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Understanding the relationships of nutrition-agriculture research in Nepal: Findings of the Nutrition Innovation Lab

Shibani Ghosh, PhD

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GERALD J. AND DOROTHY R.
Friedman School of
Nutrition Science and Policy



INTRODUCTION

- What measurable impacts do **investments in agriculture** have on nutrition (positive and/or negative)?
- Does the **quality of nutrition governance** (individual and institutional commitment and capacity) affect the effectiveness and impact of nutrition policies and programs?
- What **biological mechanisms** must be better understood to design interventions to accelerate improved nutrition?



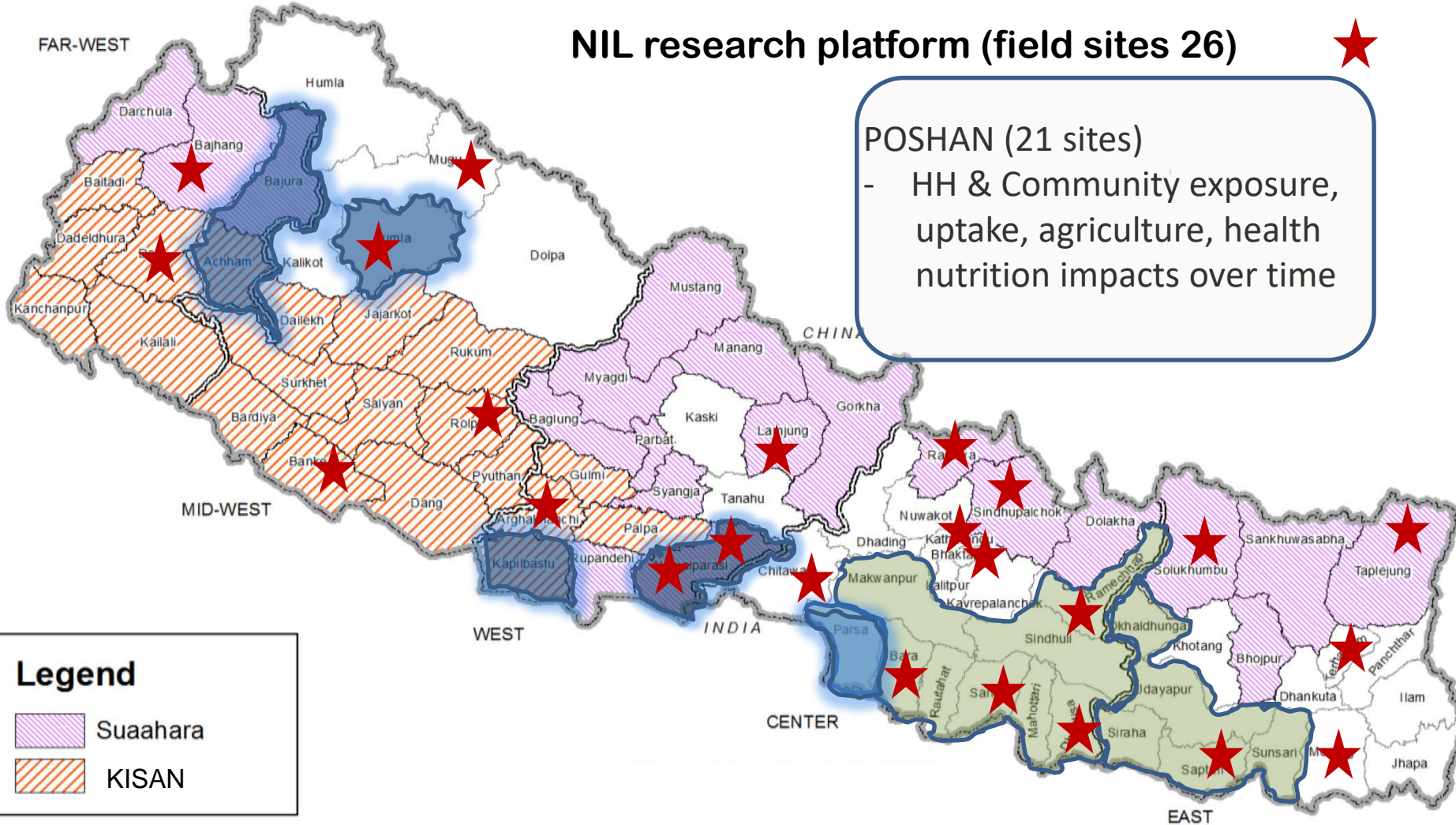
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NIL research platform (field sites 26) ★

