Exploring the links between household time use and food choices in Guatemala

Jennifer Twyman
Gender Research Leader, CIAT
j.twyman@cigar.org

The Project: His and Hers, time and income: How intra-household dynamics impact nutrition in agricultural households

immana

Innovative Methods and Metrics for Agriculture and Nutrition Actions

- Understand how farm-household decision-making processes combine income/price incentives, nutrition knowledge, household characteristics and time use constraints to shape food choices.
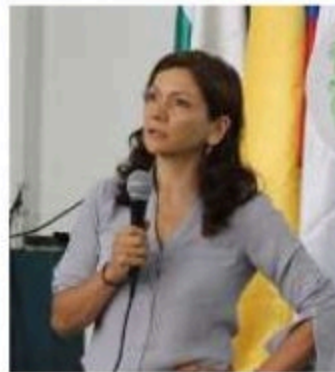
Crop income

Wages

Nutrition information

Food consumption and care-time choices

Nutrition
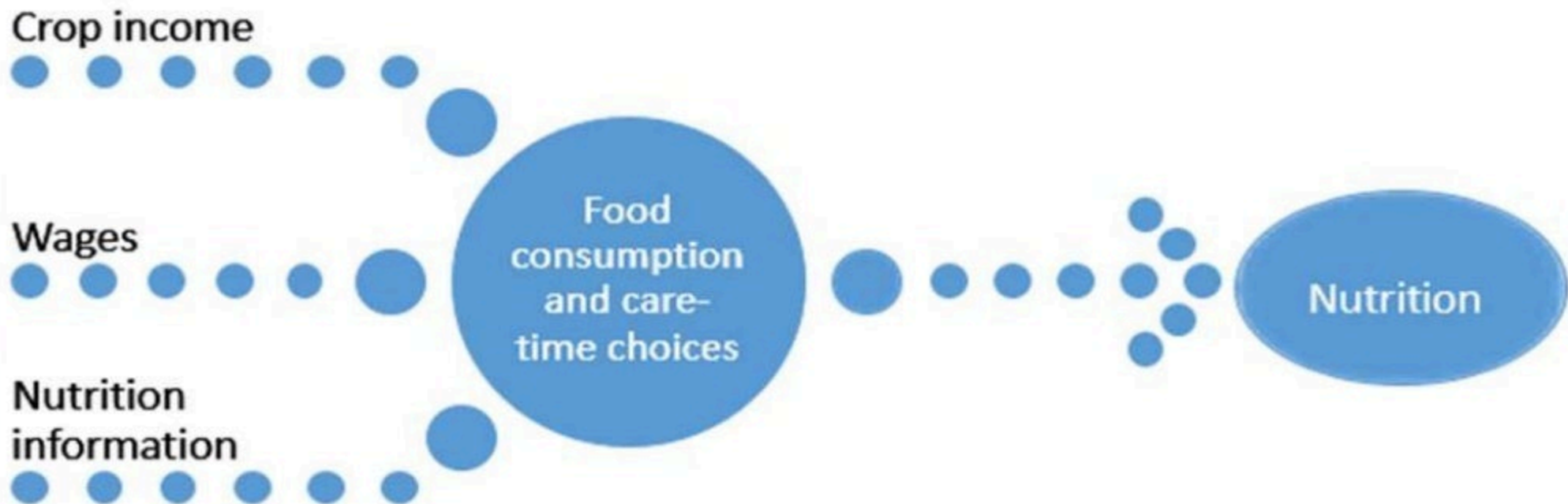
The Team

CIAT
Since 1967 / *Science to cultivate change*

UF UNIVERSITY *of* FLORIDA

WAGENINGEN
UNIVERSITY & RESEARCH

Joanna van Asselt,
PhD Student

Lucy (Emma) Cosenza,
MSc Student

Juliana Muriel
Elizabeth Peleaz

Guatemala partners:

- CRS
- Khanti

immana
Innovative Methods and Metrics for
Agriculture and Nutrition Actions

Motivation (1): Gender considerations in agriculture and nutrition projects

Agriculture

- How to increase women's participation?

