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The U.S. Government's Global Hunger & Food Security Initiative

## GLOBAL LEARNING AND EVIDENCE EXCHANGE **CLIMATE-SMART AGRICULTURE**

DECEMBER 5–9, 2016 // SIEM REAP, CAMBODIA

# Relationships for Resilience: Understanding and Integrating Gender and Nutrition in CSA

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**Presenters: Elizabeth Bryan, Sophie Theis, and Jowel Choufani, IFPRI**



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## GENDER-SENSITIVE CLIMATE-RESILIENT AGRICULTURE FOR NUTRITION (G-CAN) OBJECTIVES

- Feed the Future Mission support
- Conceptual framework and tools to support programming and research
- Research to fill evidence gaps
- Better utilization of existing data, mapping
- Demand-driven advisory services



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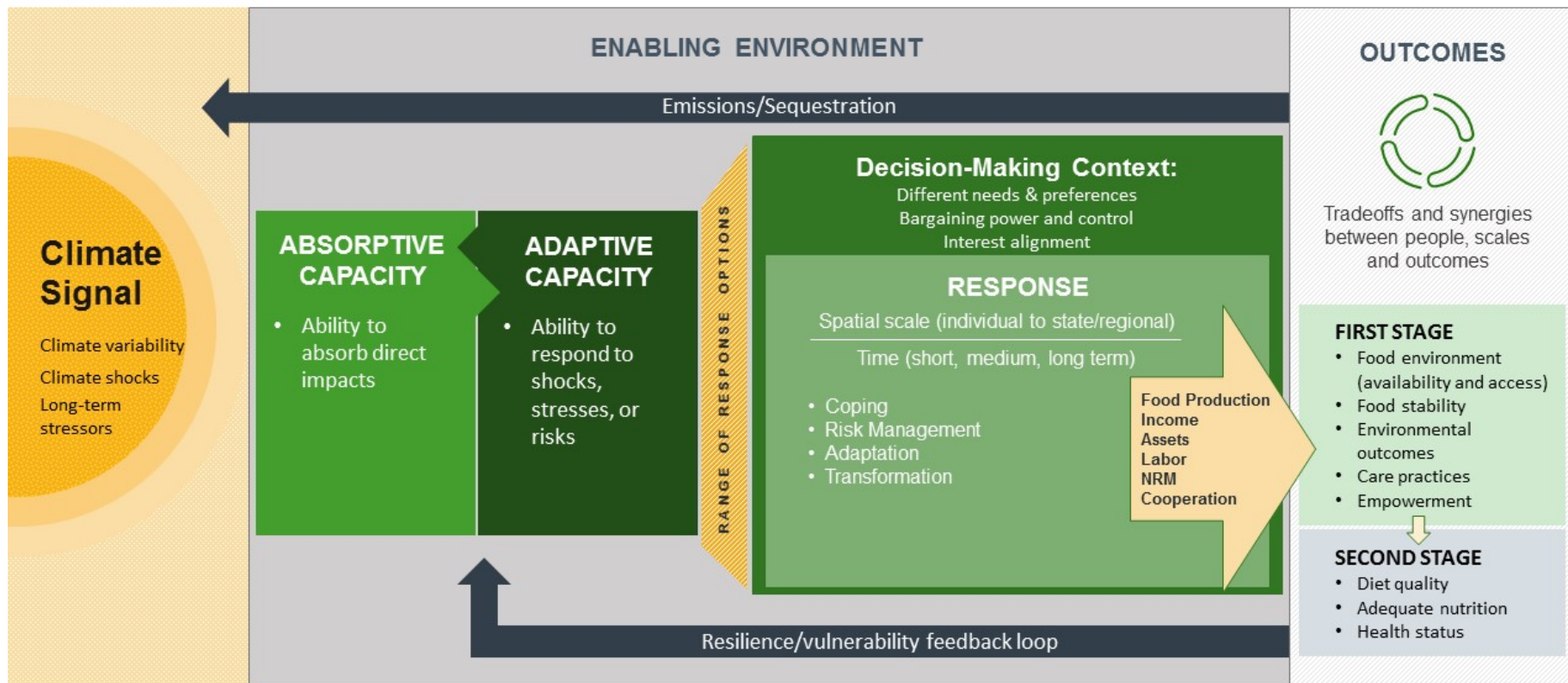
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## Framework for Climate, Gender, and Nutrition



