

Bigger Impacts of Agriculture on Nutrition What Will it Take?

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CGIAR Science Forum
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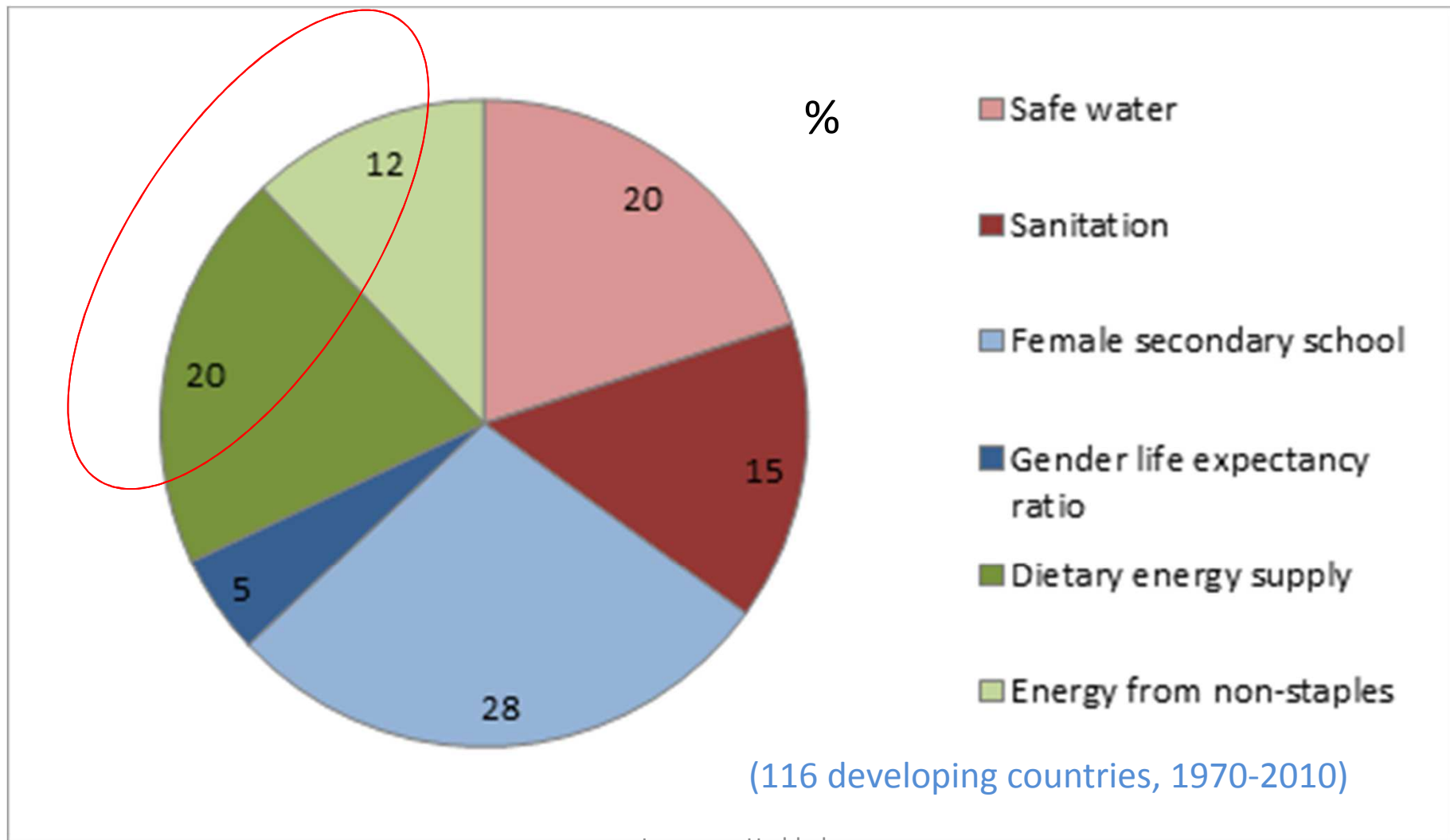
Outline

- Why the Puzzling Evidence on Links Between Agriculture and Nutrition?
- What are the features of an “Enabling Environment” that can strengthen the links between them?

Puzzling Evidence

- Macro evidence is positive—or is it?
- Micro evidence is depressing—or is it?

