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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

Moderator: Jeannie Harvey, USAID

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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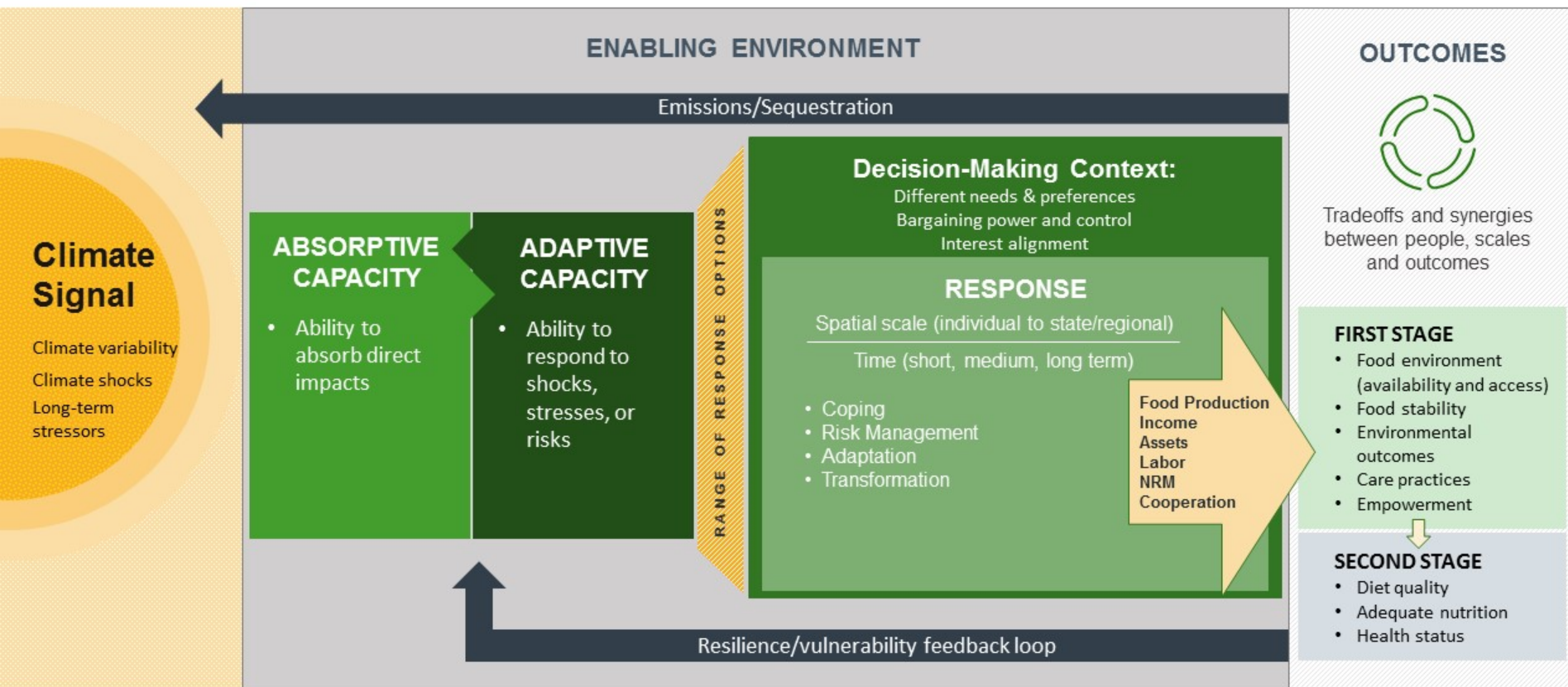
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Framework for Climate, Gender, and Nutrition



