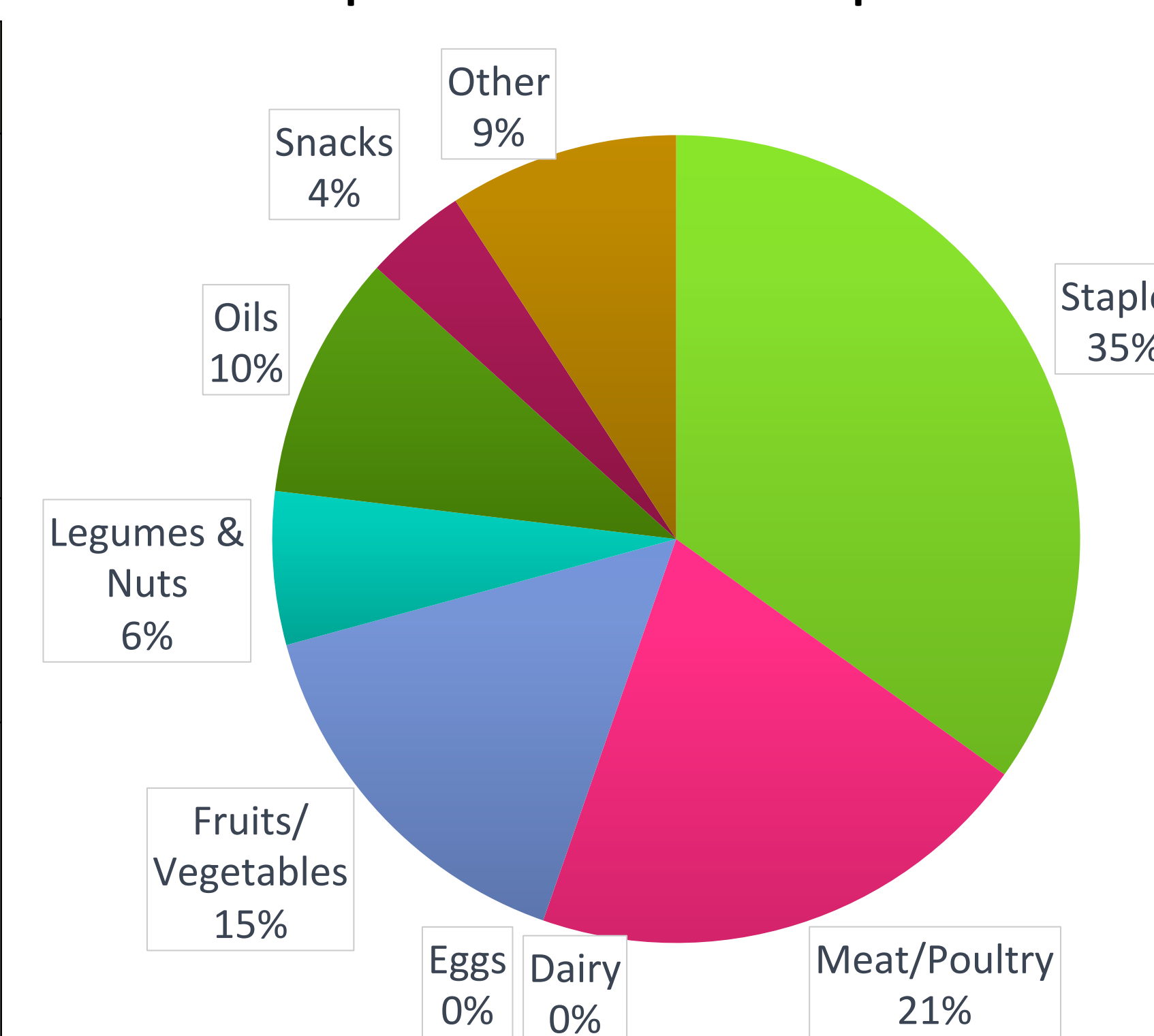


Figure 2. Median Expenditure on Select Food Groups by Wealth Quintile -- Mountains