Macro Level: Food availability is just as important as the other underlying determinants for reductions in stunting



But... a lack of association of agricultural growth and stunting

Table 3. *The impacts of economic growth on child malnutrition*

Regression no.	1	2
Country trend effects?	Yes	Yes
Sector growth rate weights	Not applicable	GDP shares
No. of countries/states	89	89
No. observations	160	160
Initial malnutrition, $t-1$	-0.11 ^{***}	-0.11 ^{***}
Growth (GDP per capita)	-0.18 ^{**}	
Growth (ag.)		-0.35
Growth (nonag.)		-0.16 ^{**}
R -squared	0.73	0.73
Adjusted R -squared	0.37	0.37
Wald test indicates difference between agricultural & non-agricultural growth?	Not applicable	No
Significant changes when country trend effects are excluded?	No	No

Headey 2012, cross country regression

Micro Level: The stunting impact of agricultural interventions that are designed to have an impact on nutrition - weak

Table 3.5 Impact of interventions on nutritional status of children

Study	Stunting (height-for-age)	Underweight (weight-for-age)	Wasting (weight-for-height)
Aiga et al. (2002)	n.s	**	n.s
Faber et al. (2002)	n.s	n.s	n.s.
Hoorweg et al. (2000)	**	**	**
Makhotla and Hendriks (2004)	n.s.	n.s.	n.s.
Low et al. (2007)	n.s.	**	**
Olney et al. (2009)	n.s.	n.s.	n.s
Schipani et al. (2002)	n.s.	n.s.	n.s.
Shmidt and Vorster (1995)	n.s.	n.s.	n.s.

Note: in the second column, n.s. is not statistically significant, * is statistically significant at the 10% level, ** is significant at the 5% level, *** is significant at the 1% level

Masset E, Haddad L, Cornelius A and Isaza-Castro J (2011), A systematic review of agricultural interventions that aim to improve nutritional status of children. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

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But...

- Half of the non significant stunting findings had sample sizes that were too small to detect impacts--even if they existed!
- While these studies showed few effects on stunting, about half of them showed “positive” impacts on diets

The potential of nutrition
sensitive programs to
improve nutrition outcomes
is clear but it has yet to be
unleashed

Ruel and Alderman 2013. Lancet Series

So, how to unleash?

Create an Enabling Environment

	Building commitment	Converting commitment to impact
Framing, Narratives and Evidence		
Politics and Governance		
Capacity and Financial Resources		

Gillespie, Haddad, Menon, Nisbett and Mannar, Lancet 2013

Create an Enabling Environment

	Building commitment	Converting commitment to impact
Framing, Narratives and Evidence	<ul style="list-style-type: none">• What is agriculture for?• Reframing foods• Understand agriculture policymakers when it comes to nutrition	
Politics and Governance		
Capacity and Financial Resources		

CGIAR Annual Report 2011

About CGIAR

CGIAR Reframing Agricultural Research

CGIAR is a global partnership that unites organizations engaged in research for a food secure future.

CGIAR research is dedicated to reducing rural poverty, increasing food security, improving human health and nutrition, and ensuring more sustainable management of natural resources. It

CGIAR Annual Report 2000

OUR MISSION

TO CONTRIBUTE TO FOOD SECURITY AND POVERTY ERADICATION IN DEVELOPING COUNTRIES THROUGH RESEARCH, PARTNERSHIPS, CAPACITY BUILDING, AND POLICY SUPPORT, PROMOTING SUSTAINABLE AGRICULTURAL DEVELOPMENT BASED ON THE ENVIRONMENTALLY SOUND MANAGEMENT OF NATURAL RESOURCES.