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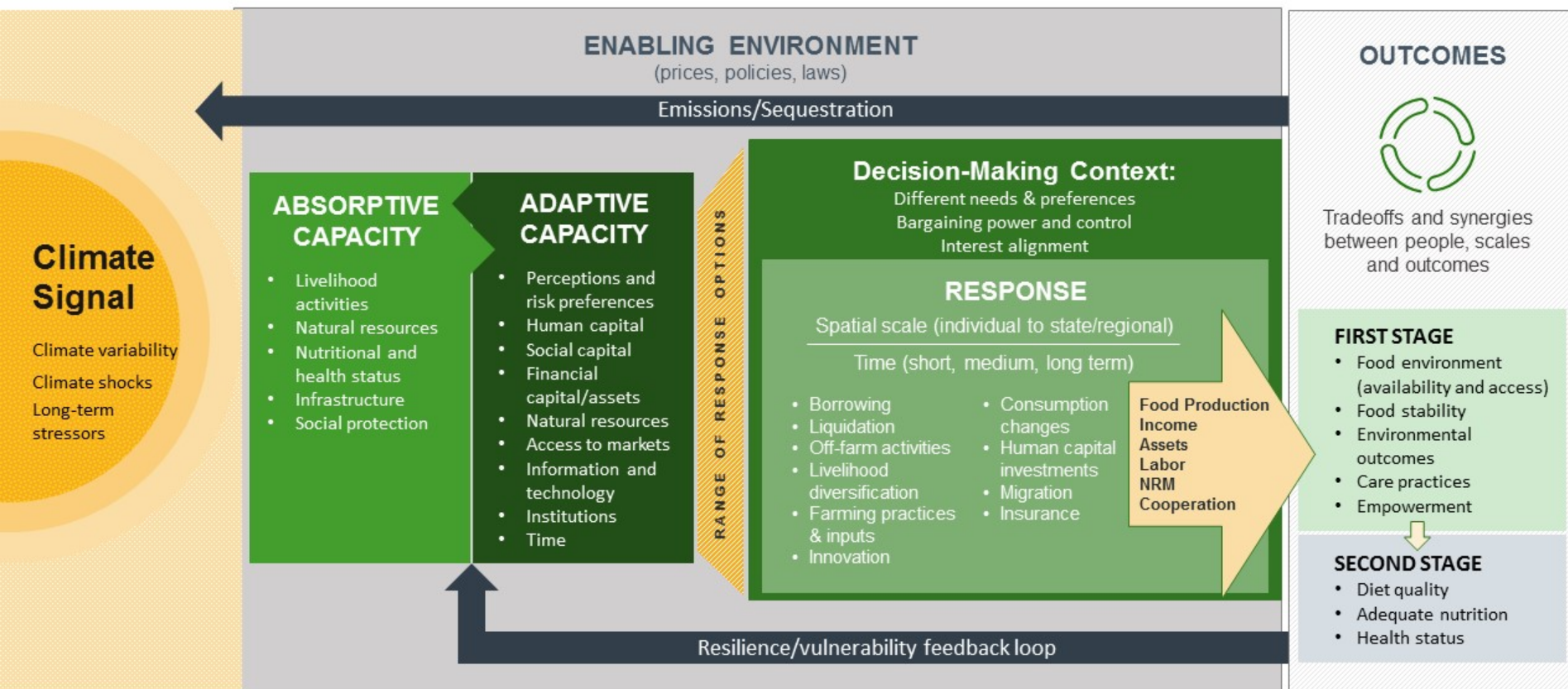
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Framework for Climate, Gender, and Nutrition – Household Level



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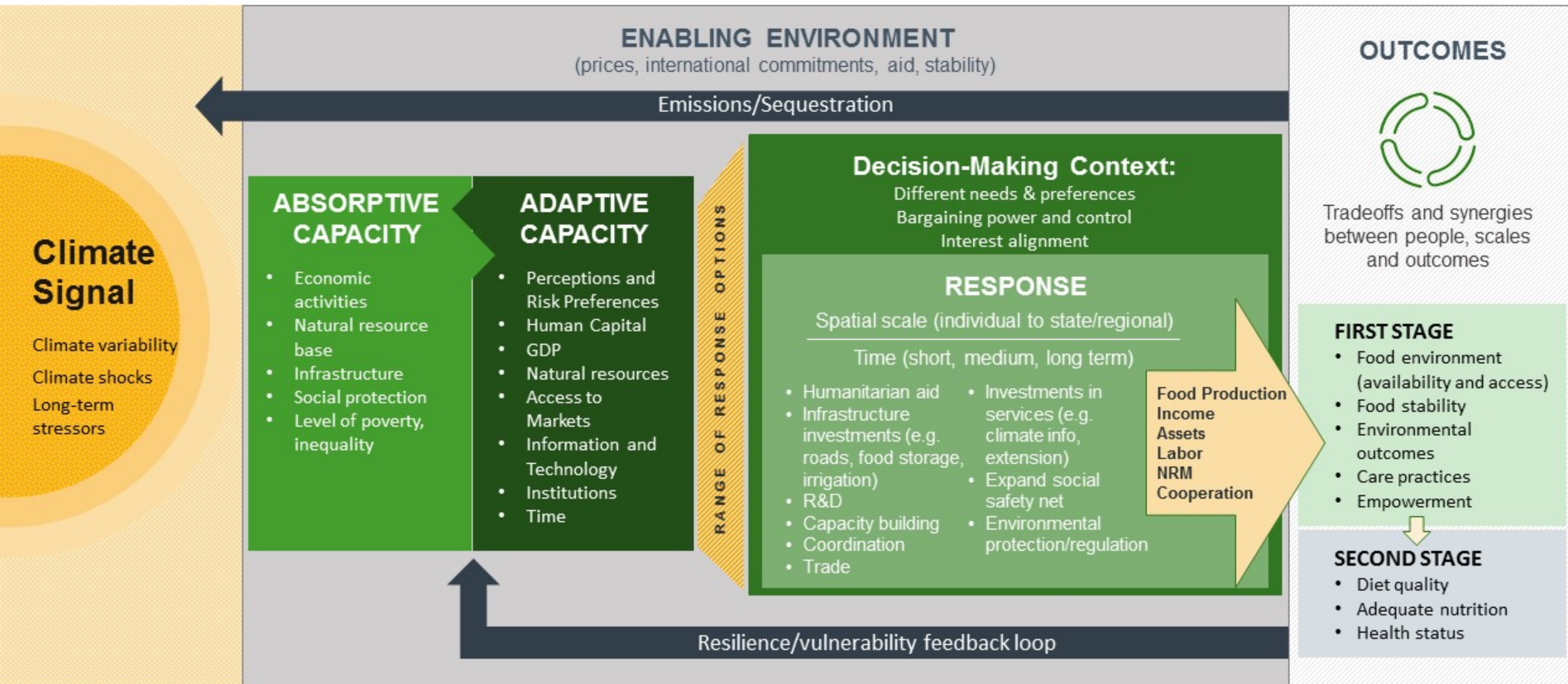
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Framework for Climate, Gender, and Nutrition – Policy/Program Level