- What are men's & **women's** roles in agricultural production?

(Agriculture for) Nutrition

- Target women, therefore we are doing gender work.

- What are **men's** & women's roles in household food security, diets, and nutrition?

How are household decisions around food made? What are the intra-household gender dynamics that influence food choices? Specifically, about how men and women use their time and income and the impact on household diet?

Motivation (2): Women's empowerment and nutrition, synergies or trade-offs?

- Women's (economic) empowerment is often associated with women earning income and having control of that income.
  - Increased household income → increased food budget, more diverse diets, and improved nutrition.
  - Less time for household & care responsibilities → purchasing more processed, convenient foods that may be less nutritious.
    - Assumes men do not take on these responsibilities (or no re-allocation of time use among household members).

Specific research questions

1. Does an increase in income result in more diverse food choices?

2. How do income incentives affect household food consumption through time allocation decisions?

3. Does nutrition information result in more diverse food choices?
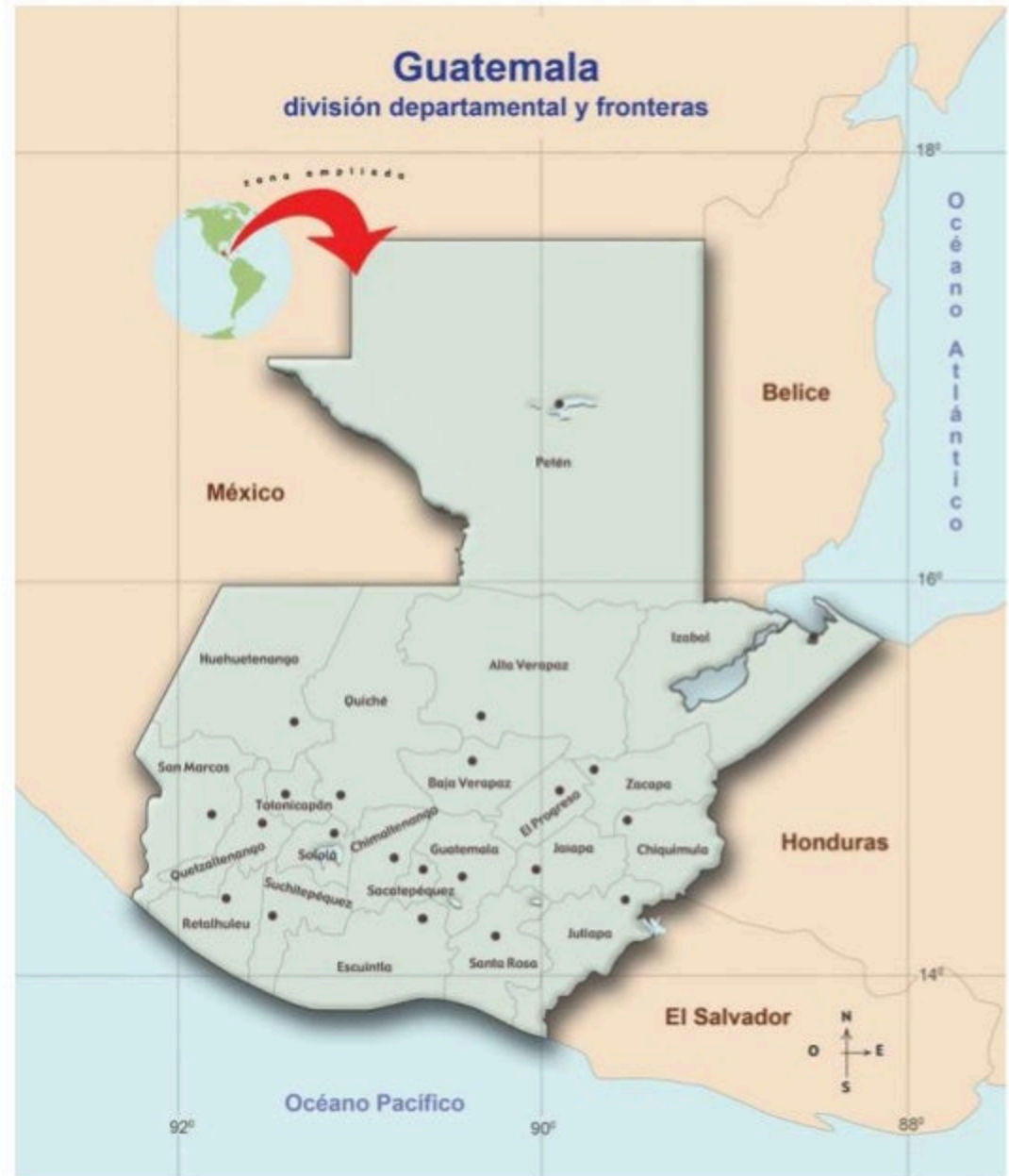
4. Do households in which women have higher empowerment have different consumption patterns compared to households where women are less empowered?

