

# A mixed methods approach enables a nuanced understanding of the gender pathway from agriculture to nutrition outcomes: a case study in Timor-Leste

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# KEY ISSUE, AIMS & METHODS







In rural Timor-Leste, the majority of the population are smallholder farmers who raise livestock as a livelihood strategy (GDS and UNFPA 2016)

However, diets consistently lack protein and child malnutrition is very high, with 50.2% stunting (MoH 2015)

**Women** “are key mediators in the pathways between agriculture inputs, intra-household resource allocation, and child nutrition” (Ruel and Alderman 2013:538-539)

## Aims

To examine gender relations in agriculture, particularly **women's agency** related to **livestock** husbandry and sale, and to **animal-source food (ASF)** purchases and consumption among semi-subsistence smallholders in Timor-Leste



## Setting

- 4 rural villages in eastern Timor-Leste
- CDNIP participants: nutrition education and agriculture diversification program, including a chicken vaccination campaign

# Mixed-methods study

## Quantitative

- Cross-sectional survey with women and men in dual-headed households to assess gender relations (n=282)
  - Abbreviated–Women’s Empowerment in Agriculture (A-WEAI) (Malapit et al. 2015), expanded (+)
- Longitudinal survey (4 times in 1 year) to assess seasonality on:
  - Household livestock production with study cohort
  - Dietary intake including ASF of mothers and children 6-59 months old (n=200 dyads)

## Qualitative

- Semi-structured interviews (SSI) with mothers, fathers, relatives & key informants (n=35) to explore social norms on decision-making and ASF intra-HH distribution
  - Families selected on the basis of highest-lowest child dietary diversity
- Sequential design to support interpretation

# Mixed-methods study

## Sampling strategy

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- 4 CDNIP villages with animal component stratified by district and by location: 2 coastal + 2 inland
- Sample size of 200 HH accounting for 20% participant dropout rate, with 50 randomly selected mothers per village
- Calculated to detect a difference of up to 0.5 food groups across seasons, relevant in a complementary PhD study

## Ethics

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- HREC Ref: 2016-2719; Northern Territory Dept. of Health and Menzies School of Health Research, Australia
- INS-RTC Ref: 41/MS-INS/DE-DP/GBP/I/2017; National Health institute, MoH Timor-Leste



