

# Scrutinizing the 'feminization of agriculture' hypothesis:

## Trajectories of labor force participation in agriculture in Indonesia

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# Outline

Background and Motivation

Research Context

Research questions

Methodology and Data

Initial Findings

Next steps

# Background and Motivation

- Feminization of agriculture is widely used, definitions vary
  - Doss et al., 2018 argue that interventions based on gender myths may impede the effectiveness of policies
    - Call for better understanding of gender roles, looking beyond women
    - Call for more empirical analysis
- This study aims to provide empirical evidence in relation to the feminization of agriculture

## Research Context

- Agriculture contribution to Indonesian economy and labor absorption are declining overtime
- Indonesia aim for self sufficiency
- Over the last ten years, national statistics show:
  - **Share of women relative to men in agriculture:**
    - 2008: 38.79%, 2018: 37.49%
  - **Percentage of agriculture in women labor:**
    - 2008: 42.80%, 2018: 28.39%

# Research questions

- Do women exit agriculture at the same rate as men?
- If they are exiting, to which sectors?
- Who exactly exits?
- Why?

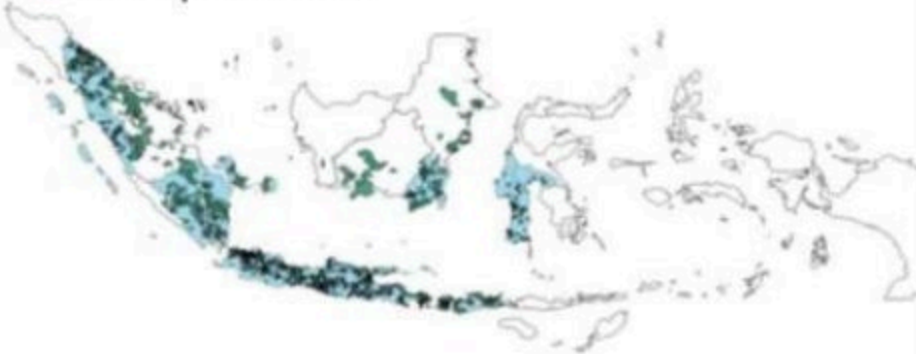


# Methodology: Mixed-methods

## Quantitative Analysis: **Indonesian Family Life Survey (IFLS)**

20 years of longitudinal data, rich in variables, high follow-up rate, and including split-off households

Baseline: 7, 200 households in 321 enumeration areas in 13 provinces.....



21 years later: 15,000+ households in 4,600+ villages, 24 provinces

### Household level

- Household Characteristics
- Farm Business
- Non Farm Business
- Household Assets
- Non Labor Income
- Economics Shocks
- Consumption
- Knowledge on Family Planning Service

### Individual level

- Education
- Subjective Wellbeing
- Marital History & Pregnancy Summary
- Household Decision Making
- Non Labor Income
- Migration
- Circular Migration
- Employment & Retirement\*
- Risk and Time Preference\* Trust\*
- Health & Community Participation

### Community level:

Environmental condition, employment, services, price, government programs, etc.

Sources:

[http://www.smeru.or.id/sites/default/files/events/d1\\_opening\\_ifls\\_firman\\_witoelar\\_0.pdf](http://www.smeru.or.id/sites/default/files/events/d1_opening_ifls_firman_witoelar_0.pdf)