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Climate and nutrition: Considerations for nutrition-sensitive approaches



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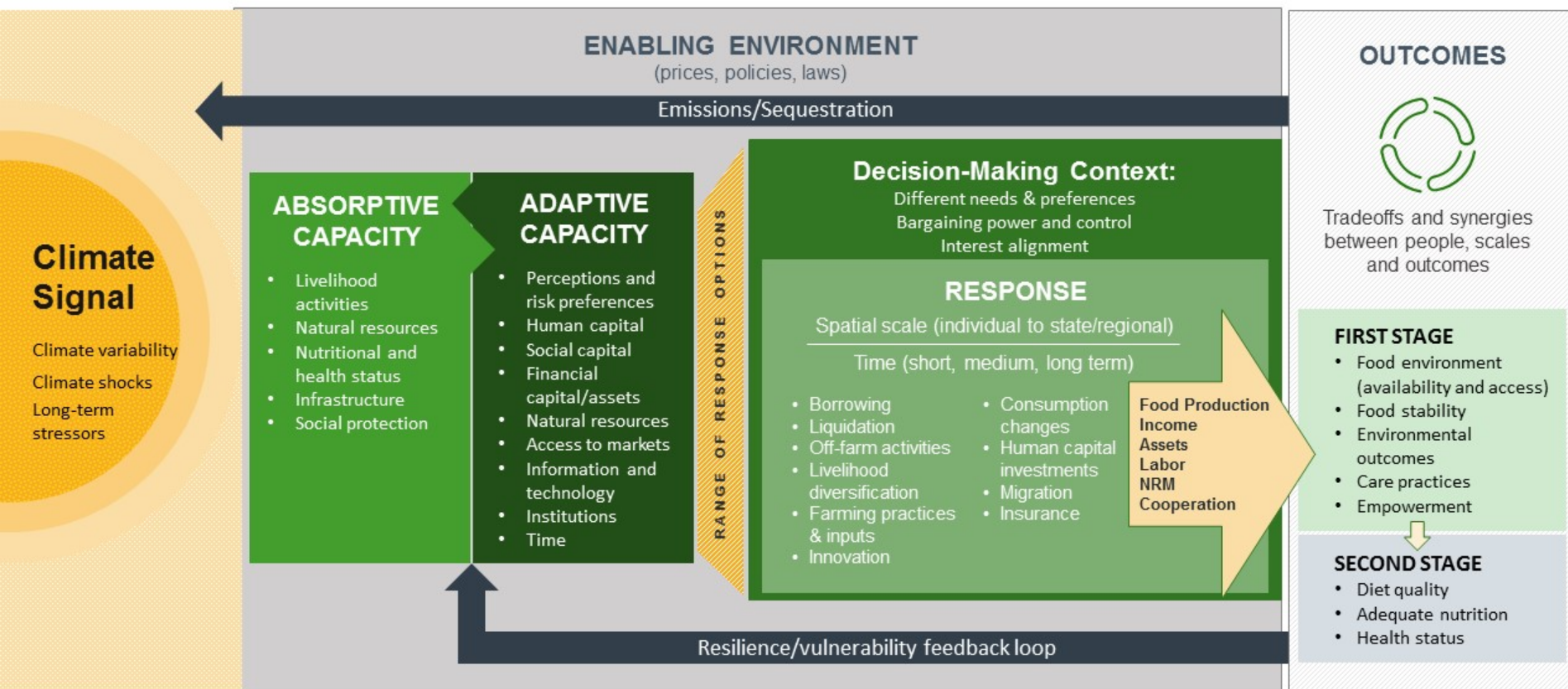
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Framework for Climate, Gender, and Nutrition – Household Level