POSHAN (21 sites)

- HH & Community exposure, uptake, agriculture, health nutrition impacts over time



Legend

- Suaahara
- KISAN

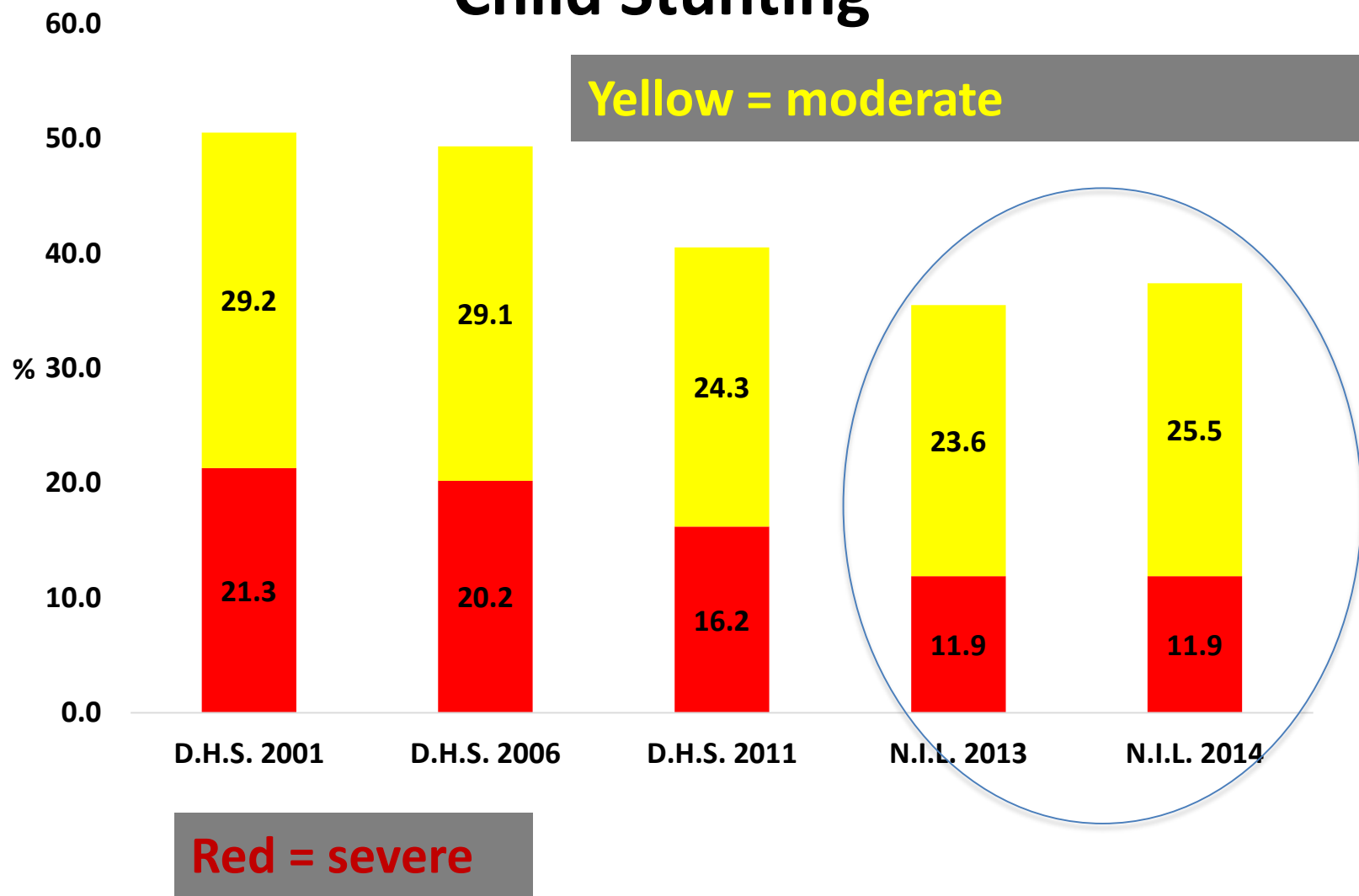
- Sunaula Hazar
- Multi-Sector Nutrition Plan