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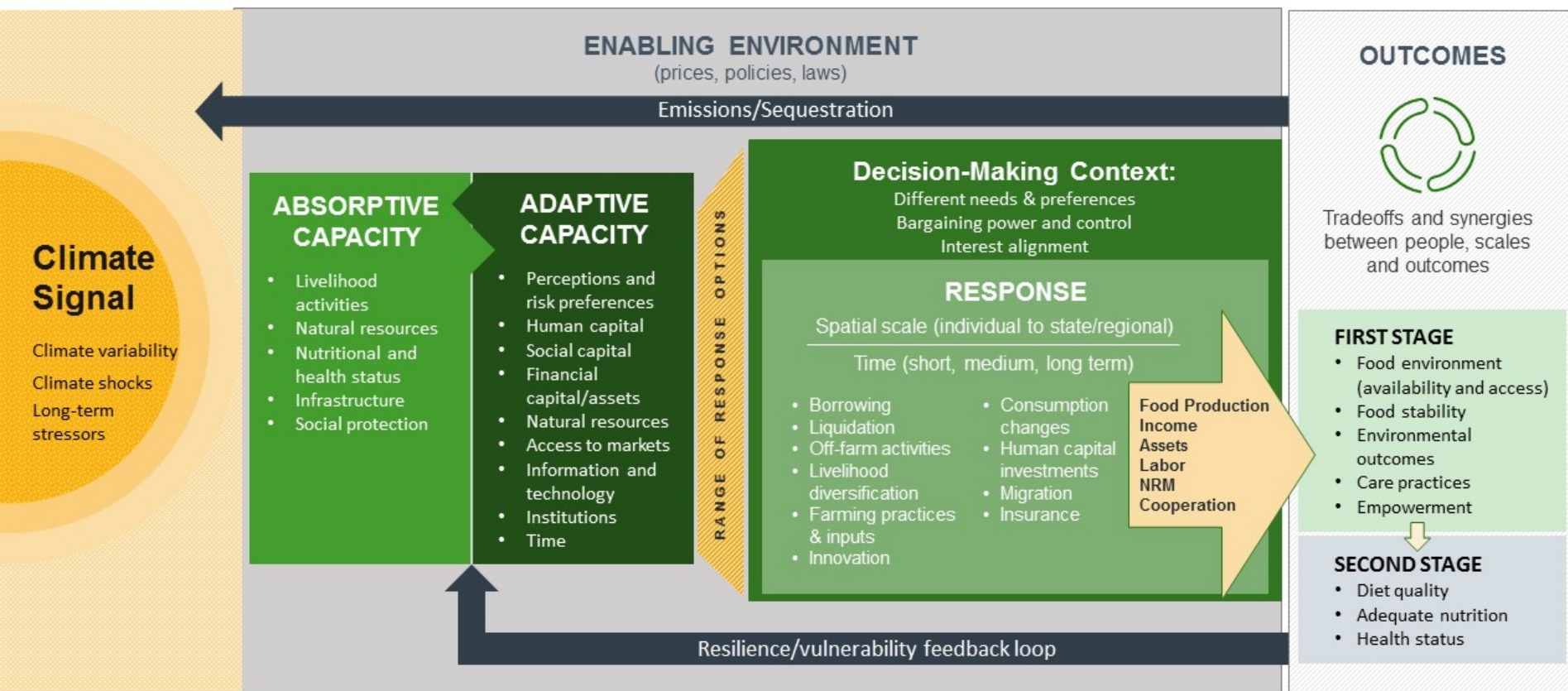
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## Framework for Climate, Gender, and Nutrition – Household Level



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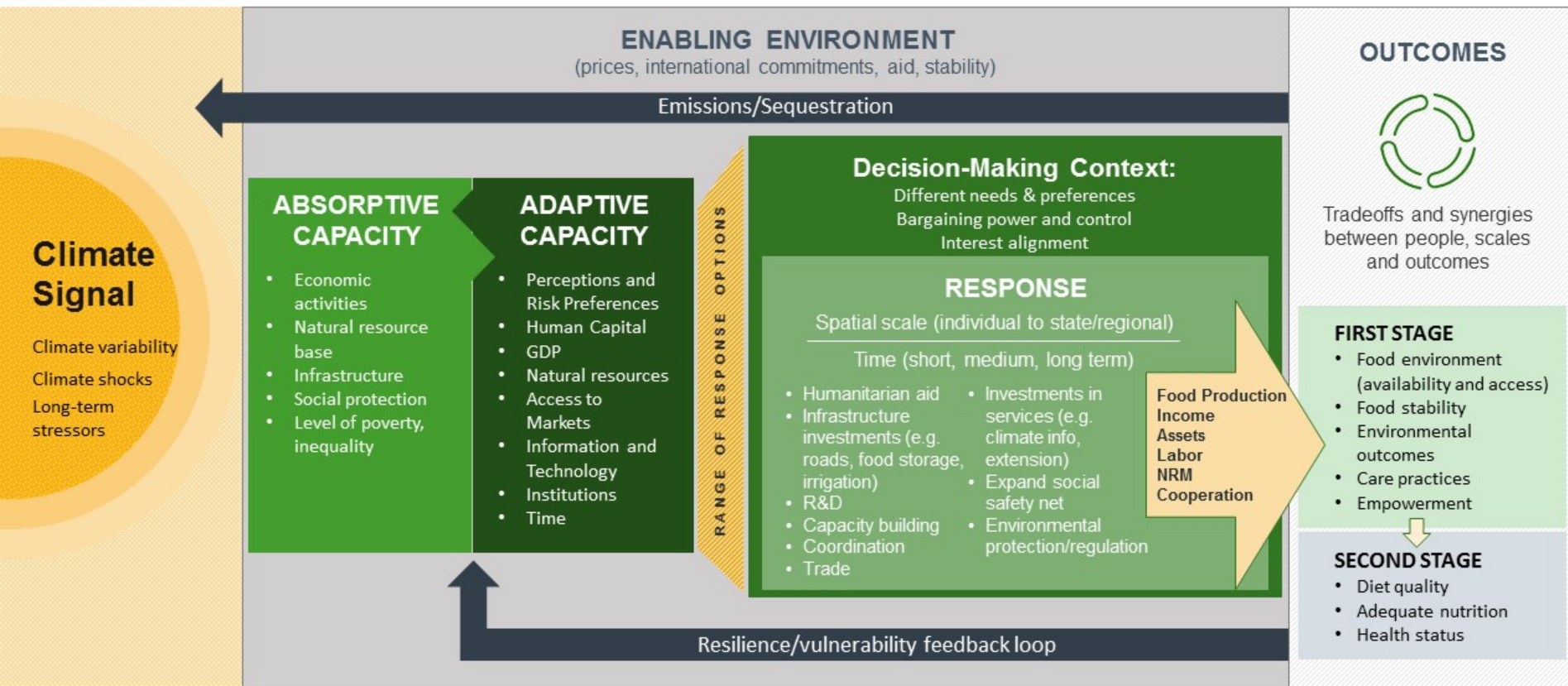