# Initial Findings

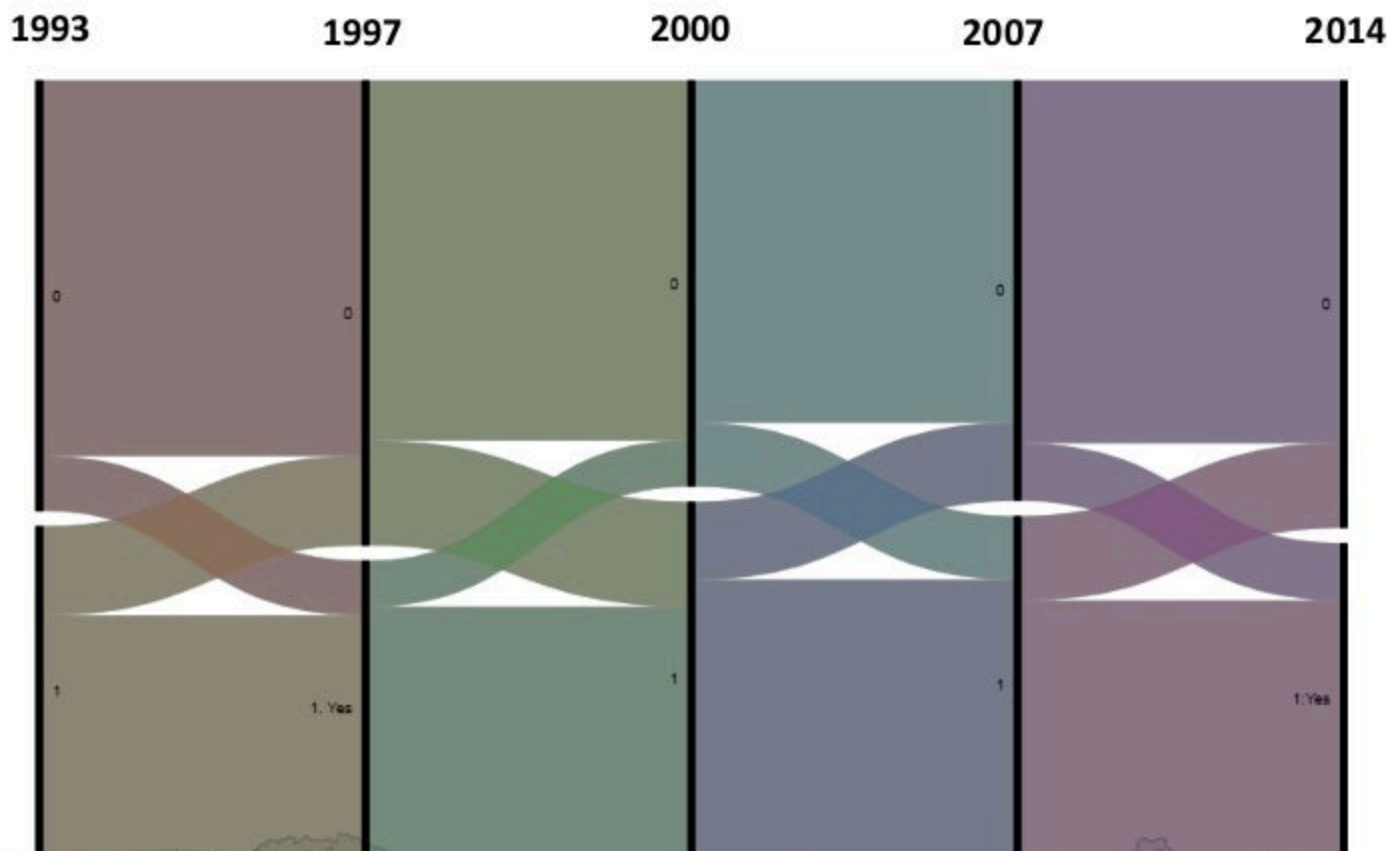
1 Households entry and exit agriculture

2 Inter-sectors labor movement from and to agriculture

3 Women's working hours are reduced over time, but they are age dependent

# 1. Dynamics of household-level participation in Agriculture

Zoom into household found in all 5 waves



From 2,415 agriculture households in 1993:

- 6% moved out completely after the first round
- 47% stay at least twice in any time – entry and exit
- 47% of those doing farm business in 1993, stay for 20 years.

N=5,590 Households



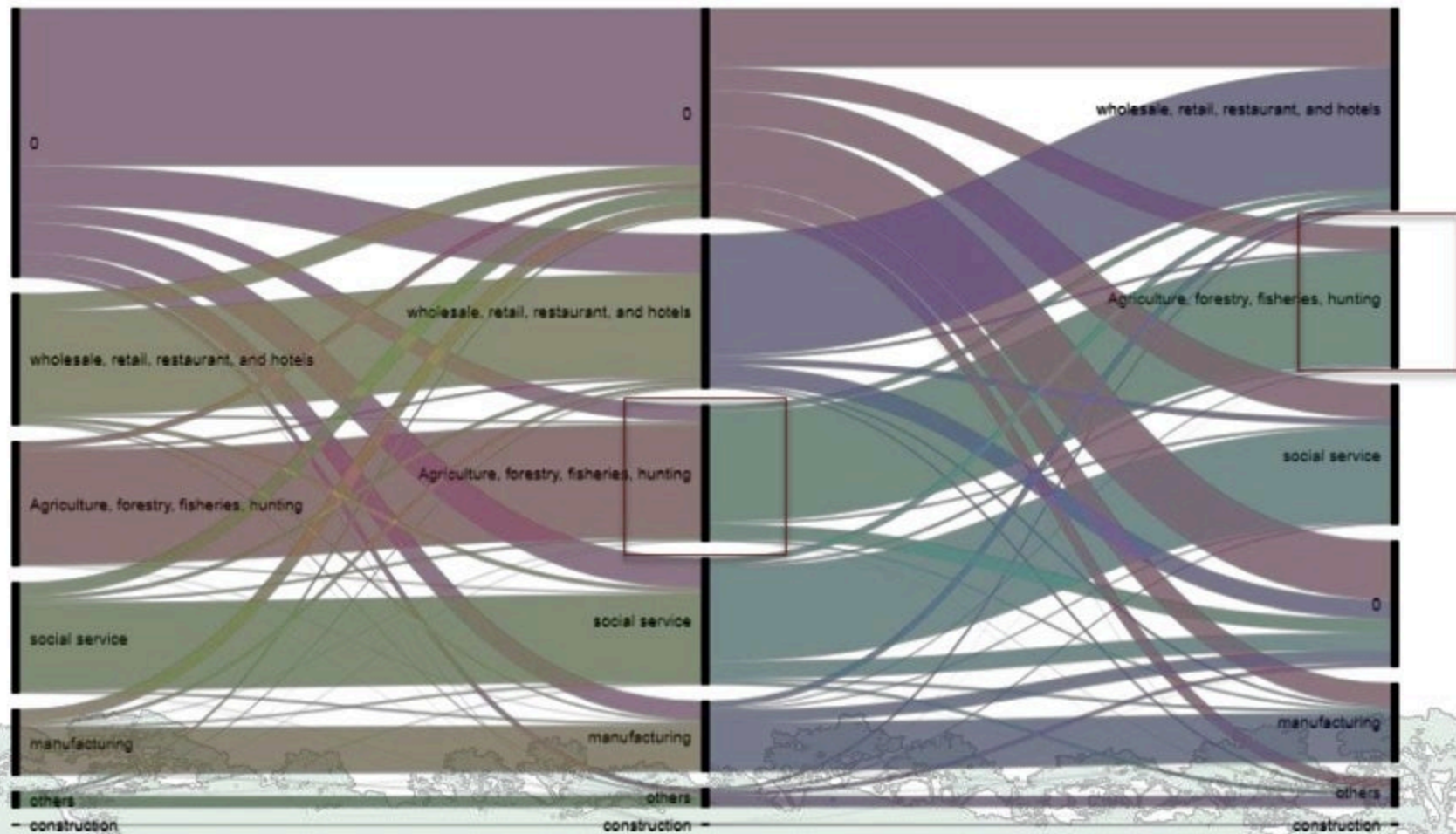
# 2. Trajectories of women's labor participation