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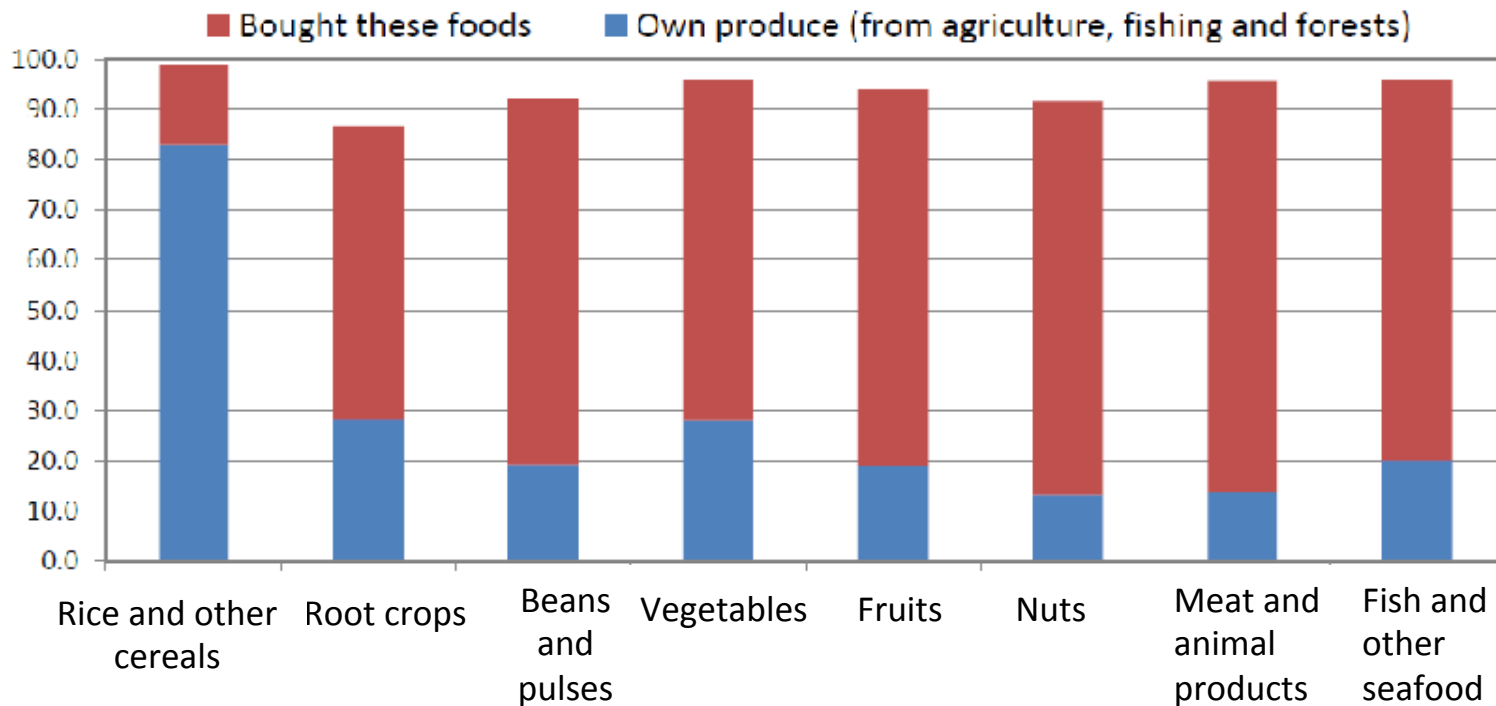
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CAMBODIA - SOURCES OF FOOD



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](#)