Where did we conduct our study?

Guatemala

- Prevalence of stunting (49.8%).
- Overweight affects more that 50% of women in reproductive age (Rameriz-Zea et al., 2014).

Guatemala
división departamental y fronteras

Study sites and sample

Region	Department	Municipality	# of communities by municipality	# Households
EAST (white and mestizo inhabitants)	Zacapa	La Union	9	78
	Chiquimula	Olopa	5	47

Region	Department	Municipality	# of communities by municipality	# Households
WEST (strong indigenous influence)	San Marcos	Nuevo Progreso	5	88
		La Reforma	4	37

TOTAL HOUSEHOLDS= 250   TOTAL INDIVIDUAL SURVEYS= 500

Methods

1. Survey pre-test, Enumerators Training and Field work

OCT-DIC 2017

2. Data entry and data quality checks ('data cleaning')

JAN-MAY 2018

3. Beginning of data analysis phase

JUN-OCT 2018

DATA COLLECTION

Household information: Demographics, land tenure, farm characterization and production, labor, food security and poverty indicators, food availability, expenses and income

Anthropometric measures: height and weight for principal man and woman, and one child > 6 months and < 5 years

Individual Information (couple headed households): A-WEAI components

Choice experiment and Labor preference game (couple headed households)

Household Level (n=250)

Individual Level (n=500)