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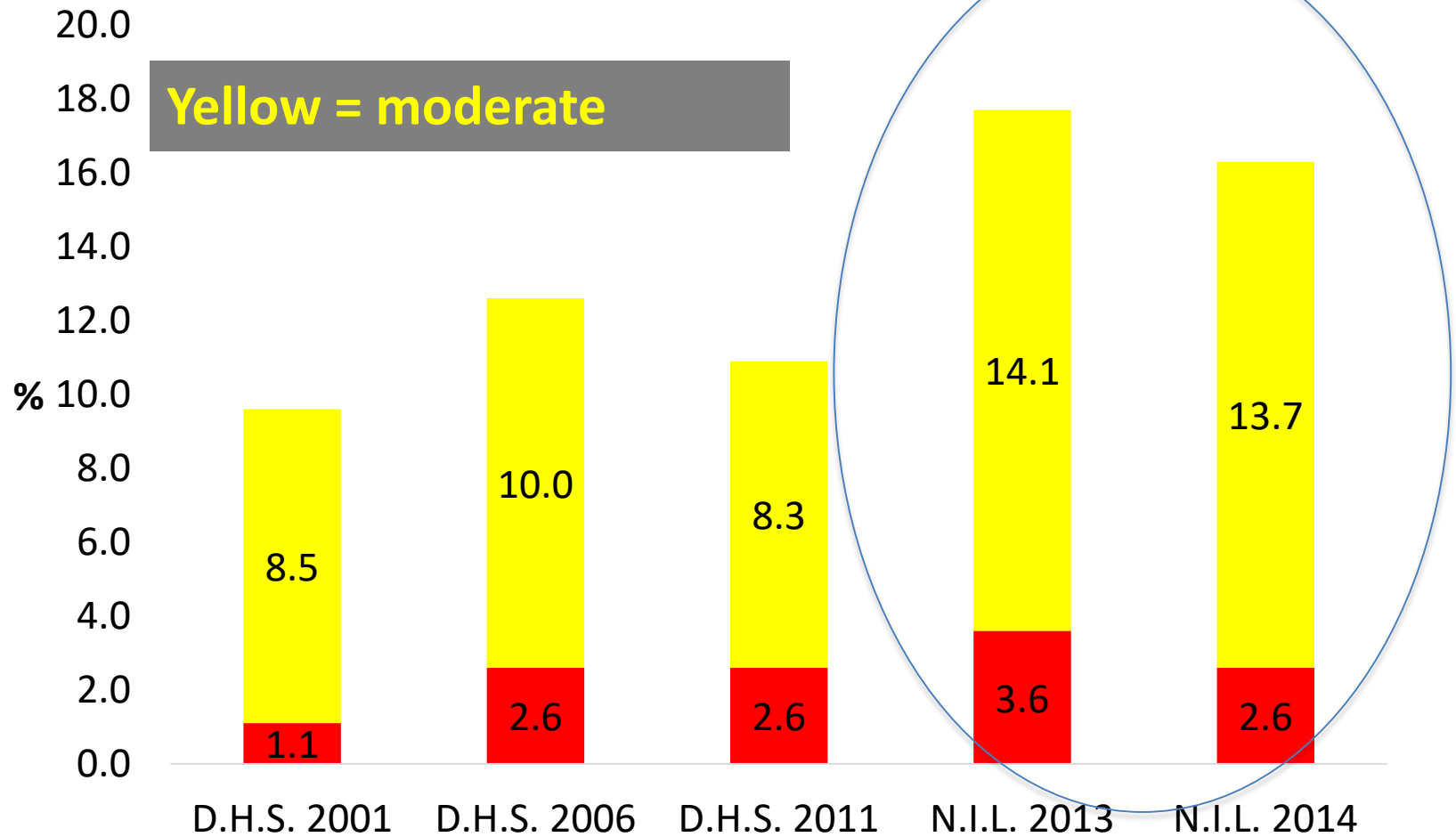
Trends in stunting in Nepal: DHS and PoSHAN

Child Stunting



Trends in wasting in Nepal: DHS and PoSHAN

Child Wasting



Red = severe



Investments in *both* agriculture and nutrition crucial:

❖ **Production diversity and dietary diversity are linked.**

But relationship complex Ghosh et al forthcoming, Mulmi et al forthcoming

❖ **Common diets lack Vitamin A, B12, B6, iron, calcium**

(Biehl et al, 2016)

❖ **Common diets more expensive than nutrient optimized diets in Terai, opposite relationship in**

Mountains and Hills (Biehl et al, 2016)

❖ **Many rural households purchasing high fat, high sugar, processed/packaged foods** (POSHAN Community studies, Panel I

analysis)





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Quality of nutrition governance has improved but challenges remain (Webb et al, 2016)

Duration of programme critical to achieving impact:

- ❖ Fall in underweight and wasting almost 48 months after the start of the intervention, but not much before that. (Miller et al 2016)

94% of pregnant women exposed to Aflatoxin in Banke
(Andrews et al, forthcoming)



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MORE DETAILS

- Production Diversity and Dietary Diversity in Women and Children
- Quality of Nutrition Governance
- Aflatoxin Exposure in Pregnant women and associated factors



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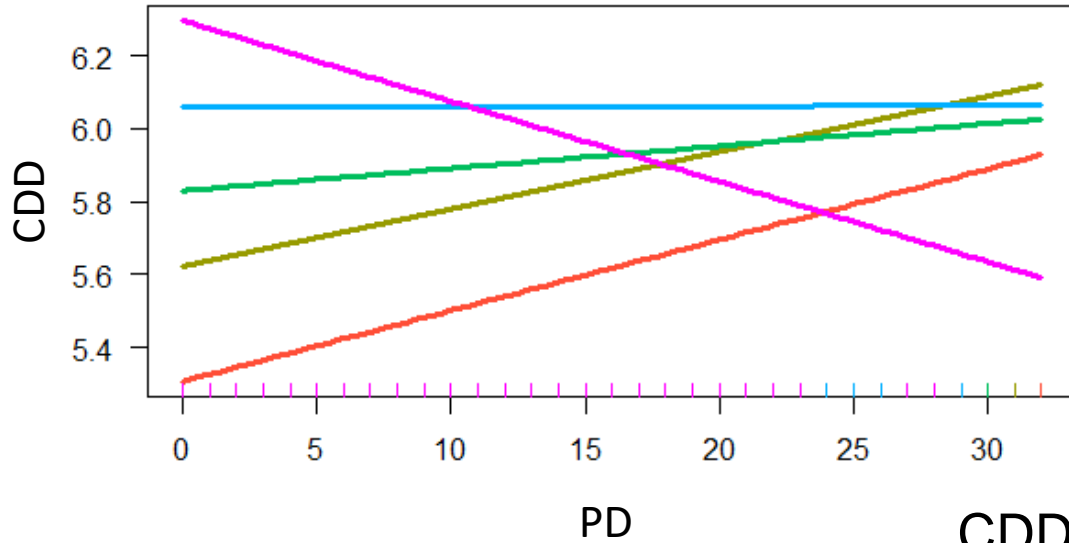


- Increased production diversity leads to **1.4% increase in women's dietary diversity (WDD)**. (Ghosh et al forthcoming)
- A change in poverty category leads to **7% increase in WDD (2013 to 2014)**. (Ghosh et al, forthcoming)
- **Market distance modifies effect of production diversity on diet diversity**. Child diet diversity higher with production diversity if further from markets. (Ghosh et al forthcoming, Mulmi et al, forthcoming)