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## Framework for Climate, Gender, and Nutrition – Policy/Program Level



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## Climate and nutrition: Considerations for nutrition-sensitive approaches



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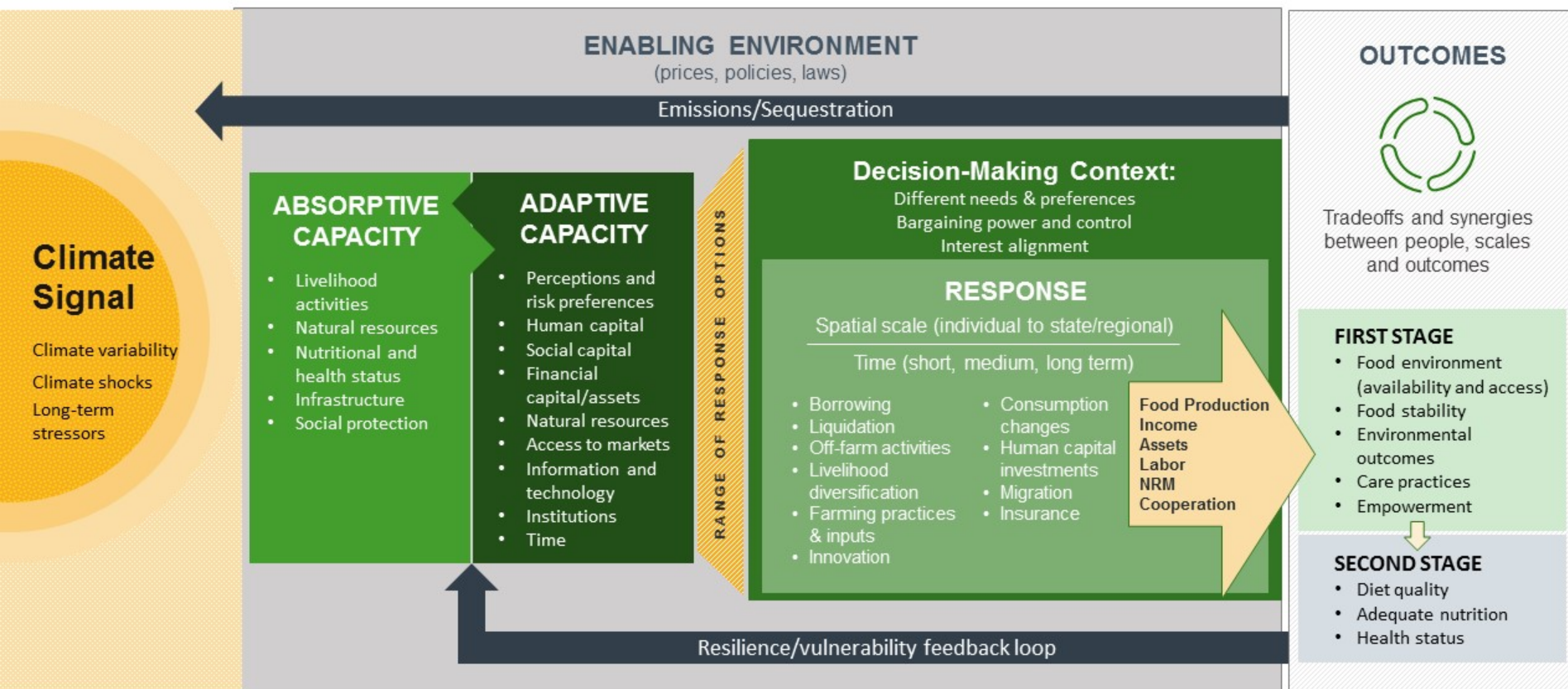
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## Framework for Climate, Gender, and Nutrition – Household Level