Some preliminary results

Household Dietary Diversity

	Obs.	Mean	Min	Max
HDDS	250	7.324	2	10

The household consumed [...] yesterday?
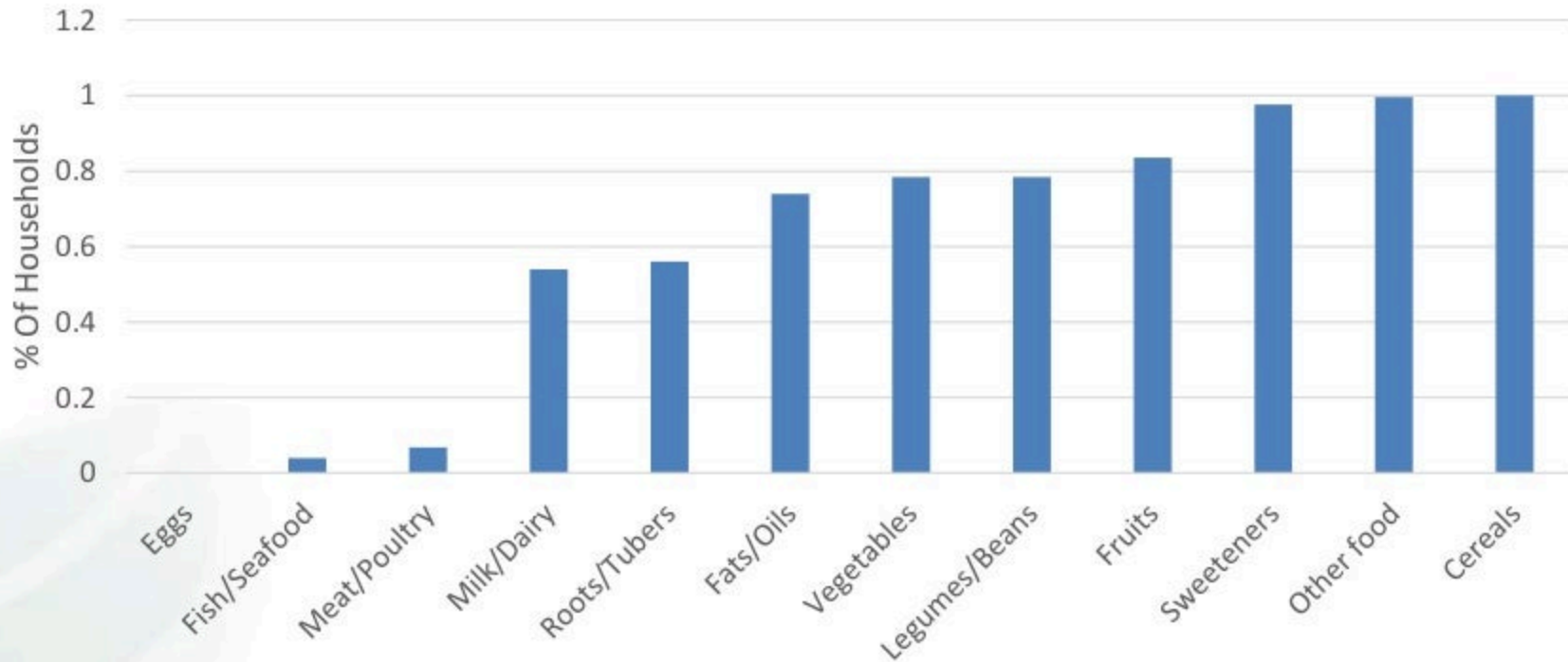
Household size (average)	6.4
Annual total Income (USD) (average)	2572

10 USD per working day

Food choice experiment: Method

6 ROUNDS- WOMEN

6 ROUNDS-MEN

2 ROUNDS-JOINTLY

3 INCOME LEVELS

(Each person plays with the 3 levels of income but the order is random across and inside households)

2 PRODUCT MIXES (FOOD ONLY, FOOD + NON-FOOD PRODUCTS)

1 INCOME LEVEL

2 PRODUCT MIXES

Coupon or voucher for purchases at local store

Value: 50 GTQ

50 GTQ (~7 USD)	75 GTQ (~10 USD)	100 GTQ (~14 USD)

50 GTQ (~7 USD)

Food Choice Experiment: Preliminary Results

	Only Food Choices	Food + Products choices	
Income 50 GTQ (~7 USD)	5.4	4.2	→ Average food groups selected per session
Income 75 GTQ (~10 USD)	6.6	4.9	
Income 100 GTQ (~14 USD)	7.3	5.6	