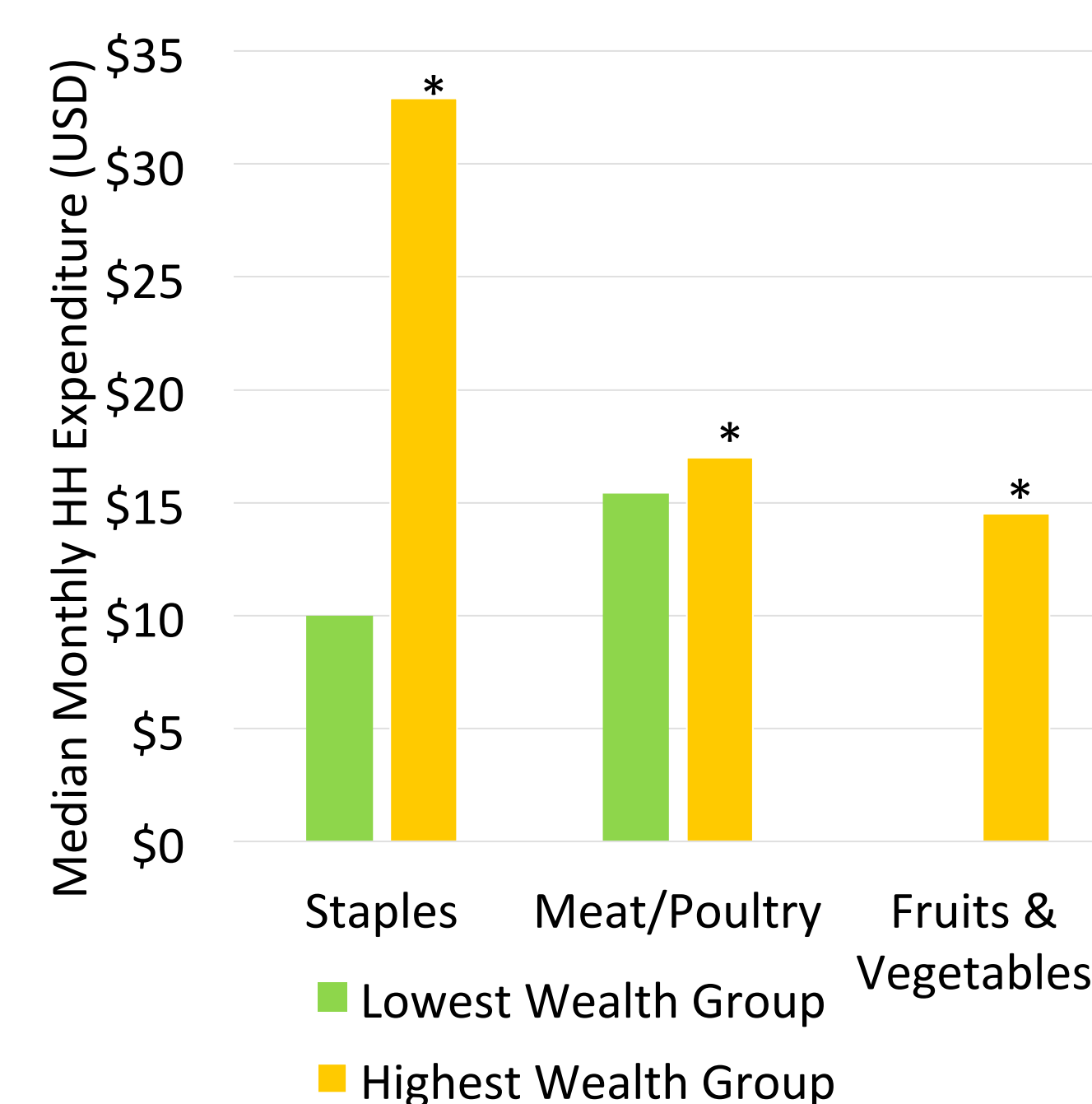


Figure 3. Median Expenditure on Select Food Groups by Wealth