Retrospective data recorded in 2014 from Individual 15 years older in 2007

2008

2011

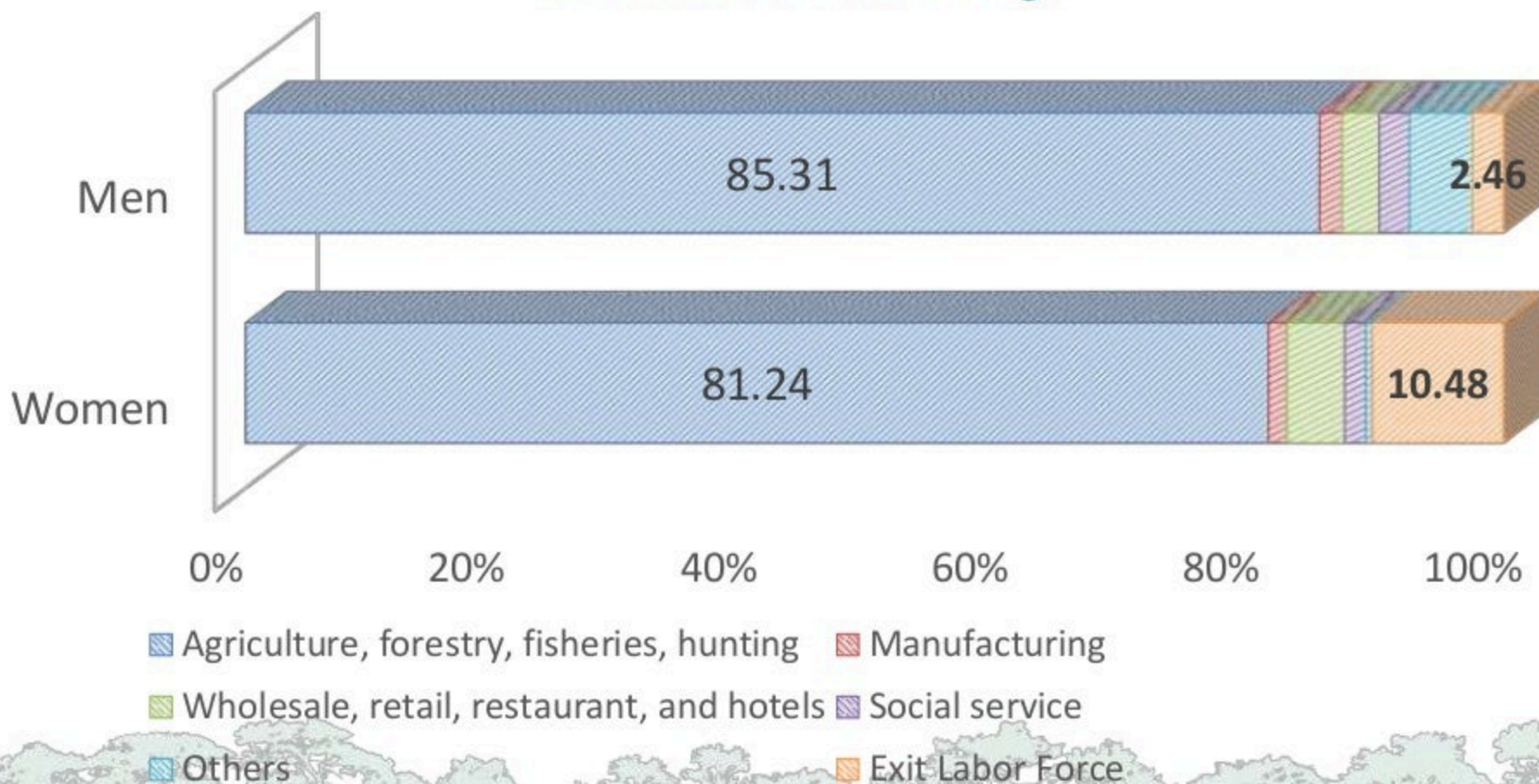
2014



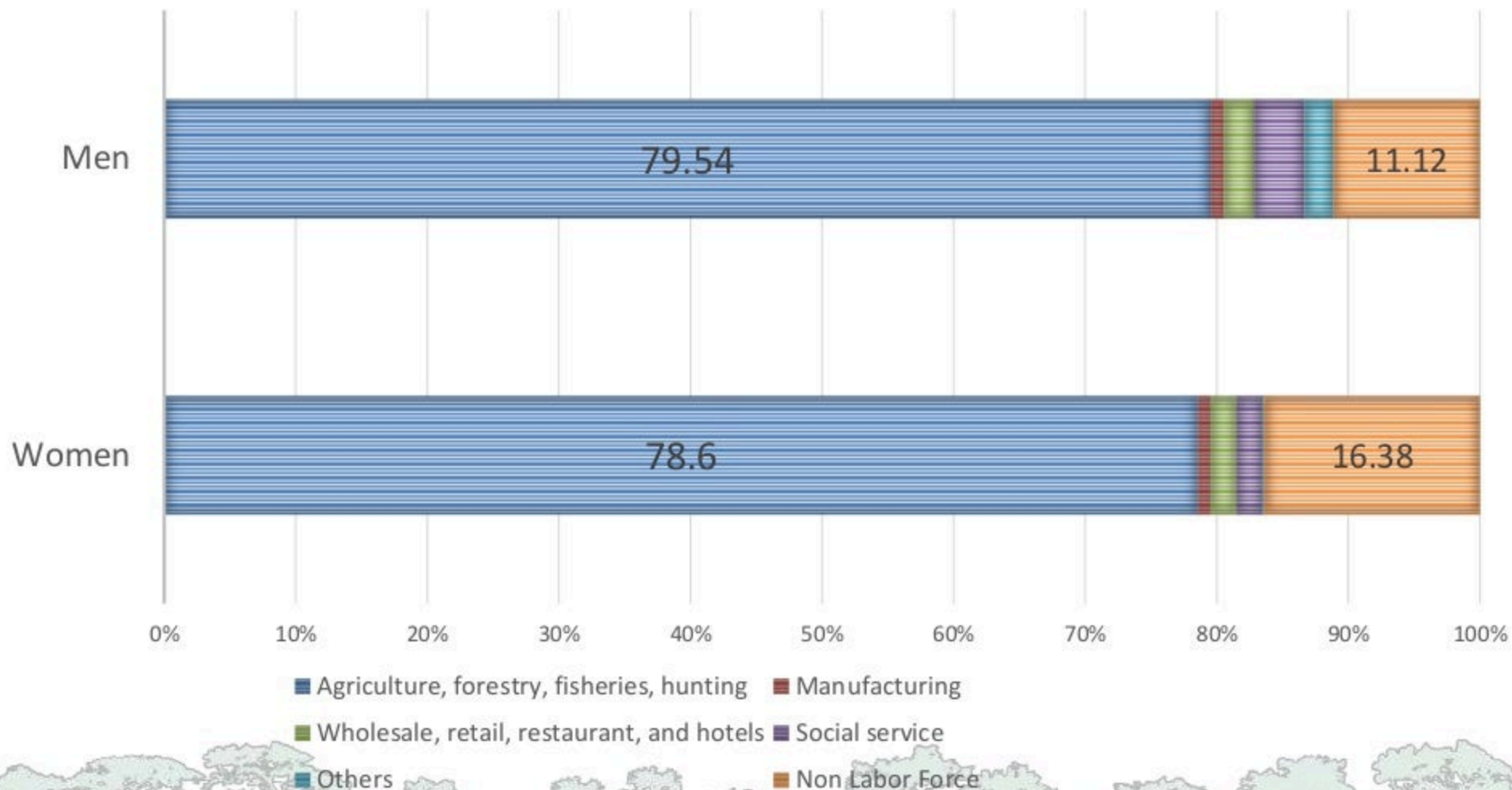
# Are women remaining in agriculture?