Number of food groups selected

|	Only Food Choices (n=220)	Food + Products choices (n=220)	Cupon (n=179)	Only Food Choices (n=220)	Food + Products choices (n=220)	Cupon (n=64)
	Hombres				**Mujeres**	
Income Level 50 GTQ	5.3	4.0	3.5	5.4	4.3	3.5
Income Level 75 GTQ	6.4	4.9		6.8	4.9	
Income Level 100 GTQ	7.2	5.5		7.4	5.6	
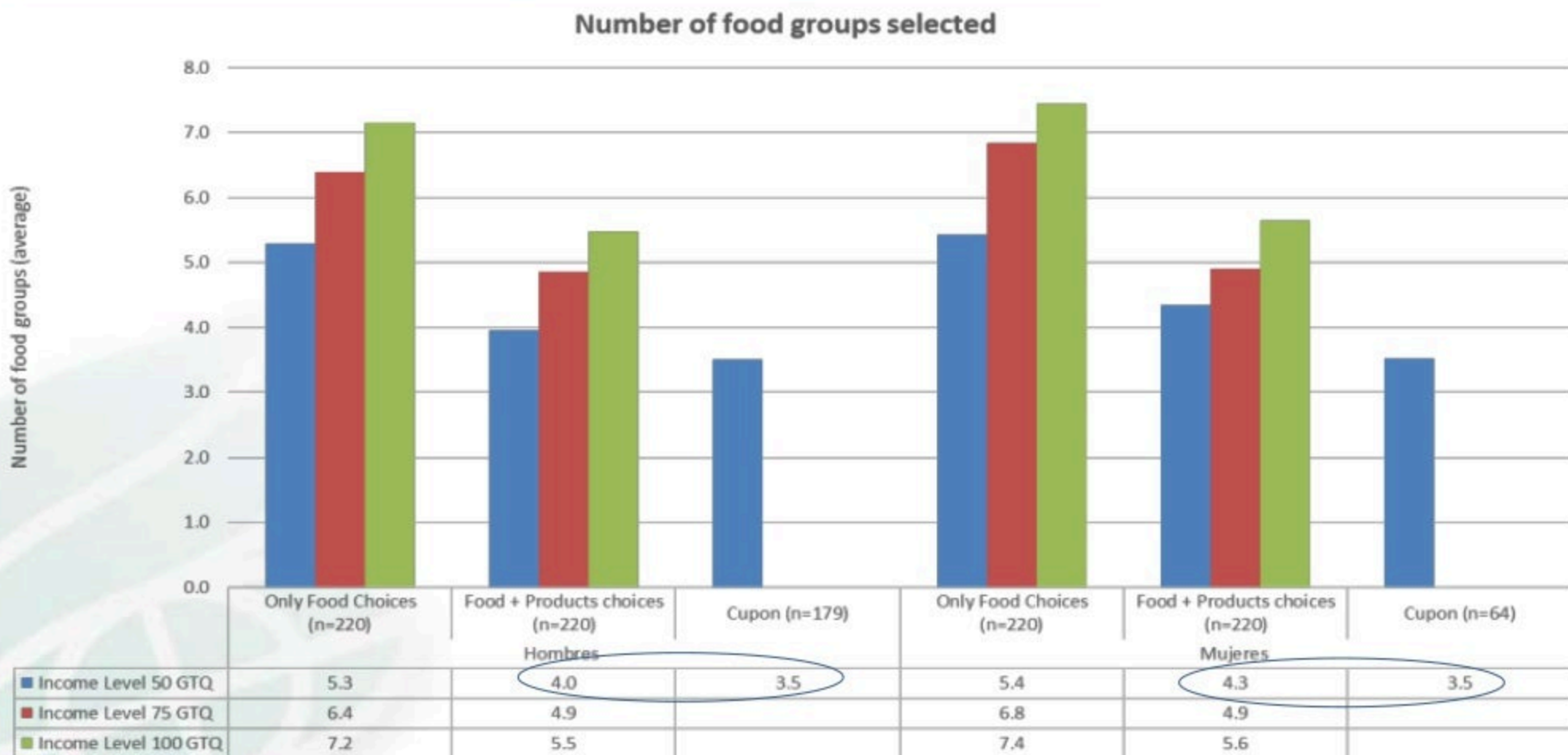
Additional results from the food choice experiment

1. Nutrition information did not impact food choices.

2. Most chosen foods: cereals, vegetables, beans and tubers.

3. At 50 GQT and 75 GQT income levels men and women's choices are quite similar.

4. At the high income level (100 GQT) choices change:
   - Men more frequently choose fruits, eggs, and alcohol (only men bought alcohol).
   - Women increase their demand for meat, sausages and dairy.

5. Women's choices more stable across the 3 income levels than men's when considering only food. But when non-food products are also considered, this is not the case.