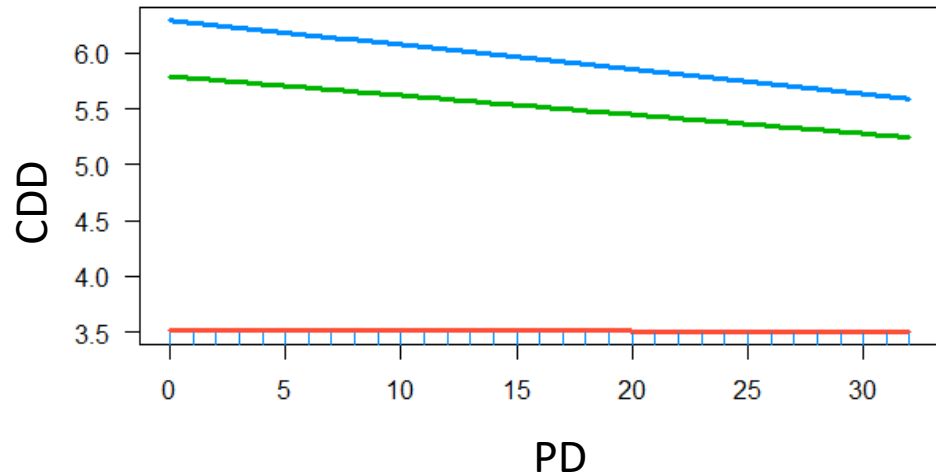
CDD and PD, by Wealth Quintile

1 2 3 4 5



CDD and PD by Age Group

(0,12] (12,24] (24,60]







Ghosh et al,
forthcoming



What *has* improved in multi-sector action (*all sites*)

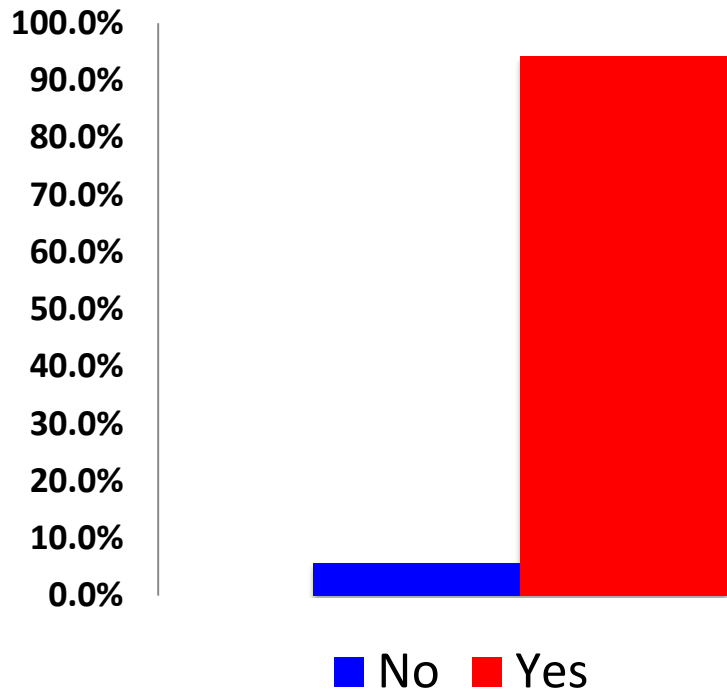
	R2 2014		R3 2015		Chi Square P-value
	n	%	n	%	
Decisions based on technical evidence relating to nutrition	73/132	55.3	123/136	90.4	0.0001*
All stakeholders included in discussions on nutrition	64/132	48.5	86/136	63.2	0.0738*
Effective cross-sectoral collaboration on nutrition	57/132	43.2	70/136	51.8	0.4334
Adequate commitment to intra-sector collaboration	124/138	89.9	129/136	94.9	0.7450

Persisting *problems* for multi-sector action (*all sites*)