2011 vs 2014

Female exit from agriculture is mainly driven by exiting labor force –  
*school or child bearing?*



# From which sectors are the agriculture labor? 2011 vs 2014



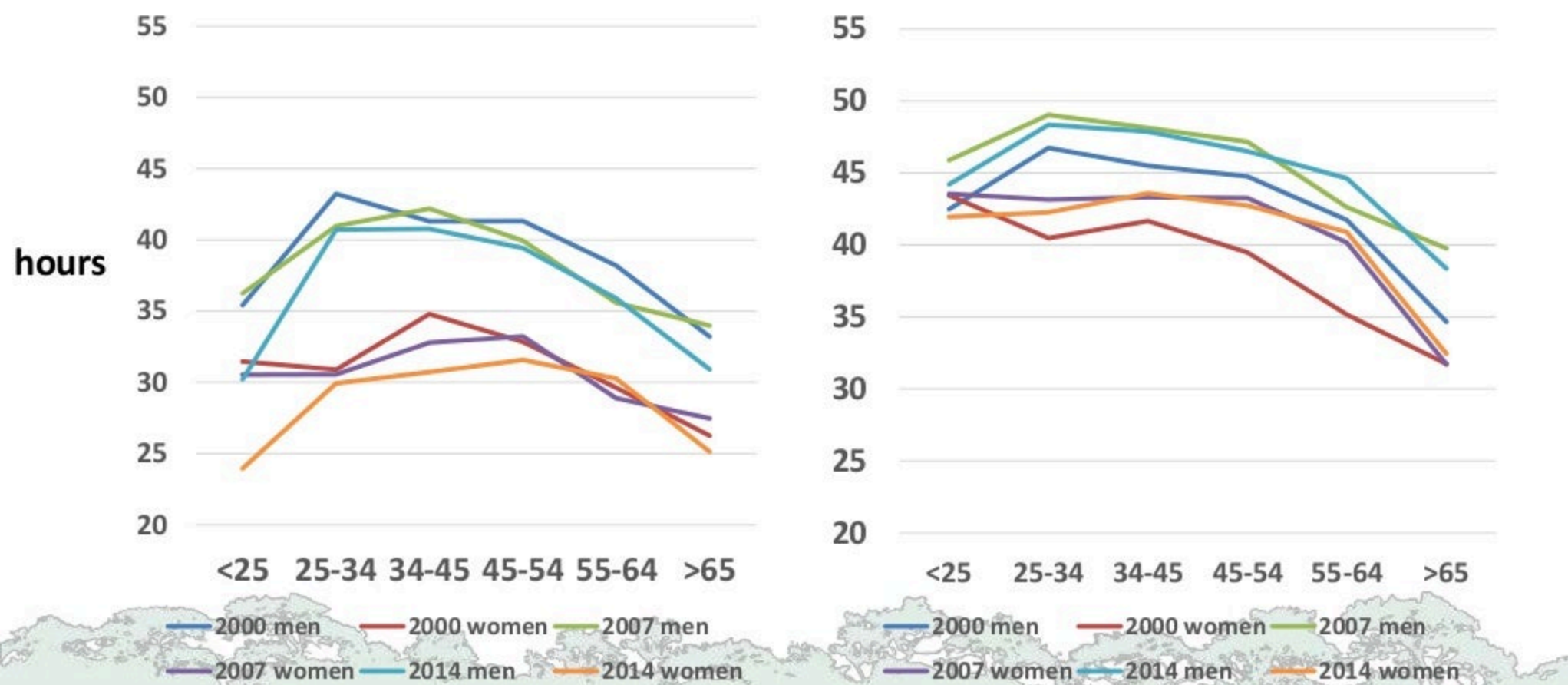
### 3. Change in working hours in normal weeks

Women work fewer hours than men in agriculture  
Women's working hours are reduced over time, but they are age dependent



Agriculture

Non-Agriculture



## Next steps:

- Add household-level and community-level explanatory variables to interrogate gender dynamics behind entering/exiting agriculture
  - Labor composition in households - including migration
  - Socio-economic condition
  - Spatial analysis
  - Farm/production characteristics



We would like to acknowledge all CGIAR Research Programs and Centers for supporting the participation of their gender scientists to the *Seeds of Change* conference.



RESEARCH PROGRAM ON Policies, Institutions, and Markets



Collaborative Platform for Gender Research



Photo: Neil Palmer/IWMI



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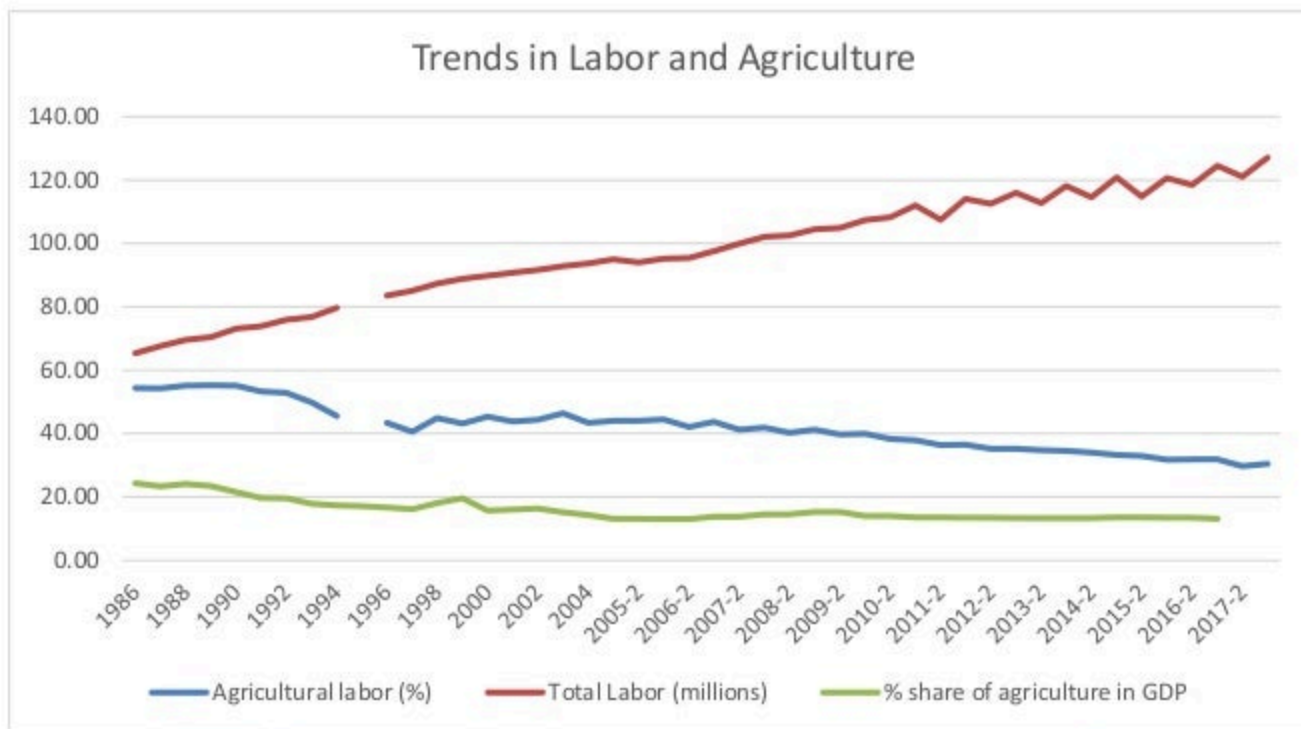