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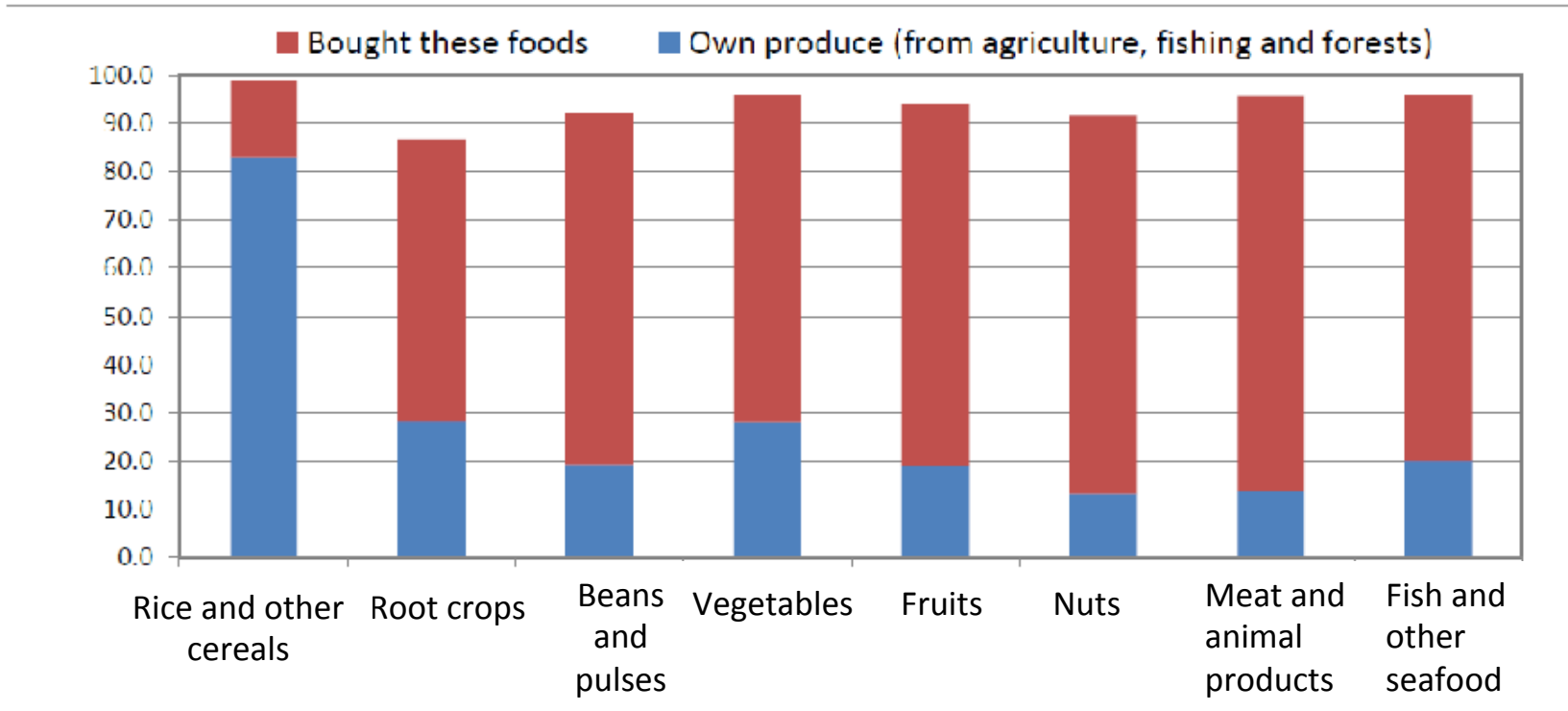
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## CAMBODIA—SOURCES OF FOOD CONSUMED



*Percentage of households reporting consumption of basic food types in the past seven days by source of food.*



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[Census of Agriculture 2013](#)

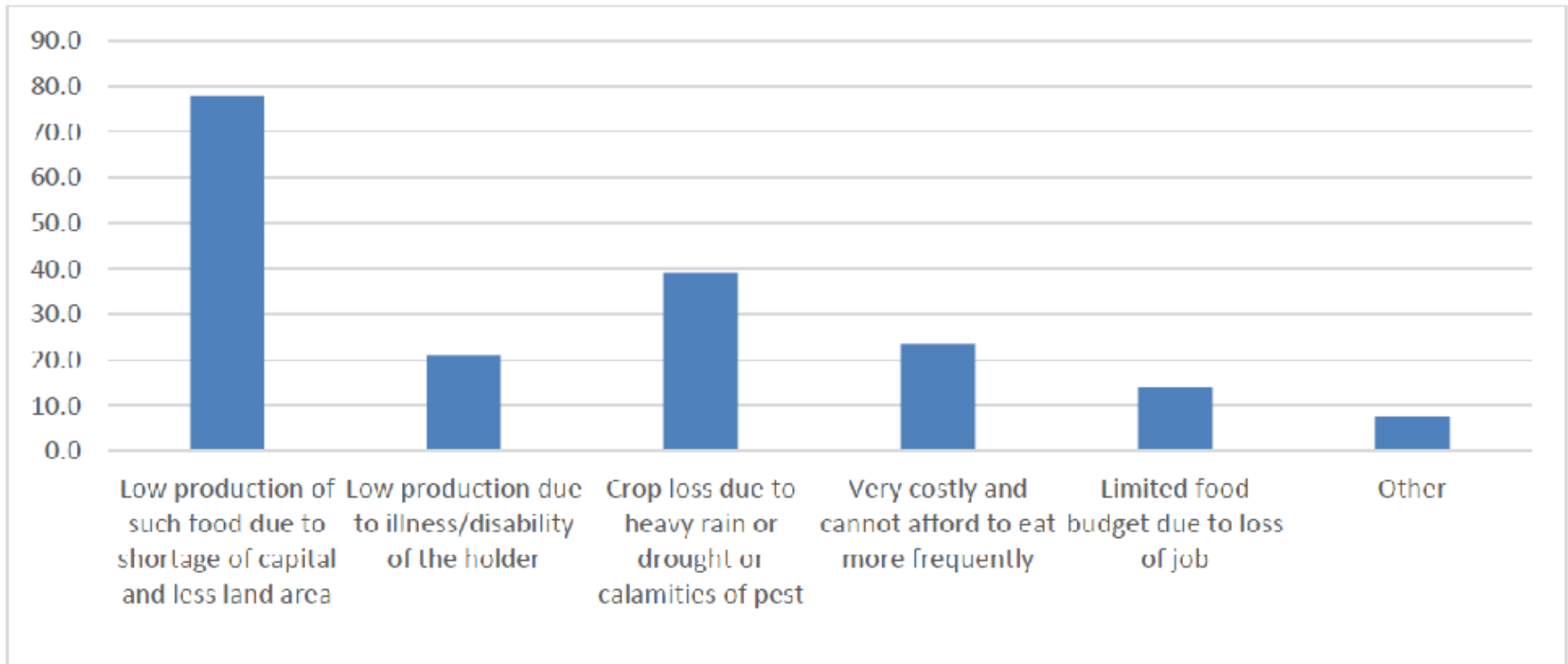


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## CAMBODIA - VARIOUS CAUSES OF FOOD SHORTAGE