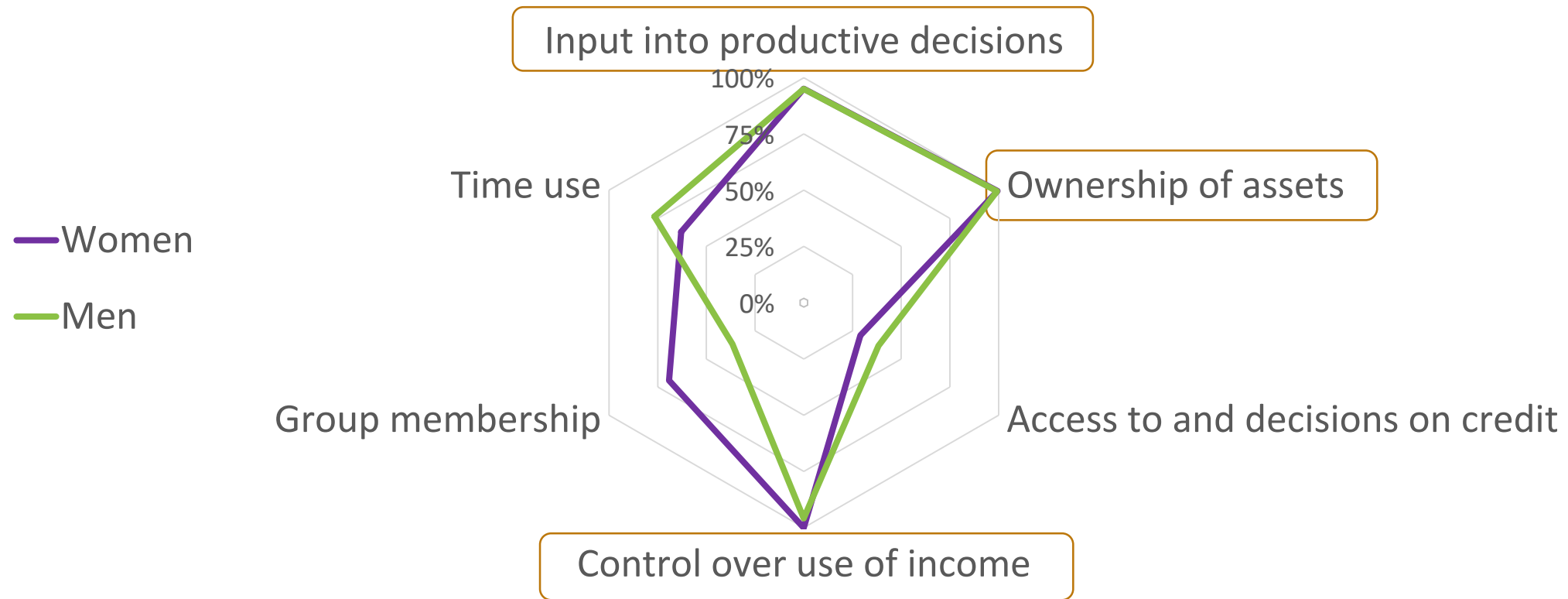
# FINDINGS



# 1. GENDER RELATIONS IN AGRICULTURE

## A-WEAI

### Individual empowerment scores, % achieved adequacy



- Similar levels of empowerment in agriculture between men and women in the production, assets and income domains
  - Membership = biased due to women's program participation

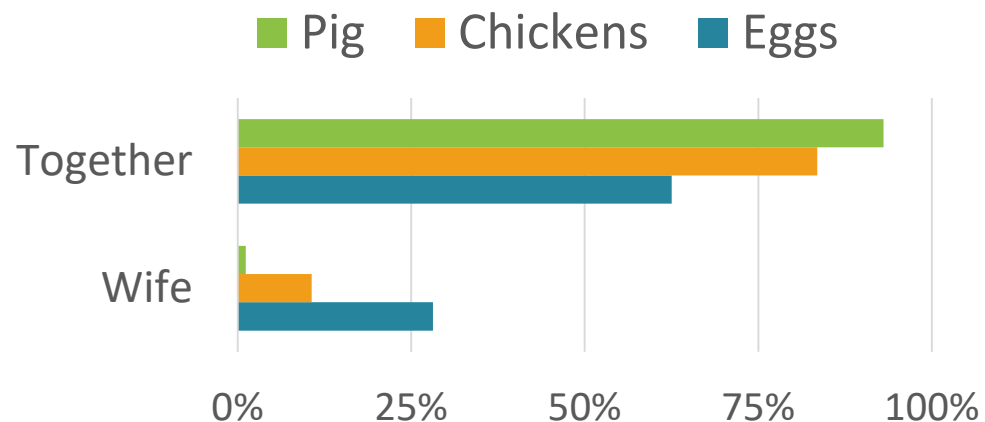


## 2. LIVESTOCK HUSBANDRY AND SALE

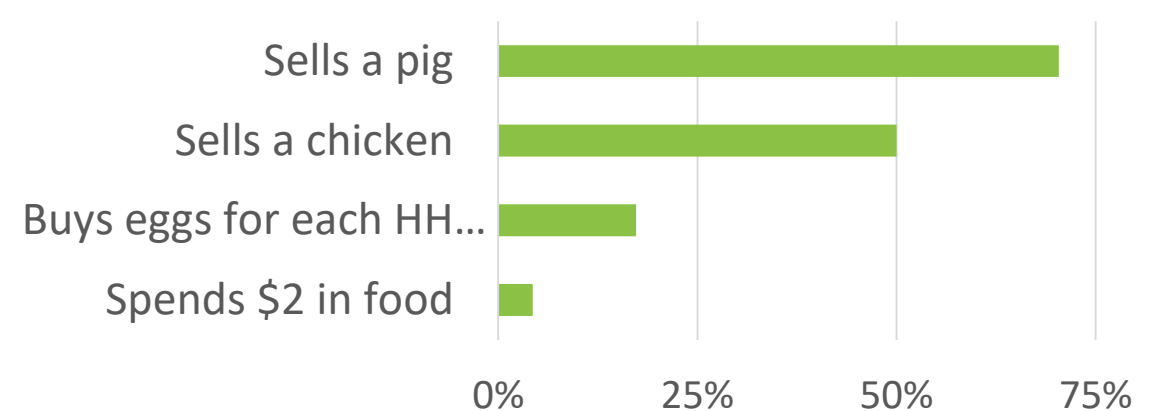
### Ownership and sale

- >88% of men and women reported *joint ownership* of animals
- Productive decisions on livestock were *jointly* made by both partners and/or family HH members
- However, decision-making is nuanced...
- Women had more autonomy to sell eggs & chickens than pigs, and to buy smaller value foods