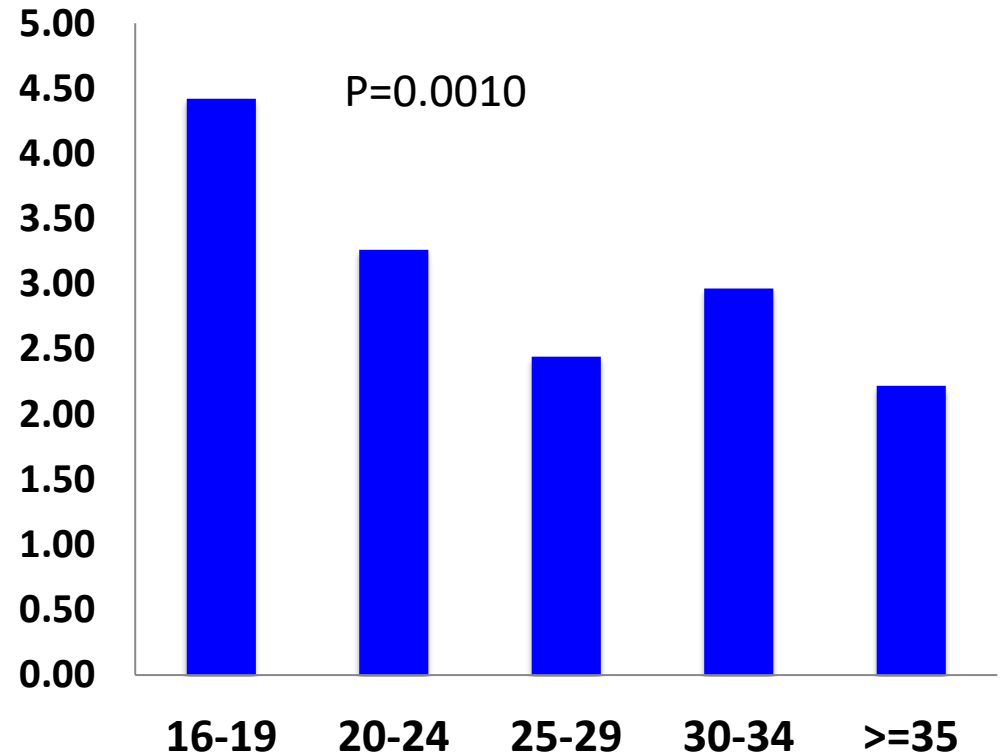
	R2 (2014)		R3 (2015)		McNemar's chi-square
		%		%	
Lacking financial resources to implement		44.8		50.9	0.037(0.8474)
Colleagues in other sectors are not adequately trained		25.9		26.7	0.6(0.4386)
Lack of sharing information across sectors		54.3		50.0	0.18(0.1779)
Have defined responsibilities for nutrition		95.5		84.5	0.003*