*Percentage of households reporting various causes of food shortage.*





## CAMBODIA - NUTRITION IMPLICATIONS OF COPING STRATEGIES

Coping strategies of agricultural households that reported food shortage :

- 50% of households: borrowing money, securing food on credit or as advance payment for manual labor to be undertaken at the time of the next harvest.
- Send household member to look for work or other sources of income outside the agricultural holding.
- Sale or barter of non-food crops, livestock/poultry and handicrafts, etc.

→ Coping strategies may exacerbate impacts of climate change on nutrition/ food security (more debt, more labor, selling of livestock) (men/women, different access)



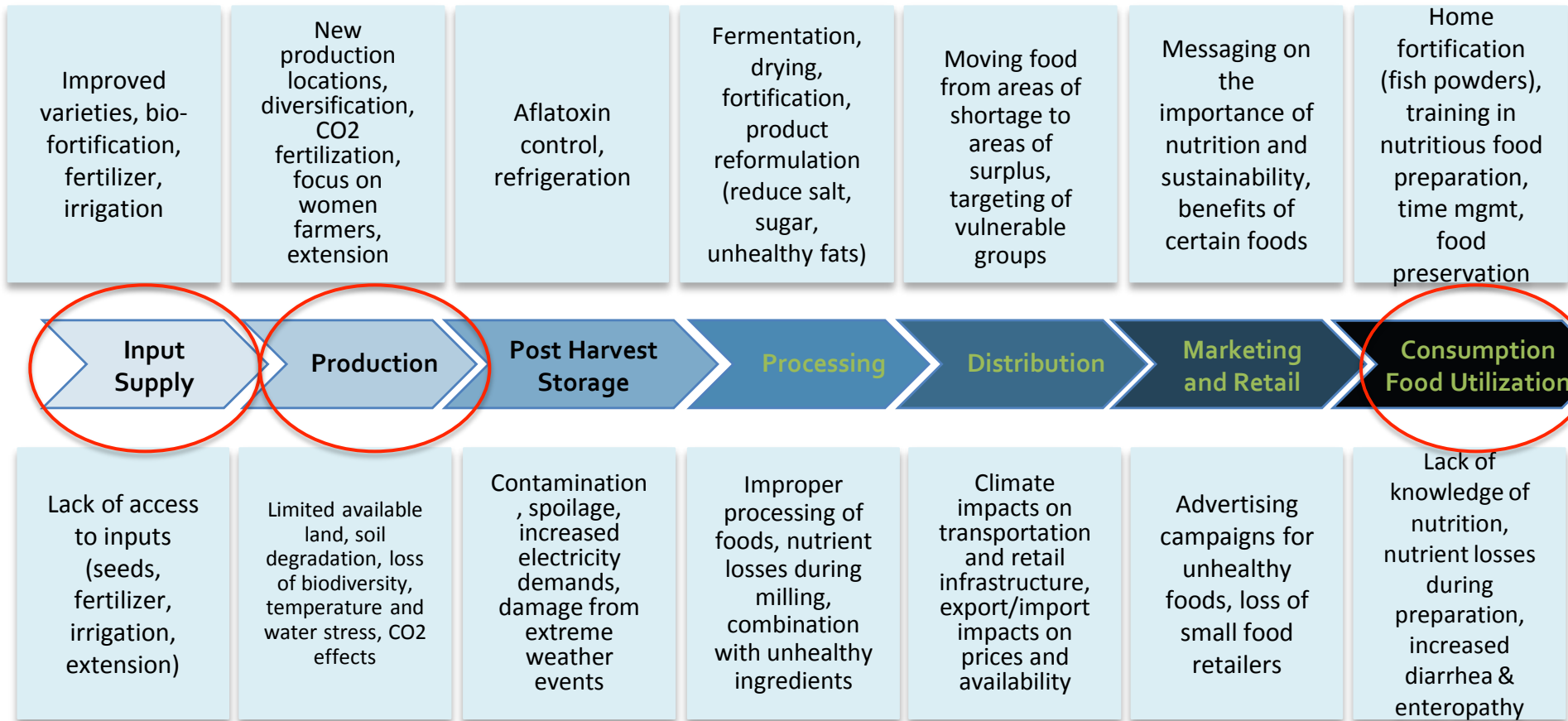


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## Climate, Nutrition-Smart Value Chains

Maximize nutrition “entering” the food value chain



Minimize nutrition “exiting” the value chain



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Source: Fanzo, Downs and McLaren 2017



## NUTRITION-WATER-CLIMATE LINKAGES

- Growing understanding of relationship between WASH and nutrition: Diarrhea; Environmental Enteropathy; Infectious disease, parasitic infections
- Cambodia: significant change in open defecation between 2005 – 2010 able to explain much of the increase in mean child height in that period
- Floods: Destroy crops, Destroy infrastructure, Increase food prices, cause fecal contamination of water sources, increased risk of water-borne diseases, infection



# LIVESTOCK/POULTRY-NUTRITION LINKAGES

- Spotlight on livestock/poultry production to diversify diet (egg consumption)  
→ But what is the relationship with other causes of malnutrition?
- Ethiopia 2015: household survey in 5 regions (6,977 households)
- Explore associations between household poultry ownership, exposure of children to poultry in the home, and HAZ
- Poultry ownership is positively associated with child HAZ [ $\beta = 0.291$ , s.e. = 0.094], the practice of corralling poultry in the household dwelling overnight is negatively associated with HAZ [ $\beta = -0.250$ , s.e. = 0.118]
- Poultry-related hygiene issues important mediating factor linking poultry ownership to child growth.