Some preliminary results

Labor preference choice experiment

What are men's and women's labor preferences between agricultural and household/care tasks? If paid for household work, will they switch from the traditional gender division of labor?
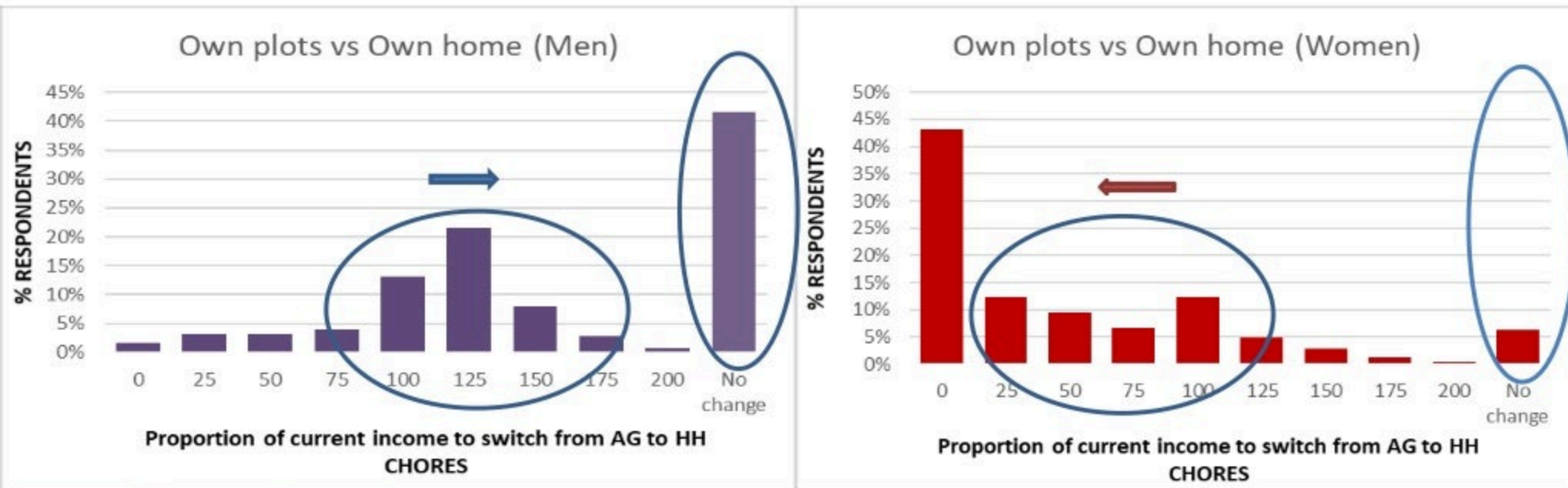

- Also asked women (men) when their husband (wife) should switch – very similar results.
- Other choices: own ag plot v. another's home, another's ag plot v. own home, another's ag plots v. another's home

Indexes (A-WEAI)

All range from zero to one; higher values = greater empowerment. An individual who has achieved 'adequacy' in 80% or more of the weighted indicators is consider 'empowered'