# Appendix





# Overview



Total Agriculture Labor:

1988: 38 286 012

1998: 39 144 556

2008: 42 689 635

2018: 38 700 530

Source: Sakernas

Source: BPS

## Over the last 10 years: No. sign of Feminization of Agriculture

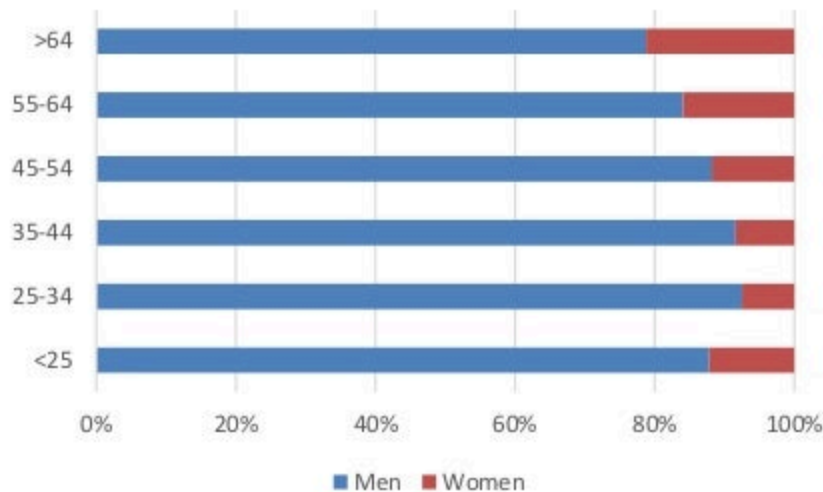
	2008-1	2018-1
% agriculture share of labor	41.83	30.46
% female share in agriculture labor	38.79	37.49
% agriculture share in female labor	42.80	28.39
% rural share in total agriculture labor	89.51	81.46

Source: Sakernas data from BPS Publication

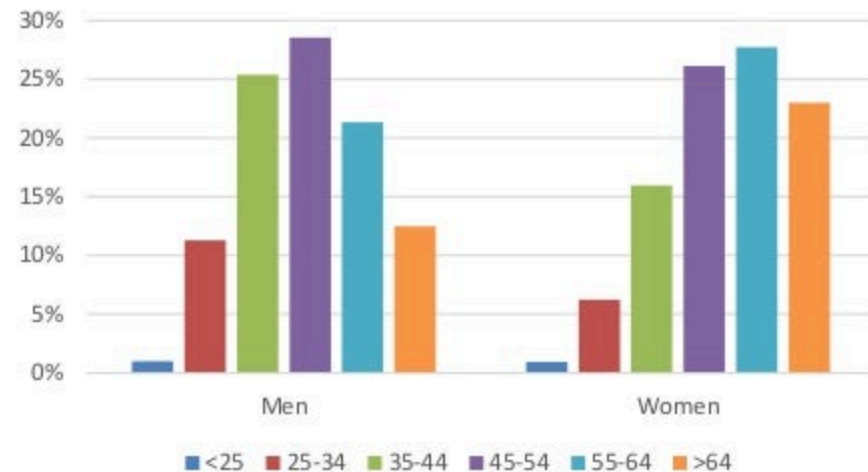
Absolute numbers of total labor in agriculture remain stable over the last 30 years.

# Aging in Agriculture-Main Farmer

Gender composition, within age



Age composition, within gender



## Working farmers under the age of 35

1993 25.8 %

2003 20%

2013 12.9% 2018: 11.63%

Source: SUTAS, 2018

# Entry Exit individual

- Question was asked in 2014 – current labor participation and also every year before since 2007
- the pool is those who at least reported once time time work during the period of 2007-2014: 33,416
- → 46.45% female

age	Freq.	Percent	Cum.
<25	1,360	8.76	8.76
25-34	5,665	36.50	45.26
35-44	4,114	26.50	71.76
45-54	2,424	15.62	87.38
55-66	1,293	8.33	95.71
>64	666	4.29	100.00
Total	15,522	100.00	

Marital status	Freq.	Percent	Cum.
1:Unmarried	893	5.75	5.75
2:Married	12,779	82.33	88.08
3:Separated/divorced/widowed	1,823	11.74	99.83
6:Cohabitate	3	0.02	99.85
8:Don't know	24	0.15	100.00
Total	15,522	100.00	

HHM highest level of education	Freq.	Percent	Cum.
1:Unschoolled	907	5.84	5.84
2:Grade school	4,971	32.03	37.87
3:General jr. high	2,839	18.29	56.16
4:General sr. high (SLA)	4,153	26.76	82.91
5:higher degree	2,445	15.75	98.67
95:Other	29	0.19	98.85
98:Don't know	178	1.15	100.00
Total	15,522	100.00	