## GENDER IN THE AGRICULTURE-TO-NUTRITION PATHWAYS

Knowledge of care/feeding practices, control over income/food consumption decisions, women's health/nutritional status, and time use:

**An increase in women's time working in agriculture could have:**

### Positive Effects on Nutrition

- Increases food and/or income available to the household → improved nutrition
- Increases women's status within the household → increases decision-making power → improved nutrition

*(Gillespie 2012, Malapit 2013, Smith 2003)*

### Negative Effects on Nutrition

- Decreases time available for reproductive work → inadequate care, health, & food practices → poor nutrition

*(Rani and Rao 1995, Bhalotra 2010, Berman et al 1997)*

- Intensity of agricultural labor adversely impacts maternal health → intergenerational transmission of under-nutrition

*(Higgins and Alderman 1997, Herforth 2012, Rao et al 2003)*





## NO ONE SIZE FITS ALL

- Key drivers of change differ between severely & moderately stunted children and between rural & urban areas → Different interventions needed
- **Rural:** maternal best practices and parental characteristics (parental education levels) are key for child nutrition status, wealth less important (for severely stunted).
- **Moderately stunted:** improvement in health infrastructure—principally improved sanitation and drinking water—important





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## **Gender and CSA for climate resilience:**

**A taste of the evidence + entry points for programming**



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## WHY GENDER FOR CLIMATE RESILIENCE?

### Understanding and addressing these gender differences to:

- ☐ Ensure social inclusion: *who is adopting CSA and who is not?*
- ☐ Mitigate potential harm to the most vulnerable: *how can we catch and reduce unintended negative consequences or inequalities in CSA?*
- ☐ Participatory input: *in what ways can women's unique knowledge and networks contribute to programming?*
- ☐ Achieve co-benefits/other development outcomes: *how will activities and outputs affect nutrition through health, diets, and care?*
- ☐ Advance empowerment and gender equality



## Framework for Climate, Gender, and Nutrition – Household Level







## MEN AND WOMEN GET INFO FROM DIFFERENT SOURCES (BANGLADESH)

		Men	Women
<b>Agricultural sources of information</b>	Government extension services	<b>0.28</b>	0.07
	Agricultural service providers	<b>0.04</b>	0.00
	Farmer field days	<b>0.12</b>	0.01
<b>Group-based sources</b>	NGO	0.14	0.10
	Community meetings	0.03	0.00
	Farmer orgs, coops, CBOs	0.02	0.01
<b>Informal sources</b>	Family members	0.13	0.05
	<b>Neighbors</b>	0.50	<b>0.81</b>
<b>Media and schools</b>	<b>Radio</b>	0.72	<b>0.88</b>
	Television	<b>0.58</b>	0.32
	Newspaper/bulletin	<b>0.87</b>	0.55
	Schools/teacher	<b>0.15</b>	0.04
	Cell phone	0.02	0.01
	Internet	0.02	0.01
<b>Traditional sources</b>	Traditional forecasters, indigenous knowledge, etc.	<b>0.55</b>	0.39



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## WITH LESS ACCESS TO INFO, LESS LIKELY TO ADOPT

	Whether respondent is aware of practice			Whether respondent adopted practice in past year if they were aware of it		
	Male	Female	p-value	Male	Female	p-value
Planting stress-tolerant varieties	<b>0.03</b>	0.02	*	0.31	0.17	
Improved high yielding varieties	<b>0.62</b>	0.42	***	0.55	0.48	
Irrigation	0.97	0.97		<b>0.62</b>	0.55	*
Applying crop residue	0.56	0.54		0.42	0.40	
Composting	<b>0.79</b>	0.70	***	0.37	0.40	
Livestock manure management	0.62	0.60		<b>0.48</b>	0.33	***
More efficient fertilizer use	<b>0.88</b>	0.56	***	<b>0.83</b>	0.64	***
Cover cropping	<b>0.14</b>	0.09	**	0.02	0.03	
No till/minimum tillage	0.31	0.27		0.06	0.04	
Improved livestock feed management	0.31	0.26		0.53	<b>0.67</b>	**
Integrated pest management	<b>0.79</b>	0.65	***	0.51	0.48	



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Source: Quisumbing et al under preparation, Bangladesh



## A FEW CONSIDERATIONS FOR TAILORING CLIMATE INFO & ADVISORY SERVICES

- ❑ **Does it reach men and women?**
  - Different networks, preferred channels of information
- ❑ **Is it relevant to men and women's specific livelihood activities?**
  - Different crops and livestock under men and women's control
  - Different roles within value chain (e.g. weeding)
  - Domestic responsibilities (e.g. fetching water)
- ❑ **Is it actionable for recipients**, given social norms (e.g. mobility), access to inputs, markets, land, tech, time, etc?