**MEN: who makes final decision to sell?**



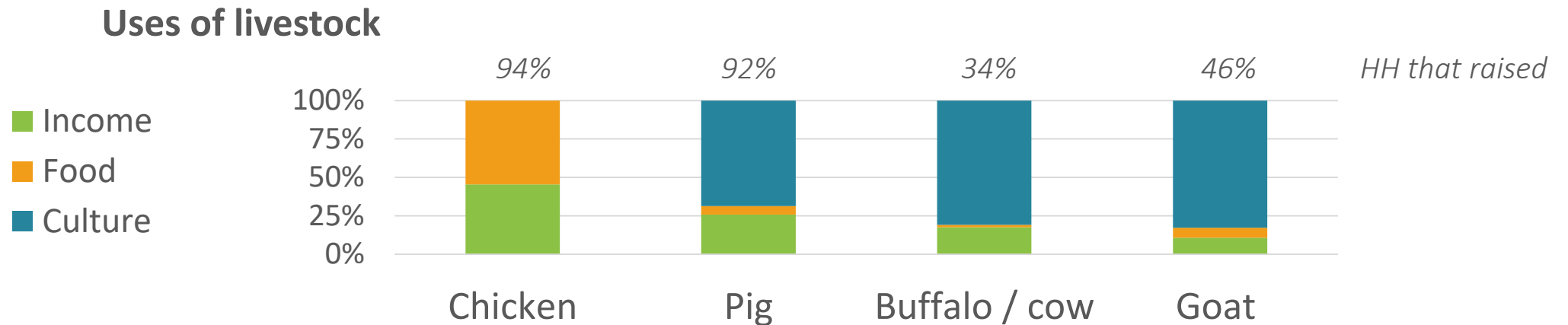
**WOMEN: husband upset if she (wife)**



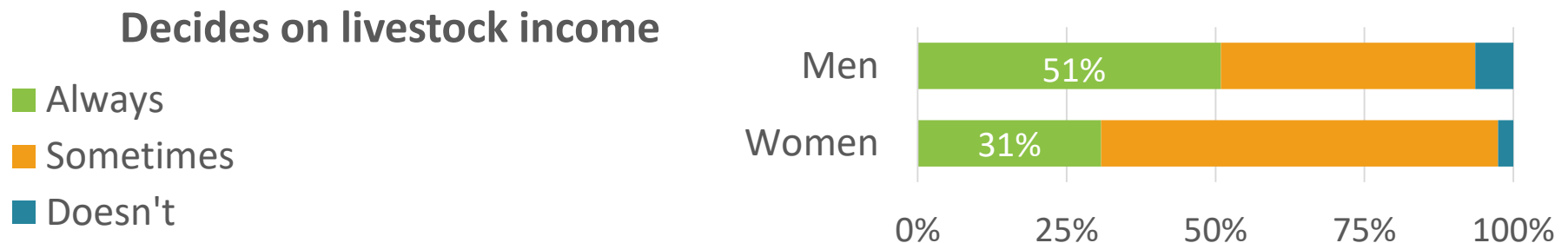
## 2. LIVESTOCK HUSBANDRY AND SALE

### Uses and income

- Poultry is used for income and consumption, and pigs satisfy cultural requirements and income to a smaller degree



- Around a third of women and half of men always decide on how to use income generated from livestock sales





## Using income for ASF

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- Small HH purchases were frequently reported as women's sole domain → survey
- Yet many women consulted/ asked for permission to their husbands to use money other than for rice → interviews
- Income generation as men's responsibility, lower women's bargaining power

"If we don't have rice we can't eat. Buying rice [my wife] can do it alone, but for non important foods like meat or eggs, we need to decide together."

Man, age 48 from Sagadati

"We need to ask men because they work and need to know how much money there is left. (...) If rice is about to finish and he doesn't know I have used the money, he will get angry and sometimes violence can happen."