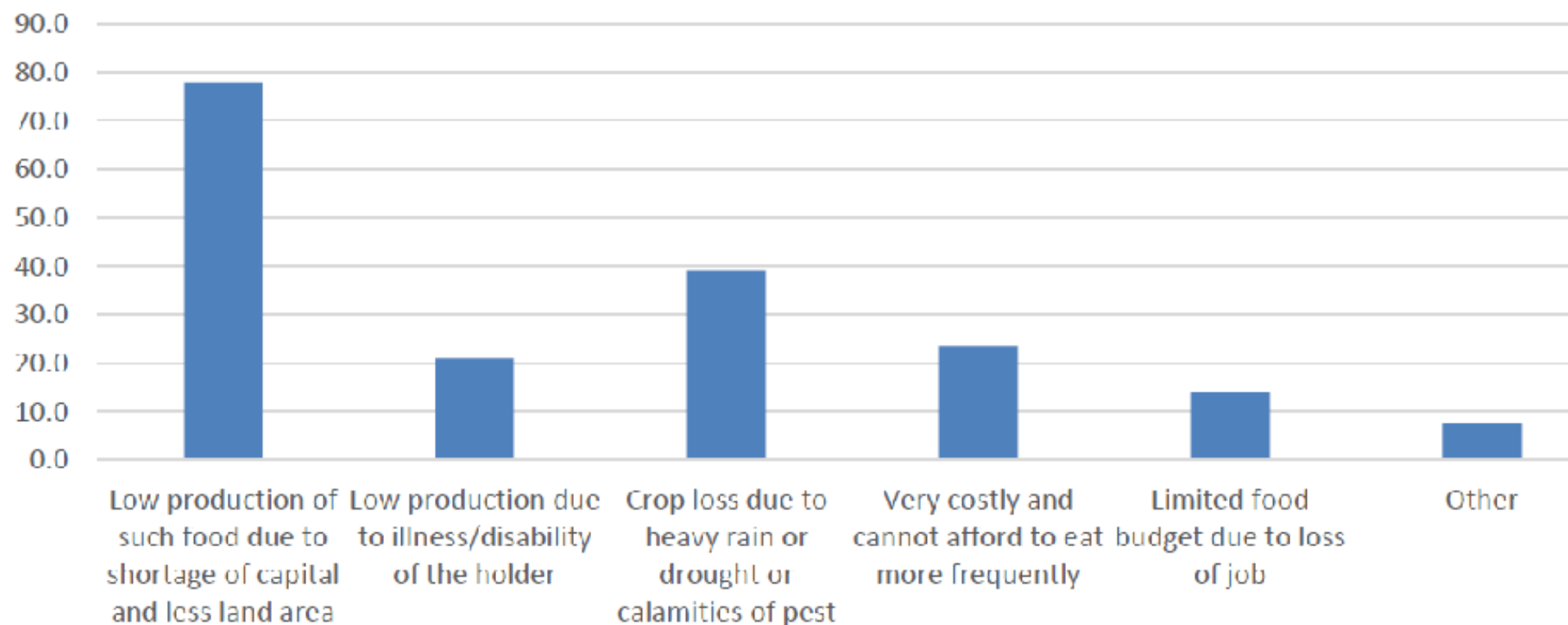
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CAMBODIA - VARIOUS CAUSES OF FOOD SHORTAGE



Percentage of households reporting various causes of food shortage.



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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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[Census of Agriculture 2013](#)



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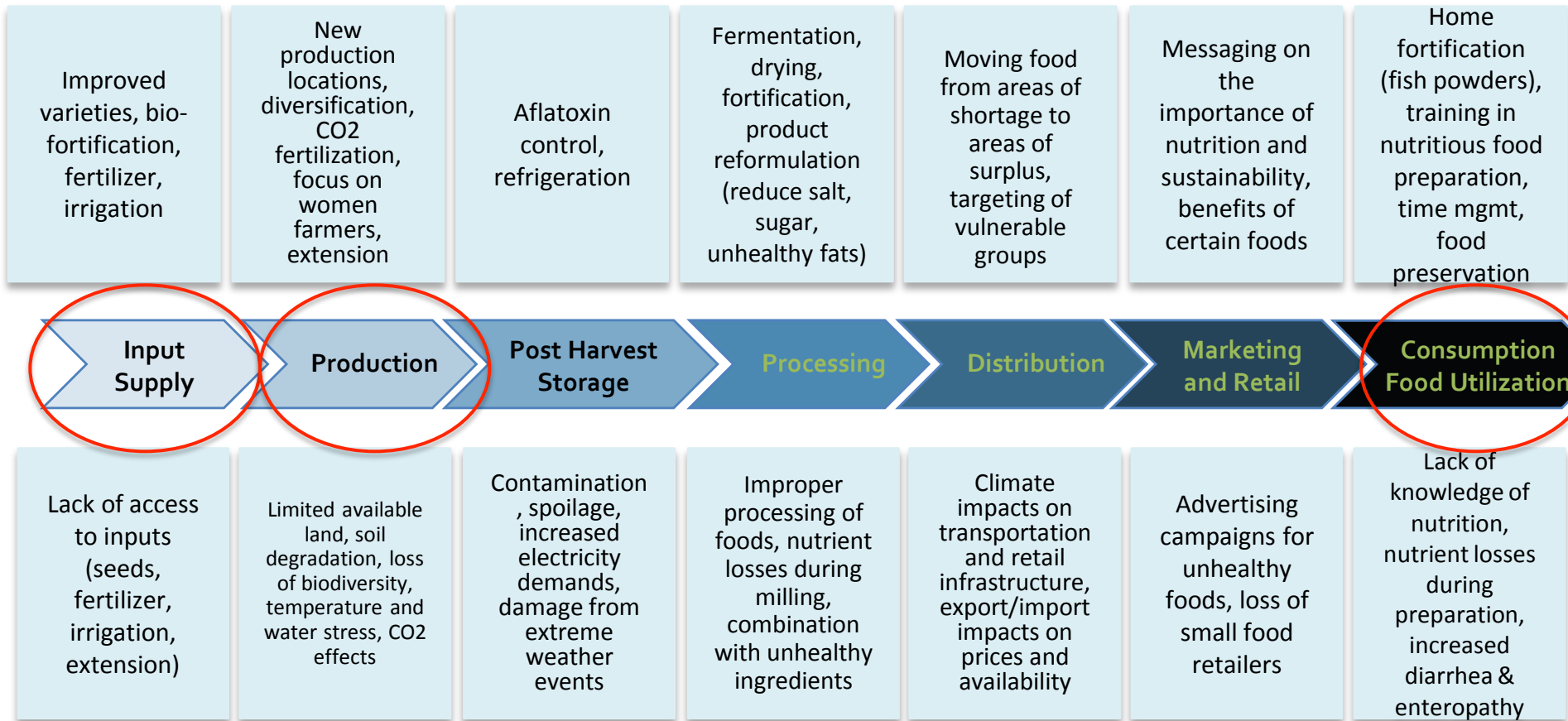