### Related research on gender and extension:

- Bernier et al 2015. [Gender and institutional aspects of CSA](#)
- Tall et al 2014.  
[Who gets the information? Gender, power, and equity considerations in the design of climate services for farmers](#)
- Digital Green + IFPRI research on extension models
- [Integrating Gender and Nutrition in AES](#) (INGENAES)





## TIME BURDEN = CONSTRAINT TO CSA ADOPTION

- Given women's triple roles in production, caregiving, and domestic responsibilities, **women shoulder a heavy time burden** in most contexts, and especially in Asia - high dependency ratio and male out-migration
- In addition, hiring labor can be more difficult for women
- Available time and access to labor can pose a constraint for women to adopt certain CSA practices
- **Possible programming approaches:** cooperatives, service providers, techniques and technologies to reduce drudgery, labor exchange, child care, transportation, ICT, water and cooking infrastructure, etc...

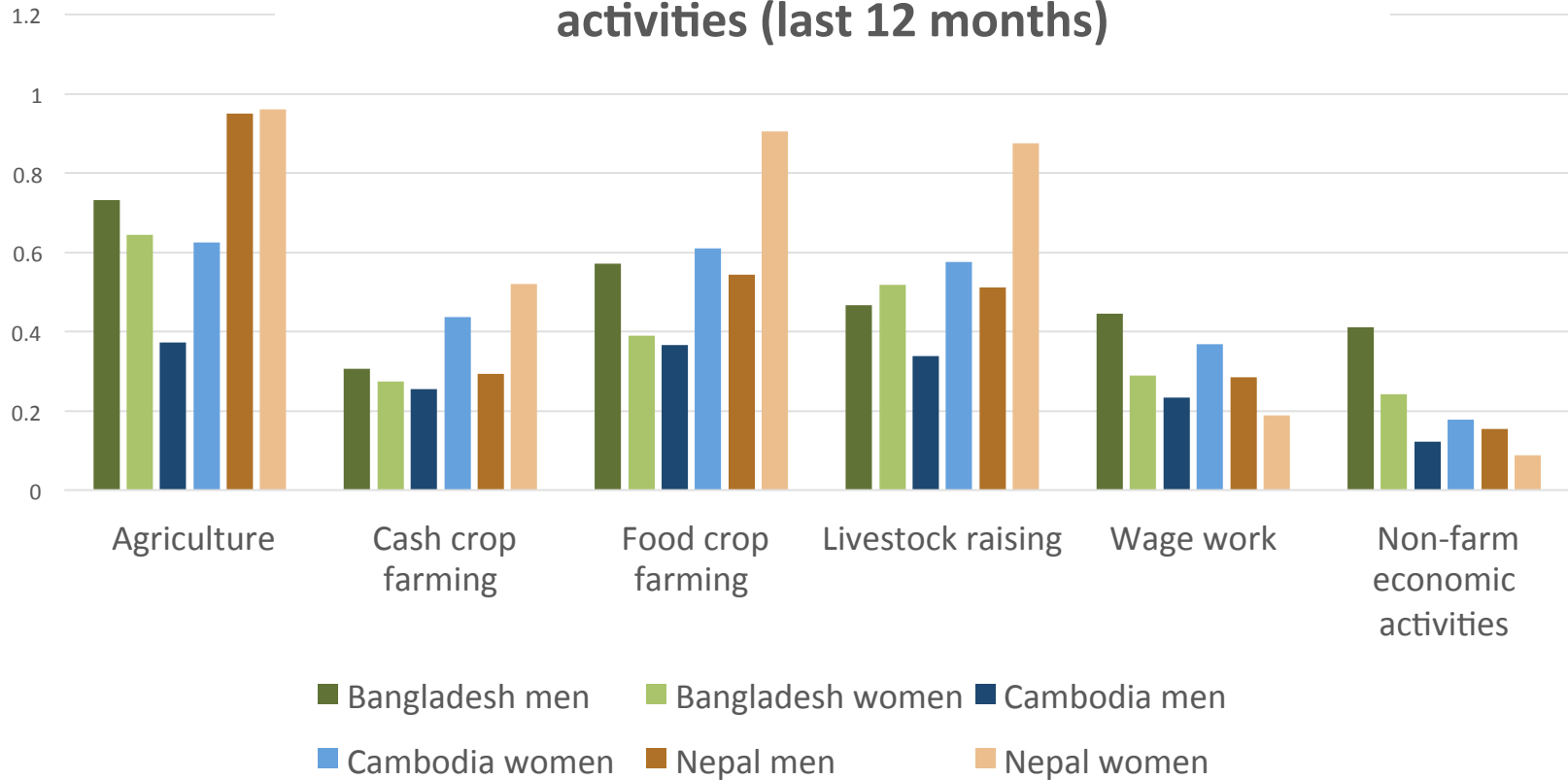




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## Percent of respondents who engaged in productive activities (last 12 months)



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Source: PBS survey datasets in [Komatsu, Malapit, and Theis 2015](#)