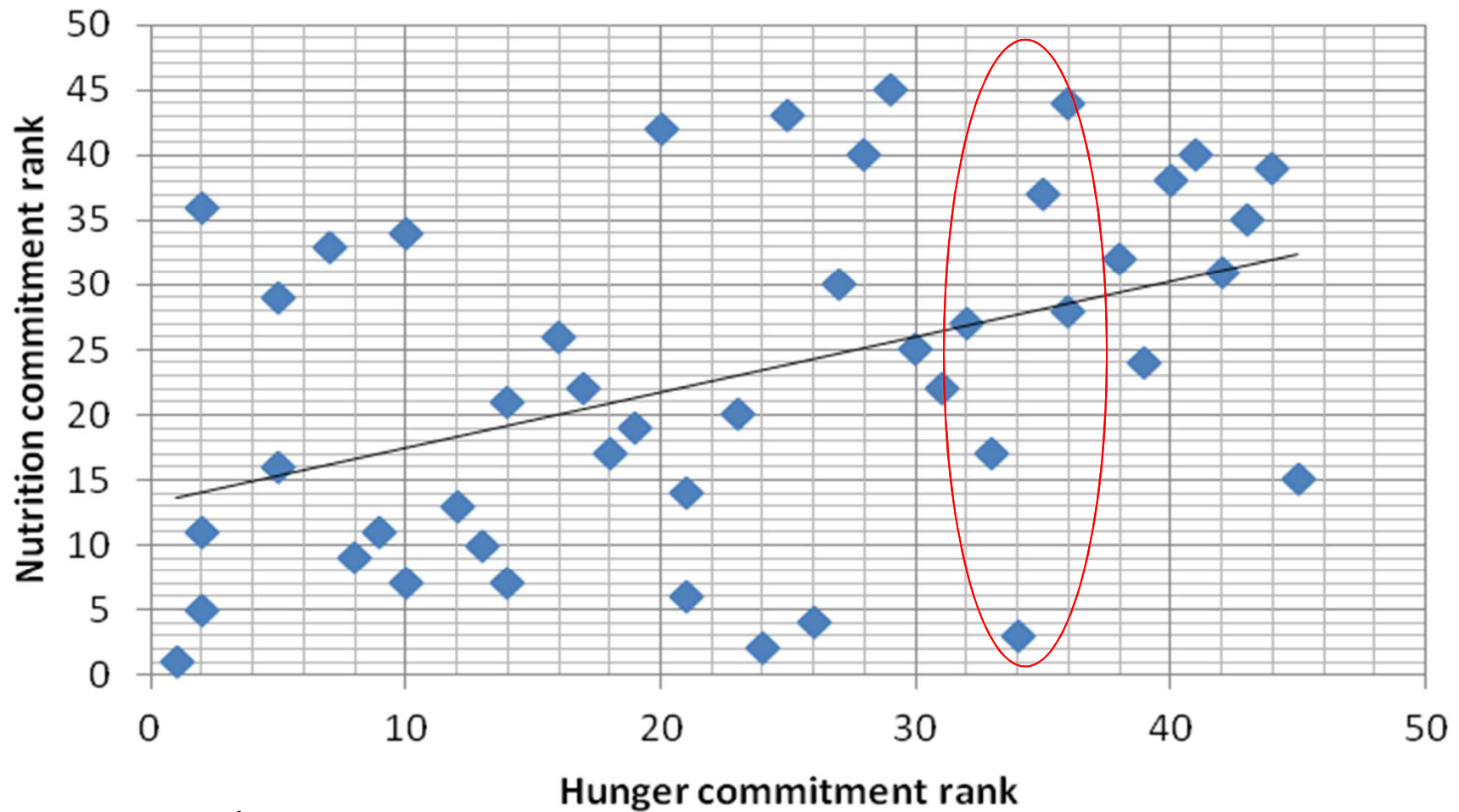
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Create an Enabling Environment

	Building commitment	Converting commitment to impact
Framing, Narratives and Evidence		
Politics and Governance	<ul style="list-style-type: none">• What does commitment of agriculture to nutrition look like?• A commitment to food security is not identical to a commitment to nutrition	
Capacity and Financial Resources		

Commitment to Malnutrition reduction is not identical to the Commitment to reduce Hunger



Create an Enabling Environment

	Building commitment	Converting commitment to impact
Framing, Narratives and Evidence		
Politics and Governance		
Capacity and Financial Resources	<ul style="list-style-type: none">• Leadership and training: where are the next generation being developed to think about the links?• Leadership opportunities and training for women in agriculture	



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The **Agriculture**, Food and Environment (AFE) program within the Friedman School of **Nutrition** Science and Policy fuses the disciplines of **nutrition**, **agricultural** ...

[Nutritional Science | College of Agricultural and Life Scienc...](#)

[www.cals.wisc.edu/students/undergraduate...study/.../nutritional-science/](#) ▾

Nutritional Science. **Nutritional** scientists work to ensure that our diets and those fed to animals supply the fundamental substances in foods which are essential ...

[Uganda: Agriculture, Health & Nutrition | CALS Internationa...](#)

[ip.cals.wisc.edu/for-students/...study.../uganda-agriculture-health-nutritio...](#) ▾

Program Timing: Students register for InterD 375, a 2-3 credit seminar course during the fall semester with a three-week field **study** in Uganda over January ...