Detectable AFB1, n=1650

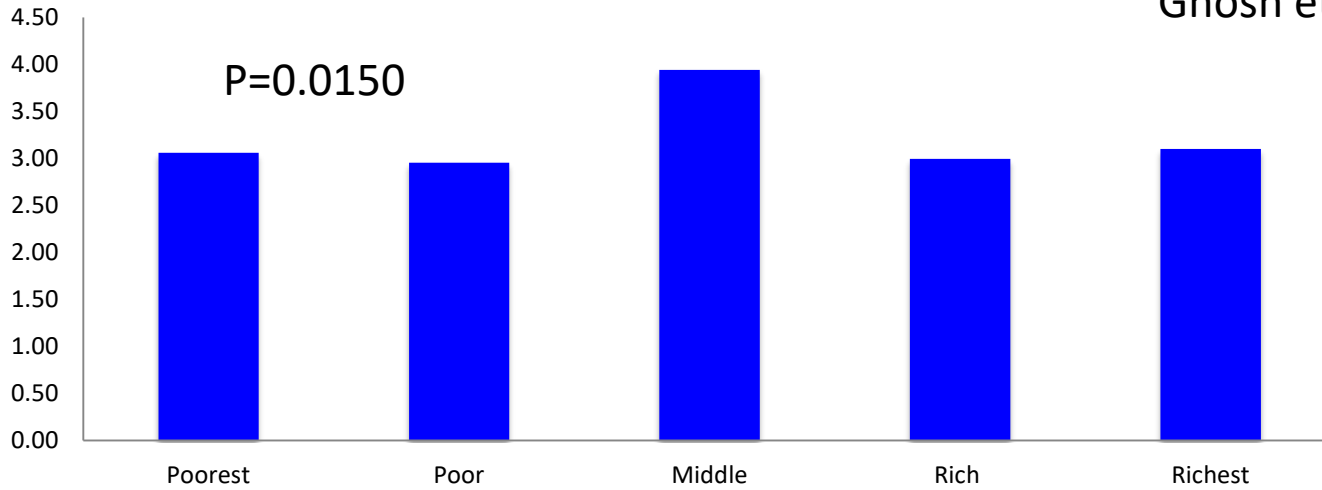


Mean AFB1 by age category, n=1646

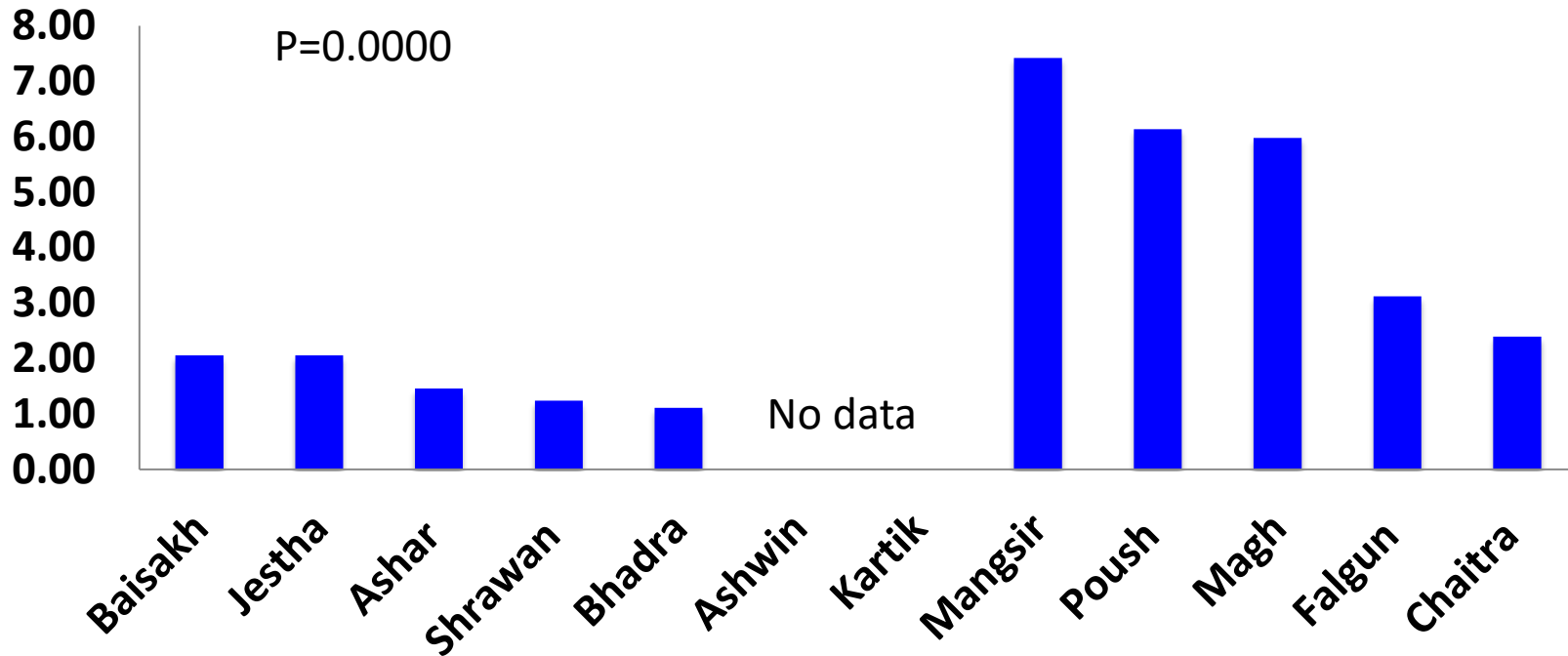


Mean AFB1 by wealth quintile, n=1642

Andrews et al, forthcoming
Ghosh et al, forthcoming



Mean AFB1 by month, n=1646





- ❖ Investments in both agriculture and nutrition are crucial : Production diversity and dietary diversity relationship is complex
- ❖ Wasting prevalence and interventions to target wasting particularly in Terai
- ❖ Complementary feeding and IYCF need to be better coupled with nutrition agriculture interventions
- ❖ Duration of an intervention does matter, some indicators do require more time
- ❖ Nutrition-agriculture linkages go beyond improving diets and income. Food safety, post harvest storage and processing of food crops



- Publications available for download www.nutritioninnovationlab.org
- Further findings to be presented in different fora in Nepal and internationally (International Congress on Nutrition)
- All data (Primary) will be open access
- Organization of regional/global symposium in July 2017 in collaboration with London School of Hygiene and Tropical Medicine (Support from DFID and USAID Mission)
- Increased engagement in Nutrition Technical Committee



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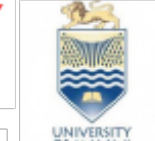


fhi 360
THE SCIENCE OF IMPROVING LIVES



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