Quintile -- Hills

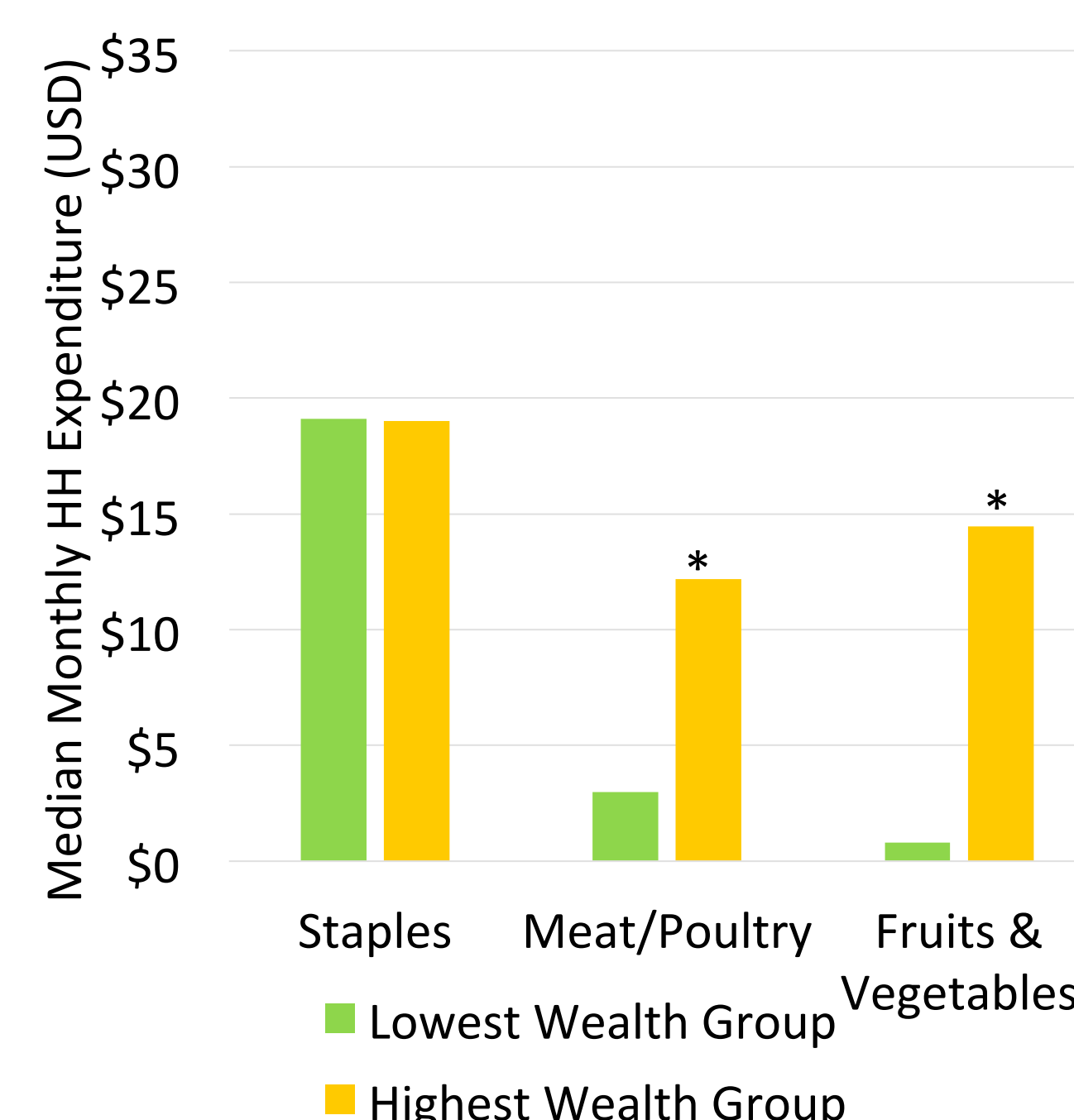
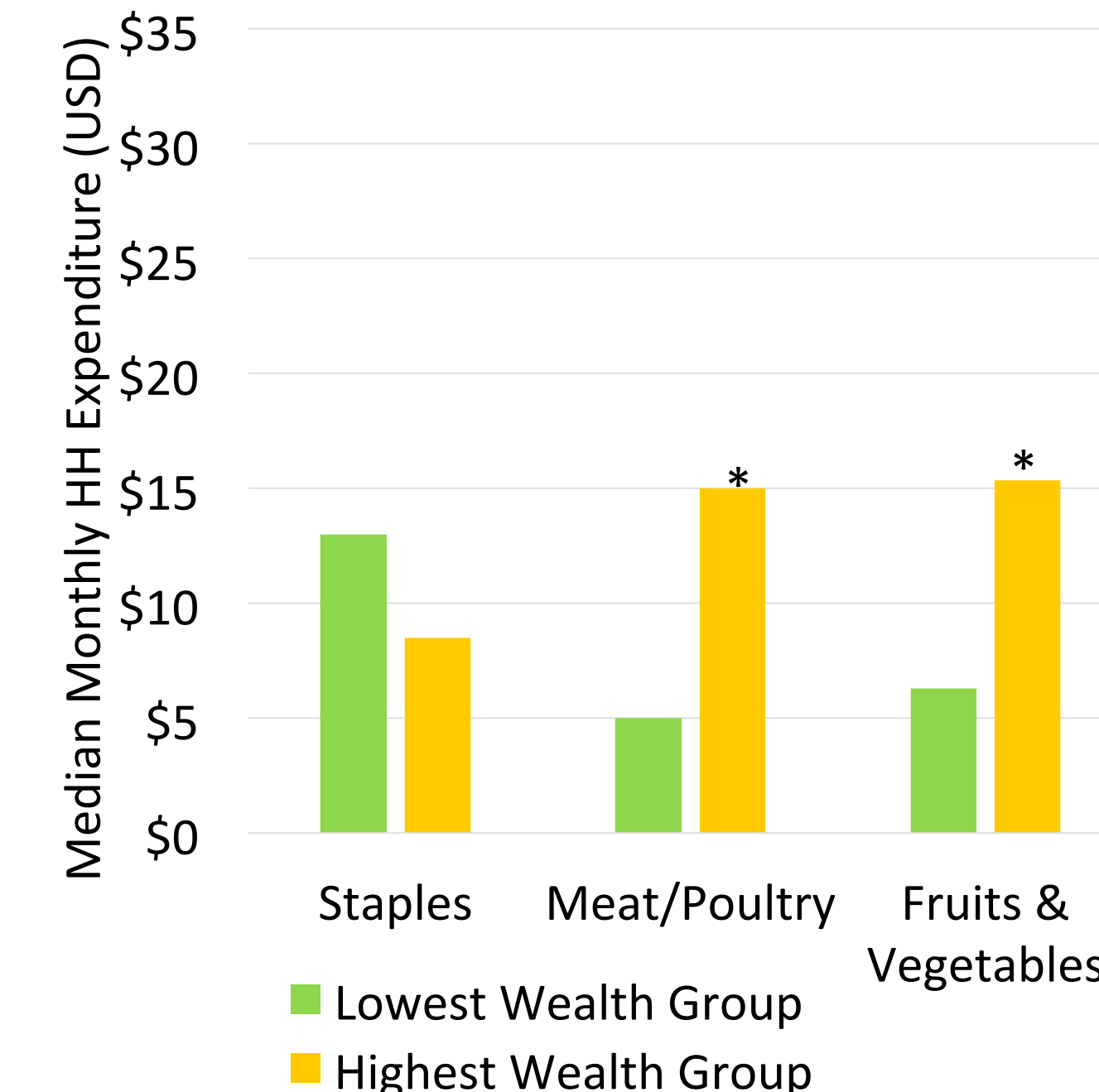