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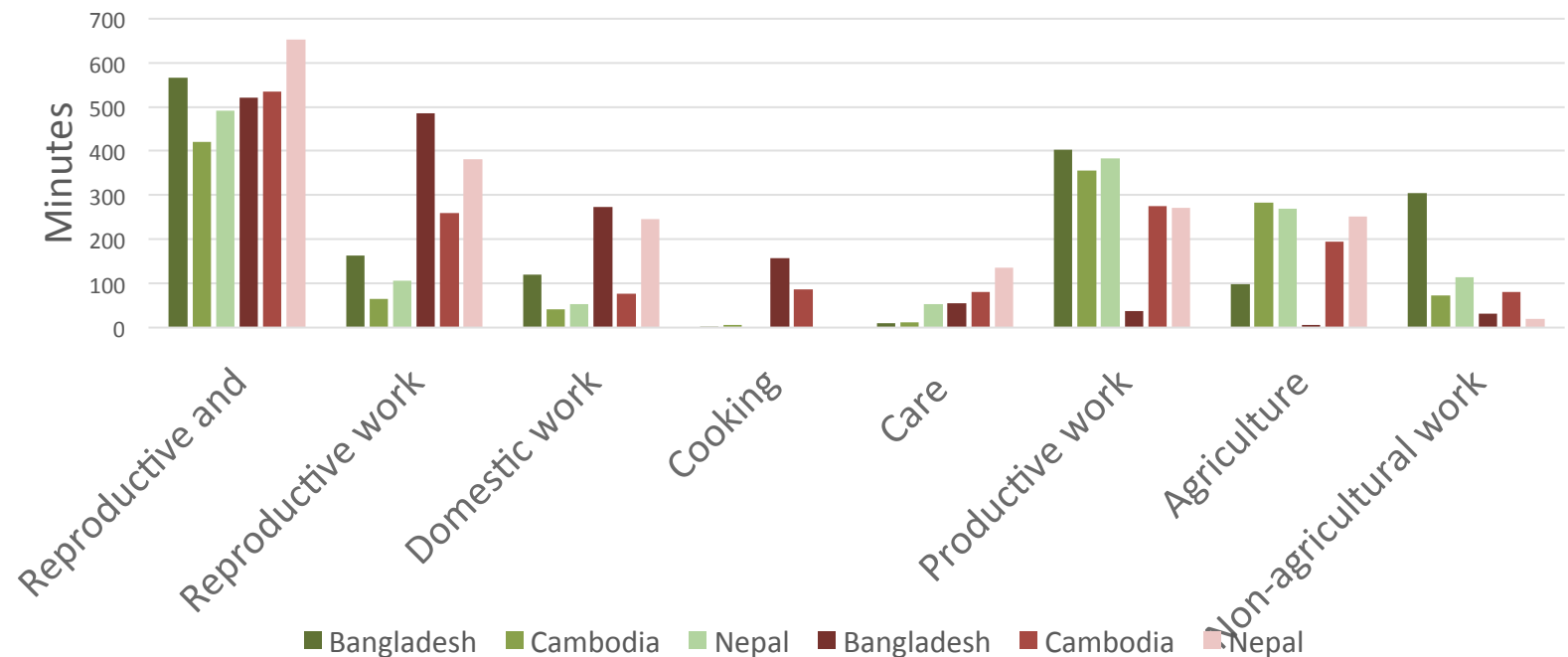




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## MEN AND WOMEN'S AVERAGE TIME USE IN LAST 24 HRS (BANGLADESH, CAMBODIA, NEPAL)



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Source: PBS survey datasets in [Komatsu, Malapit, and Theis 2015](#)



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## DECISION MAKING CONTEXT

- Men and women often have different preferences and needs related to responding to climate change
- To what extent do they have power – in the household and community – to influence decisions in line with their priorities?
- Women face various forms of exclusion from participating meaningfully in organizations that set rules or allocate resources for adaptation and NRM (e.g. water user associations)
- Collective action/groups can increase negotiating power with service providers (e.g. landlords, axial flow pumps example)
- Sex-disaggregated indicators that count participation in groups are good, but we can do better!

Mini literature review + programming ideas:

- [What do we know about women in water user groups?](#)





## WILL CSA CLOSE OR EXACERBATE GENDER INEQUALITIES?

- **The costs and benefits of responses to climate change, including CSA, are not distributed across all household members equally.**
- How does time use change on different activities, and for whom?
- How does relative control over income change?
- Who gains/loses assets?
- Who is impacted by changes in human capital investments? (e.g. leaving school, reduced health services)
- Who changes consumption?
- Who is more exposed to health risks?

**Programming entry point:** Conduct sex- and age-disaggregated M&E across a range of not necessarily intended impacts if you want to know!





## KEY TAKEAWAYS

- We need to consider the implications of climate change coping strategies on nutritional status
- We need to integrate WASH, health/nutrition and CSA to ensure maximum impact on child nutrition
- Gender inequalities can constrain adoption of CSA and miss opportunities for increasing climate resilience
- The costs and benefits of CSA are not distributed across all household members equally
- CSA can help close the gender gap, but if not designed and measured well, can exacerbate inequalities
- Entry points for increasing women's participation will vary between contexts – need to investigate specific context





## SMALL GROUP QUESTIONS

### GROUP A:

- What are the main constraints to responding to climate change in your country context? Are these constraints different for different social groups (e.g. men and women)?

### GROUP B:

- What are the key options for responding to climate challenges in your country context? Are these options different for different groups/actors?

### GROUP C:

- What are the environmental, nutrition, health and gender implications of climate change responses being promoted or adopted in your country context? Are there tradeoffs across outcomes and/or groups of people?

### ALL GROUPS:

- What are programming ideas for improving outcomes and reducing tradeoffs?
- What key questions remain for you after this discussion? What further research, collaboration, or knowledge exchange would help address these questions?







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