Relation to HH Head	Freq.	Percent	Cum.
1:Head of the household	1,684	10.85	10.85
2:Husband/wife	7,714	49.70	60.55
3:Children (biological)	4,065	26.19	86.73
Others	2,059	13.27	100.00
Total	15,522	100.00	

-> sc05 = 1:Urban

Which category best describes the work that you do?	Relation to HH Head				Total
	1:Head of	2:Husband	3:Childre	Others	
1:Self-employed	19.74	9.09	6.93	22.32	12.44
2:Self employed with	26.32	18.48	12.87	23.21	19.39
3:Self-employed with	2.63	0.30	0.00	0.00	0.48
4:Government worker	0.00	2.73	0.99	0.00	1.62
5:Private worker	17.11	13.64	18.81	12.50	14.70
6:Unpaid family worke	3.95	34.85	36.63	25.89	29.73
7:Casual worker in ag	26.32	19.70	21.78	14.29	19.87
8:Casual worker not i	3.95	0.91	1.98	1.79	1.62
9:Missing	0.00	0.30	0.00	0.00	0.16
Total	100.00	100.00	100.00	100.00	100.00

-> sc05 = 2:Rural

Which category best describes the work that you do?	Relation to HH Head				Total
	1:Head of	2:Husband	3:Childre	Others	
1:Self-employed	26.30	4.96	5.97	10.47	8.44
2:Self employed with	38.64	16.45	13.94	24.42	19.65
3:Self-employed with	0.65	0.43	0.22	0.39	0.41
4:Government worker	0.65	0.28	0.44	0.00	0.33
5:Private worker	6.17	6.10	7.08	6.59	6.34
6:Unpaid family worke	6.49	60.64	59.29	45.74	51.94
7:Casual worker in ag	20.78	10.71	11.73	12.02	12.31
8:Casual worker not i	0.32	0.43	1.33	0.39	0.58
Total	100.00	100.00	100.00	100.00	100.00

## Male-Female Entry Comparison

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. bys ar07: tab tk19a sc05 if tk31a2011==., co nof
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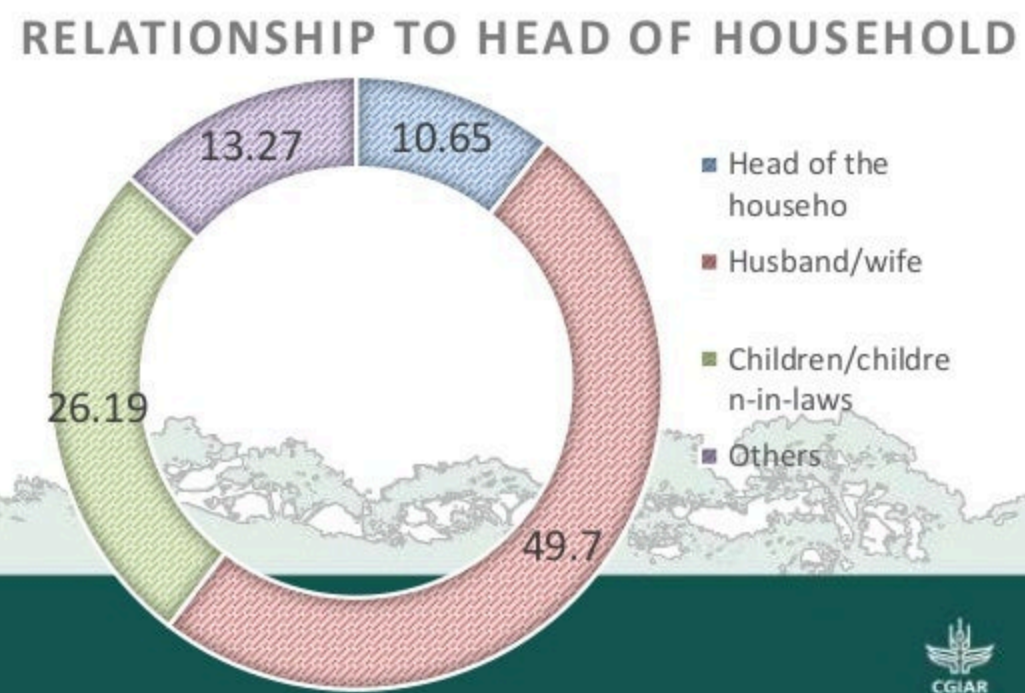
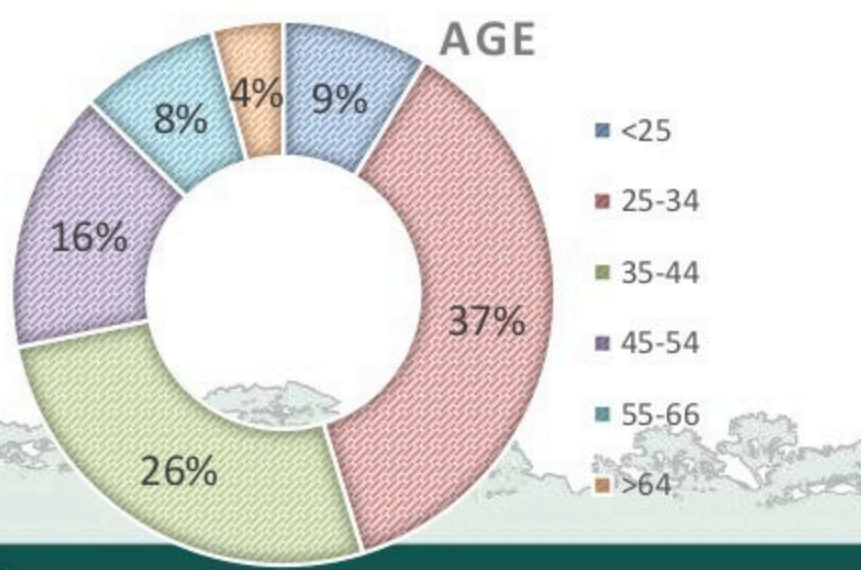
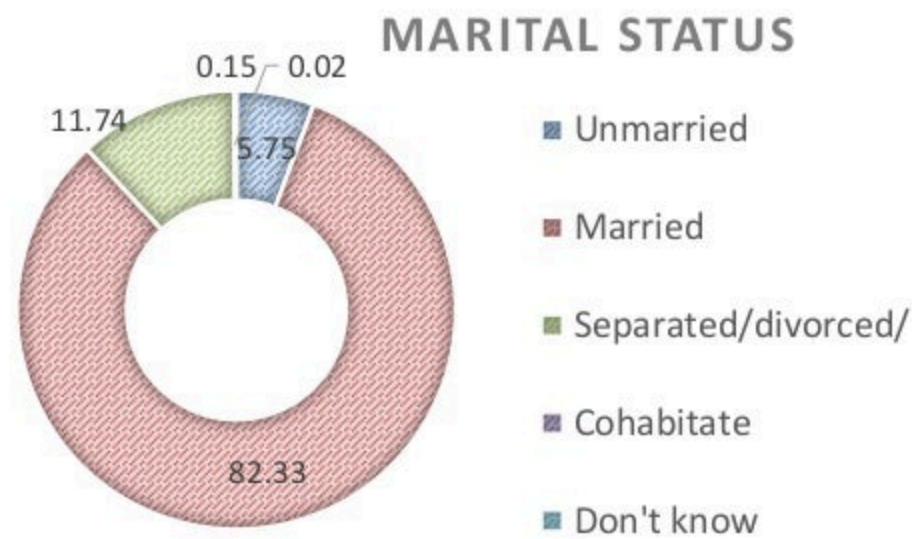
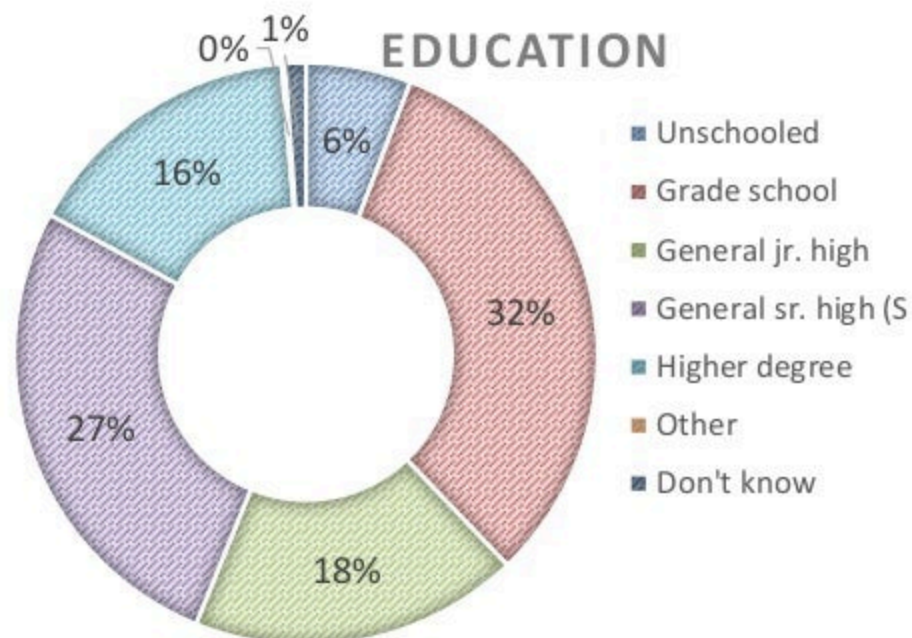
```
-> ar07 = 1
```