Total		Men	Women
A-WEAI (5DE)***		0.8938	**0.8074**

Contribution of each indicator to empowerment in Guatemala sample
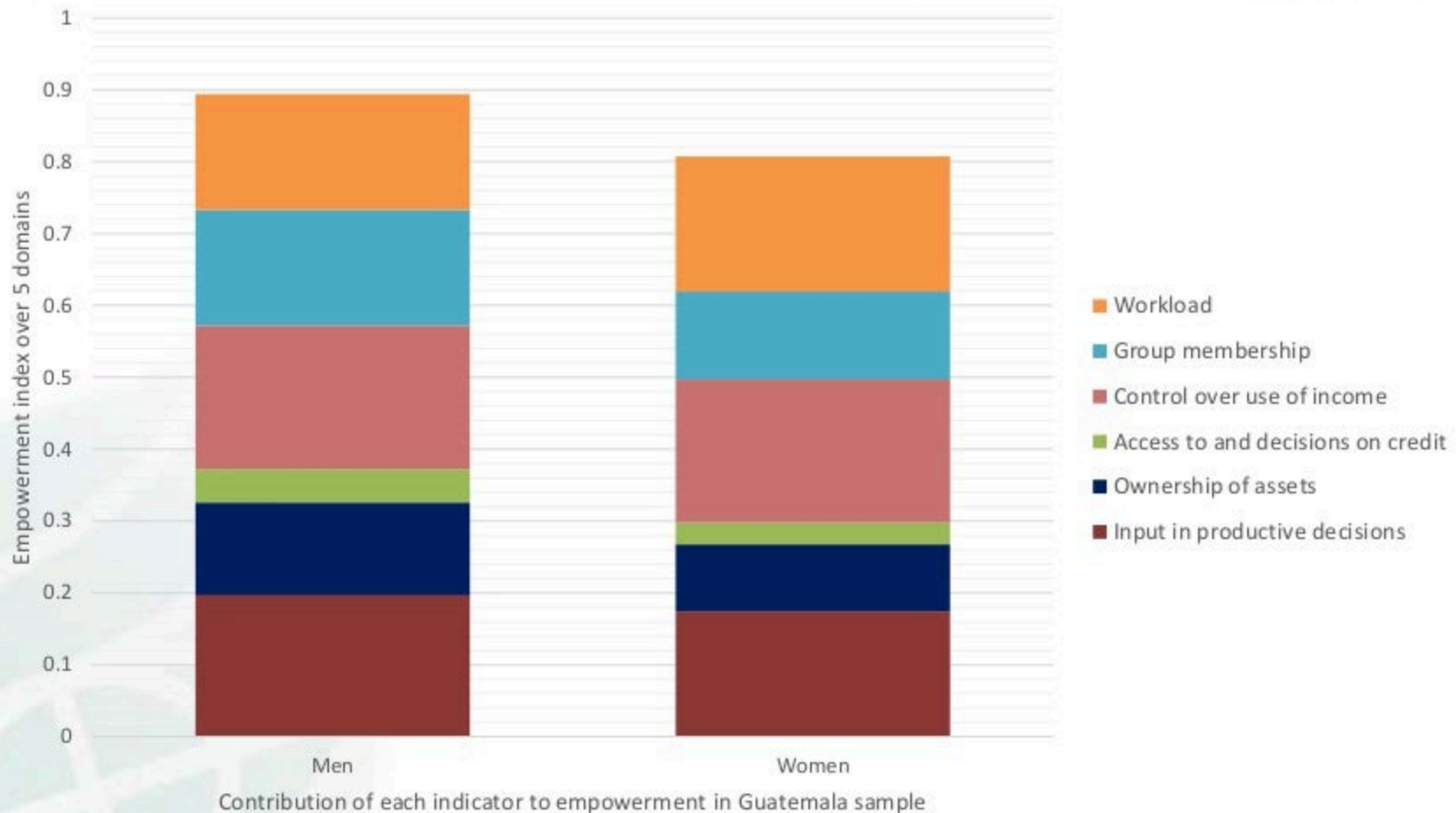
Summary and Next Steps

1. As expected, an increase in income is correlated with more diverse food choices.

   - Compare to reported household income from farm and non-farm sources.

2. Nutrition information was not correlated to more diverse food choices.

   - Explore in more detail if different food groups were chosen.

3. Men and women's labor preference follow patterns of gender norms.

   - Analyze if men's and women's time allocation is related to HDD.

Summary and Next Steps

4. Women are most empowered in domains of time and income and most disempowered in domains of resources and leadership.

   - Analyze how women's empowerment (A-WEAI: 5DE & Gender Parity) is related to HDDS, actual and choice experiments.

5. Compare results of food choice experiment between husbands, wives, and joint.

   - Whose preferences dominate?

   - Is there any correlation with women's empowerment?

THANKS!!