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Climate, Nutrition Smart Value Chains

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:

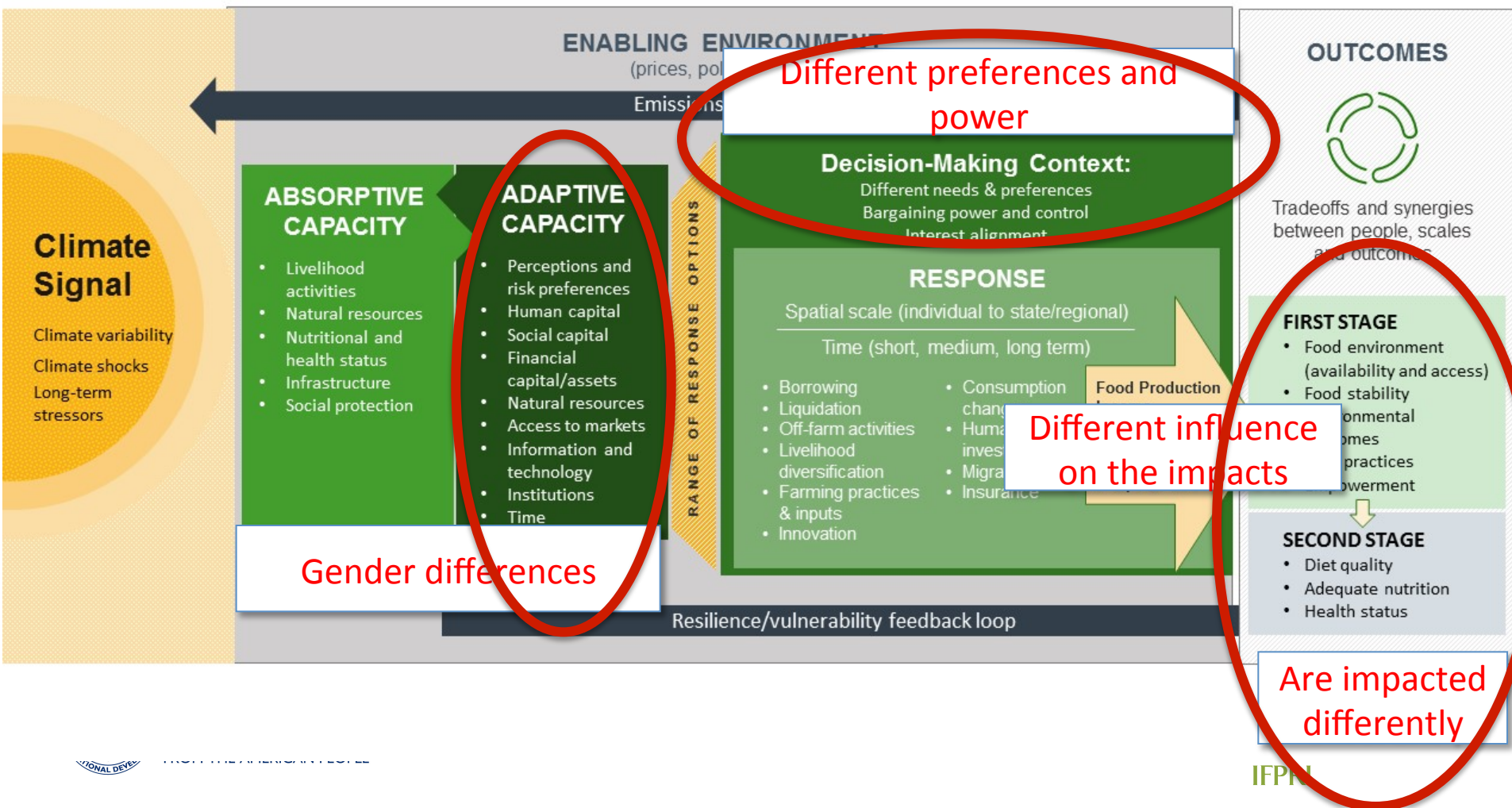
- ☐ Ensure social inclusion: *who is adopting CSA and who is not?*
- ☐ Mitigate potential harm to the most vulnerable: *how can we catch and reduce unintended negative consequences or inequalities in CSA?*
- ☐ Participatory input: *in what ways can women's unique knowledge and networks contribute to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





WHERE ARE THE GENDER DIFFERENCES?