[\[PDF\] Linkages between Agriculture and Nutrition ... - AgEco...](#)

[ageconsearch.umn.edu/.../Linkages%20between%20agriculture%20and...](#) ▾

by E JOENNEDY - Cited by 41 - Related articles

Institute Studies. Bouis, H. E., and L. J. Haddad. 1990. **Agricultural** commercialization, **nutrition**, and the rural poor: A case **study** of Philippine farm house- holds.

Who is
training the
next
generation in
agriculture
and nutrition?

Create an Enabling Environment

	Building commitment	Converting commitment to impact
Framing, Narratives and Evidence		<ul style="list-style-type: none">• Convincing evidence on what works• Nature of evidence: associations are fine if no systematic bias and vast majority of studies telling same story. RCTs helpful in some key studies but not always.
Politics and Governance		
Capacity and Financial Resources		

“A second reason for lack of action to improve nutrition is the fixation of the health and nutrition community on randomised controlled trials (RCTs) as the only legitimate source of evidence.^{8, 9} Unfortunately, RCTs—the gold standard in health research—are generally impossible to apply to the food system except in small, usually unimportant, projects”

Per Pinstруп-Andersen, Lancet 2013 Response

Create an Enabling Environment

	Building commitment	Converting commitment to impact
Framing, Narratives and Evidence		
Politics and Governance		<ul style="list-style-type: none">• Horizontal coordination: integration or co-location?• Empower women to improve delivery of agriculture that is pro nutrition—but how?
Capacity and Financial Resources		

Integration of agriculture and nutrition is difficult politically and operationally: might co-location be an additional option?

S. Fan, C. Chan-Kang / Food Policy 29 (2004) 431–444

441

Table 4
Returns to government investment in rural Uganda

Investment	Central	East	North	West	Uganda
<i>Returns in agricultural output (shilling per shilling invested)</i>					
Agricultural R&D	12.49	10.77	11.77	14.74	12.38
Education	2.05	3.51	2.10	3.80	2.72
Feeder roads	6.03	8.74	4.88	9.19	7.16
Murram roads	n.s.	n.s.	n.s.	n.s.	n.s.
Tarmac roads	n.s.	n.s.	n.s.	n.s.	n.s.
Health	1.37	0.92	0.37	0.96	0.90
<i>Number in poor people reduced per million shilling invested</i>					
Agricultural R&D	21.75	66.31	175.52	48.91	58.39
Education	3.57	21.60	31.38	12.62	12.81
Feeder roads	10.51	53.85	72.82	30.49	33.77
Murram roads	4.08	11.88	14.80	9.77	9.70
Tarmac roads	2.58	13.12	62.92	9.39	9.73
Health	2.60	6.15	5.95	3.46	4.60

Source: Fan et al. (2004b).

Notes. n.s. indicates that the respective coefficients are not statistically significant.

TABLE 3.1 *Gender segregation in field of study: In most countries, women dominate health and education studies and men dominate engineering and sciences*

The “missing women” in agriculture	Fraction of countries where the field of study is			Number of countries
	Female dominated %	Male dominated %	Neutral %	
Agriculture	3	74	22	89
Education	84	6	10	97
Engineering, manufacturing, and construction	0	100	0	97
Health and welfare	82	4	13	97
Arts and humanities	55	6	39	96
Science	13	68	20	96
Services	21	59	21	87
Social sciences; business and law	23	16	61	97

Source: WDR 2012 team estimates based on data from UNESCO Institute for Statistics.

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Politics and Governance		
Capacity and Financial Resources		<ul style="list-style-type: none">• Increased potential for public sector resources in agriculture to work for nutrition (e.g. A4H)• Increased potential for private sector resources in agriculture to work for nutrition

GAIN-IDS Discussion Paper

Nutritious Agriculture by Design: A Tool for Program Planning.

Spencer Henson
John Humphrey
Bonnie McClafferty



We need more
tools to guide
public private
agriculture
partnerships
towards nutrition

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Capacity and Financial Resources	<ul style="list-style-type: none"> • Leadership and training: where are the next generation being developed to think about the links? • Leadership opportunities and training for women in agriculture 	<ul style="list-style-type: none"> • Increased potential for public sector resources in agriculture to work for nutrition (e.g. A4H) • Increased potential for private sector resources in agriculture to work for nutrition

Conclusions

- Agriculture does have the potential to dramatically accelerate stunting declines
- We must realize that potential, because nutrition specific programmes *on their own* will, at best, reduce stunting by 20%
- To realize that potential we need to build an *enabling environment* for agriculture
- We know what to do--it's up to us to make it happen