The Project: His and Hers, time and income: How intra-household dynamics impact nutrition in agricultural households

- IMMANA
- Understand how farm-household decision-making processes combine income/price incentives, nutrition knowledge, household characteristics and time use constraints to shape food choices.
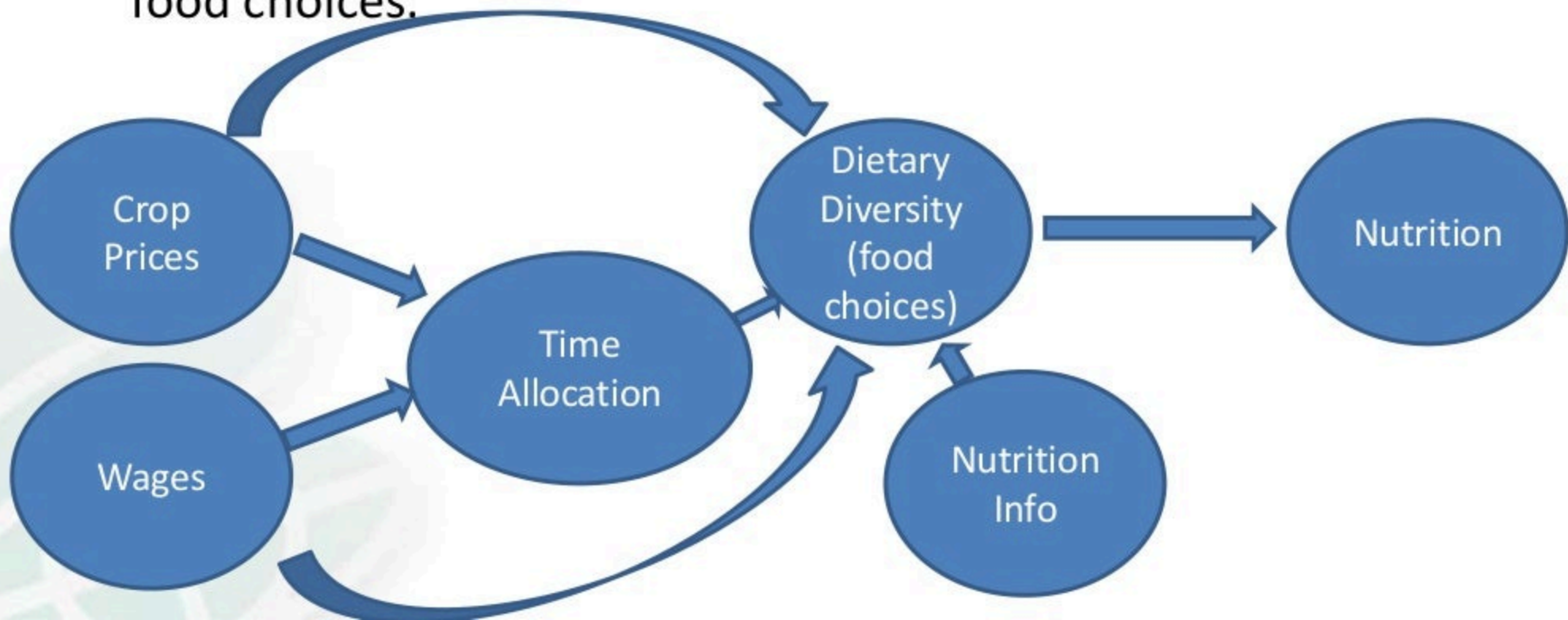
Food Choice Experiment Preliminary Results

Number of food groups selected (by information)

	Only Food Choices (n=107)	Food + Products choices (n=107)	Cupon (n=85)	Only Food Choices (n=113)	Food + Products choices (n=113)	Cupon (n=94)	Only Food Choices (n=107)	Food + Products choices (n=107)	Cupon (n=33)	Only Food Choices (n=113)	Food + Products choices (n=113)	Cupon (n=30)
	INFORMATION			NO INFORMATION			INFORMATION			NO INFORMATION		
	MEN						WOMEN					
Income Level 50 GTQ	5.1	4.0	3.6	5.5	4.0	3.4	5.3	4.4	3.5	5.5	4.3	3.6
Income Level 75 GTQ	6.3	4.8		6.5	5.0		6.7	4.9		7.0	4.9	
Income Level 100 GTQ	7.0	5.2		7.3	5.7		7.4	5.6		7.5	5.6	

Number of food groups (average)