Framework for Climate, Gender, and Nutrition – Household Level





MEN AND WOMEN GET INFO FROM DIFFERENT SOURCES (BANGLADESH)

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

Source: Quisumbing et al under preparation, Bangladesh

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 | 0.03 | 0.02 | * | 0.31 | 0.17 | |
| Improved high yielding varieties | 0.62 | 0.42 | *** | 0.55 | 0.48 | |
| Irrigation | 0.97 | 0.97 | | 0.62 | 0.55 | * |
| Applying crop residue | 0.56 | 0.54 | | 0.42 | 0.40 | |
| Composting | 0.79 | 0.70 | *** | 0.37 | 0.40 | |
| Livestock manure management | 0.62 | 0.60 | | 0.48 | 0.33 | *** |
| More efficient fertilizer use | 0.88 | 0.56 | *** | 0.83 | 0.64 | *** |
| Cover cropping | 0.14 | 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 | 0.67 | ** |
| Integrated pest management | 0.79 | 0.65 | *** | 0.51 | 0.48 | |



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 AFS \(INGENAFS\)](#)





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...

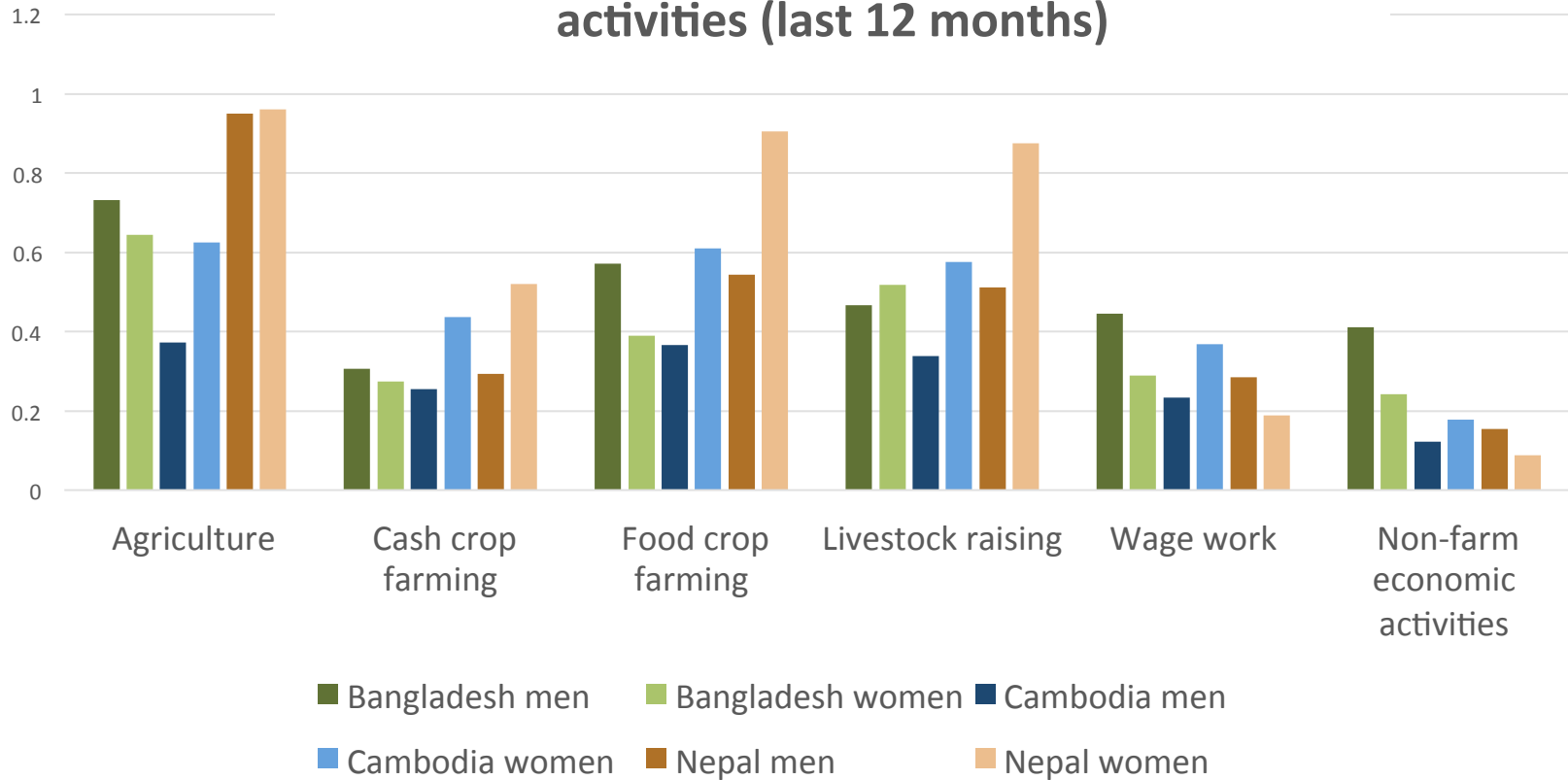




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Percent of respondents who engaged in productive activities (last 12 months)



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



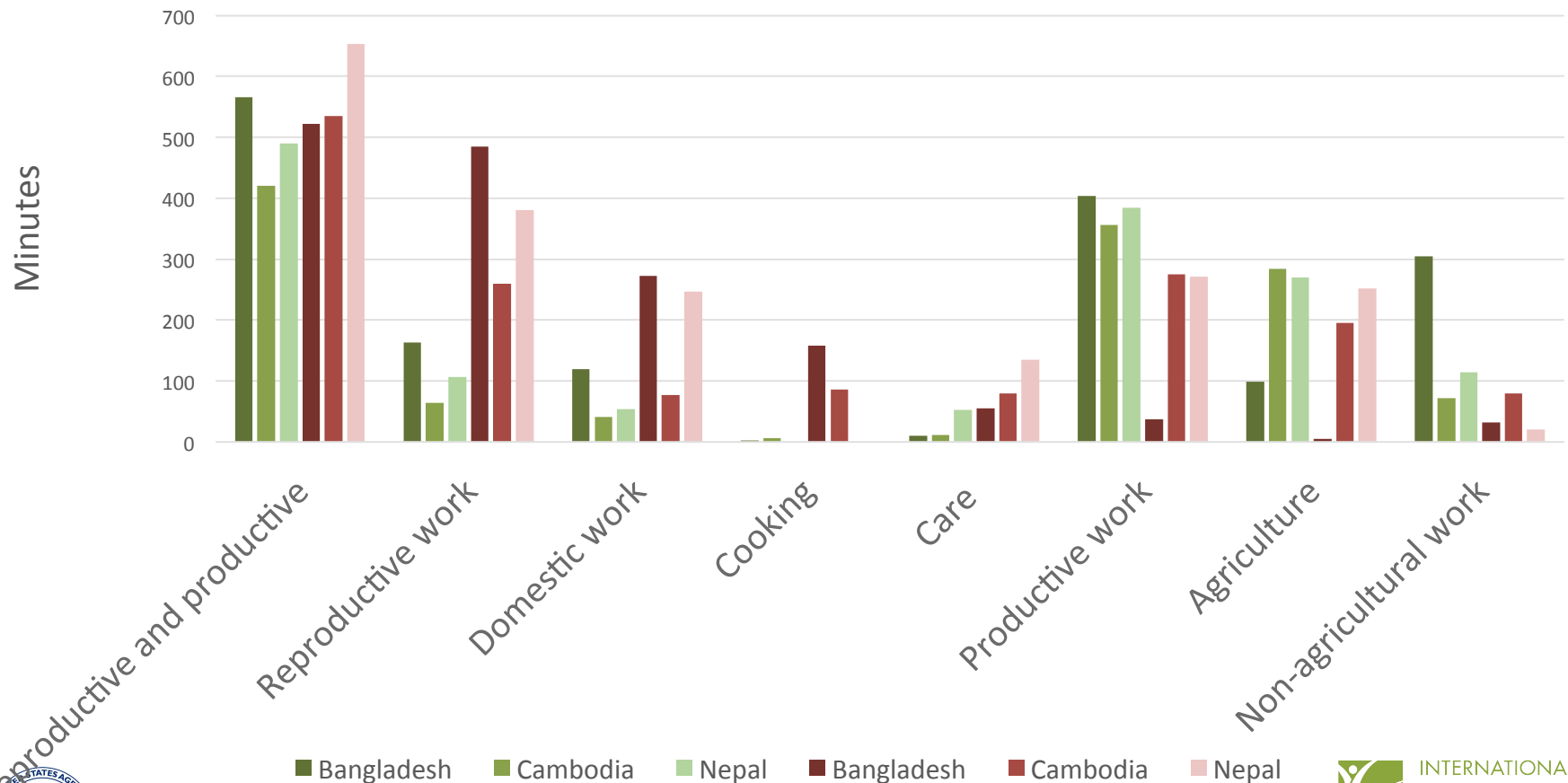
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MEN AND WOMEN'S AVERAGE TIME USE IN LAST 24 HRS (BANGLADESH, CAMBODIA, NEPAL)



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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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