Figure 4. Median Expenditure on Select Food Groups by Wealth Quintile -- Terai



* Fig. 2-4: Significant difference in distribution of expenditure between highest and lowest wealth quintiles at p<.05

Table 2. Adjusted* Odds Ratios of Spending More Than the Median Household Expenditure on Select Food Groups, by Wealth Quintile

Wealth Quintile	Staples n=2143		Meat/Poultry n=1986		Fruits/Vegetables n=2142	
	OR (95% CI)	p-value**	OR (95% CI)	p-value	OR (95% CI)	p-value
Lowest	REF	--	REF	--	REF	--
2nd	.9 (.7-1.2)	ns	1.7 (1.4-2.2)	<.001	1.7 (1.3-2.2)	<.001
3rd	1.0 (.8-1.3)	ns	2.9 (2.3-3.6)	<.001	2.4 (1.8-3.2)	<.001
4th	1.0 (.8-1.3)	ns	3.9 (3.1-4.9)	<.001	4.2 (3.1-5.5)	<.001
Highest	.9 (.7-1.2)	ns	4.3 (3.4-5.5)	<.001	7.7 (5.5-10.7)	<.001

*For all food groups, OR adjusted for agro-ecological zone, sex of head of HH, maternal education. Staples and meat also adjusted for maternal involvement in food purchase decisions. Fruits/vegetables and staples also adjusted for vegetable or field crop production, respectively. **Significance determined at p<.05

Key Findings

Characterization of food expenditure:

- Median monthly HH food expenditure was 60 USD overall and significantly differed by zone (p=.0001), with the highest median expenditure in the mountains.
- Staples and meat/poultry products constitute more than half of the food budget. As expected, staple foods made up the largest portion of food expenditure, followed by meat and poultry, fruits and vegetables, and oils.

Associations between food expenditure & wealth:

- Overall, expenditure on all food groups was higher in HHs above the highest versus below the lowest wealth quintile (not stratified by zone).
- Adjusted odds of higher staples expenditure was not significantly different by wealth group.
- Odds of higher fruit/vegetable expenditure was higher in highest versus lowest wealth groups, adjusting for household factors.
- Adjusted odds of higher meat expenditure also increased with wealth.

Conclusion

Results suggest that higher income does translate into increased spending on more nutritious non-staple foods in Nepal, supporting policies and programs that aim to improve nutrition through income-generation and enabling poorer households to access nutritious foods via market purchases. Agro-ecological zone and other household factors also appear to play a role in food purchases and should be considered as well as income.

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