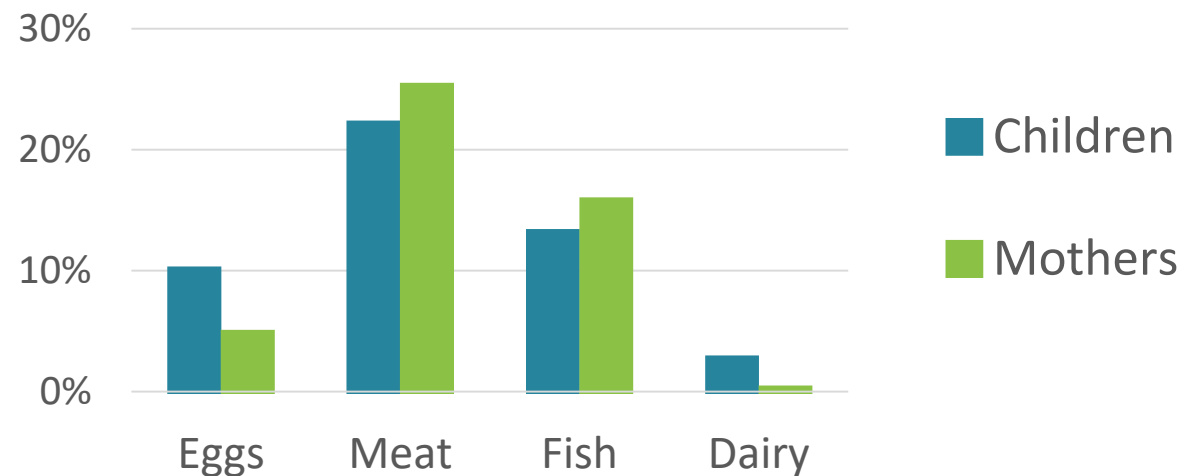
Woman, age 46 from Samalari

## 4. ANIMAL-SOURCE FOODS CONSUMPTION

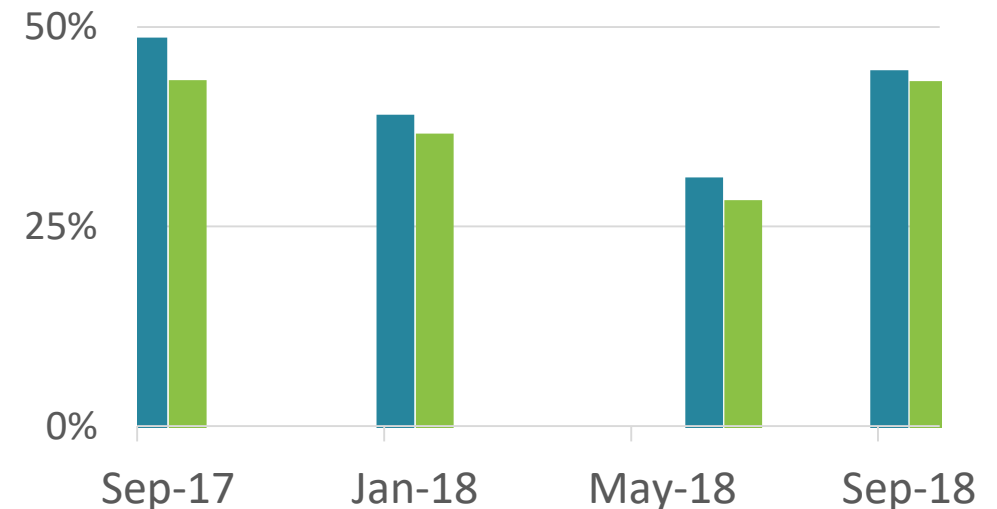
### Intra-household allocation and diets

- Gender differences in ASF allocation were not reported or observed  
≠ to grey literature (MoH 2015:163)
- Mothers reported prioritising eggs to children, corroborated by dietary data

ASF type consumed, average



ASF consumption yesterday



- Minimum dietary diversity achievement: 15% mothers (MDD-W) (FAO and FHI/360 2016) and 24% children 6 to 23 months (MDD-IYCF) (WHO 2010)



# CONCLUSIONS & RELEVANCE



# Conclusions

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- Similar levels of empowerment in production, assets and income (A-WEAI)
- Households are the farming unit in TL → joint ownership and decisions
- Higher women's autonomy in small livestock (+)
- Decision-making on income use for ASF is nuanced and informed by traditional notions of gender norms (interviews)
- Resources poverty is a structural barrier to access quality diets

# Relevance

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- The A-WEAI is a valuable tool, yet limited to assess decision-making differentials between women and men → collectivist cultures as TL
- When complemented with further enquiry and qualitative methods, nuanced processes of negotiation emerged
- Mixed methods studies provide more accurate portrays of the gender pathway from agriculture to nutrition outcomes



# OBRIGADA BARAK!

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# References

- FAO/FHI360, 2016. *Minimum Dietary Diversity for Women: A Guide for Measurement*. Rome: Food and Agriculture Organization of the United Nations and FHI360.
- Ministry of Health (MoH), 2015. *Timor-Leste Food and Nutrition Survey 2013*. Dili: Government of Timor-Leste Ministry of Health and Southeast Asian Ministers of Education Organization Regional Centre for Food and Nutrition (SEAMEO-RECFON).
- General Directorate of Statistics (GDS) and United Nations Population Fund (UNFPA), 2016. *Timor-Leste National Census 2015*. Government of Timor-Leste National Statistics Directorate and United Nations Population Fund.
- Malapit, H., Kovarik, C., Sproule, K., Meinzen-Dick, R. and Quisumbing, A.R., 2015. *Instructional Guide on the Abbreviated Women's Empowerment in Agriculture Index (A-WEAI)*. Washington, DC: International Food Policy Research Institute.
- Ruel, M.T., Alderman, H. and Maternal and Child Nutrition Study Group, 2013. *Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition?*. The Lancet, 382(9891), pp.536-551.
- WHO, 2010. *Indicators for assessing infant and young child feeding practices. Part 2: Measurements*. Geneva: World Health Organization.