CODE FOR SECTORS	Rural		Total
	Urban	Rural	
Agriculture, forestry	12.27	36.22	21.03
manufacturing	16.32	13.50	15.29
wholesale, retail, re	18.85	12.95	16.69
social service	15.69	14.38	15.21
others	36.88	22.94	31.78
Total	100.00	100.00	100.00

```
-> ar07 = 3
```

CODE FOR SECTORS	Rural		Total
	Urban	Rural	
Agriculture, forestry	8.16	27.00	15.31
manufacturing	14.88	15.20	15.00
wholesale, retail, re	43.85	32.01	39.36
social service	24.47	19.56	22.61
others	8.65	6.22	7.73
Total	100.00	100.00	100.00

# Profile of female labor force in 2014



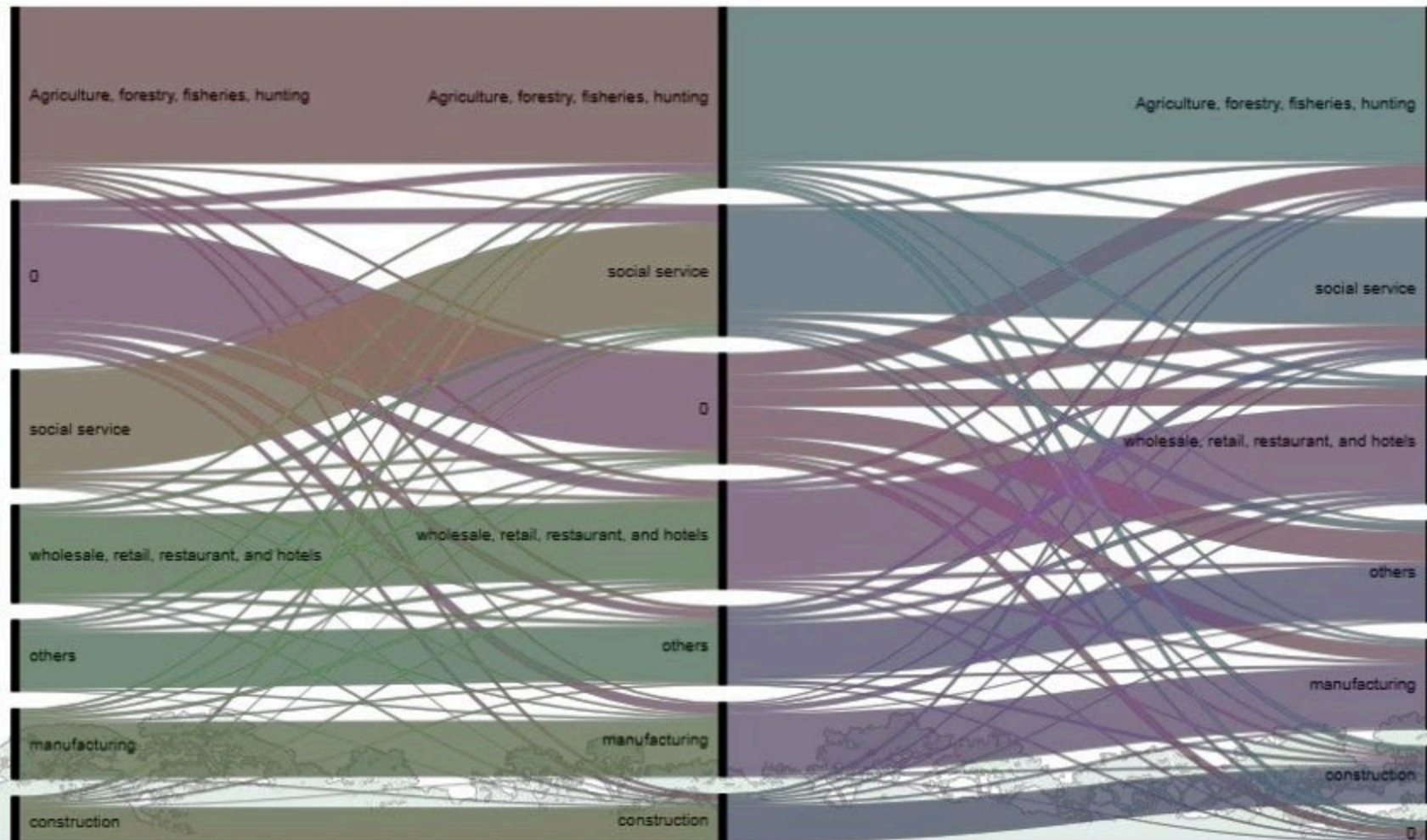
# Entry and Exit –Male

restropective data recorded in 2014  
Individual 15 years older in 2007

2008

2011

2014

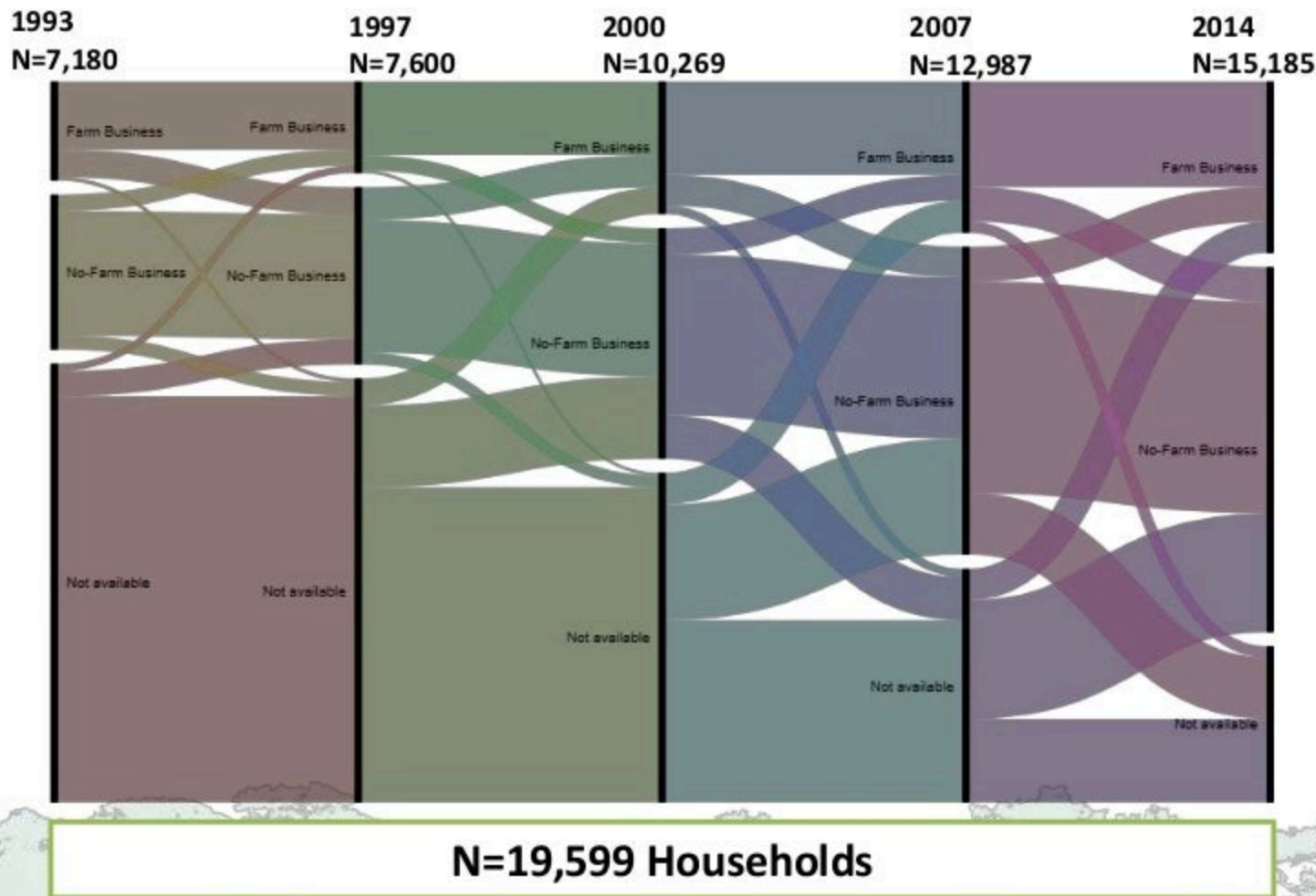




# Female labor in agriculture (2014)

Which category best describes the work that you do?	Relation to HH Head				Total
	1:Head of	2:Husband	3:Childre	Others	
1:Self-employed	25.00	5.75	6.15	14.05	9.26
2:Self employed with	36.20	16.84	13.74	24.05	19.59
3:Self-employed with	1.04	0.40	0.18	0.27	0.43
4:Government worker	0.52	0.75	0.54	0.00	0.59
5:Private worker	8.33	7.53	9.22	8.38	8.04
6:Unpaid family worke	5.99	55.75	55.15	39.73	47.42
7:Casual worker in ag	21.88	12.41	13.56	12.70	13.85
8:Casual worker not i	1.04	0.52	1.45	0.81	0.79
9:Missing	0.00	0.06	0.00	0.00	0.03
Total	100.00	100.00	100.00	100.00	100.00

# 1. Dynamic of Households level participation in Farm Business



- Family exit incidences are always higher than entry – except the period between 1997-2000  
 → The Asian financial crisis
- Split households (mostly younger generation) enter more in non-farm than in farm

# Research Context

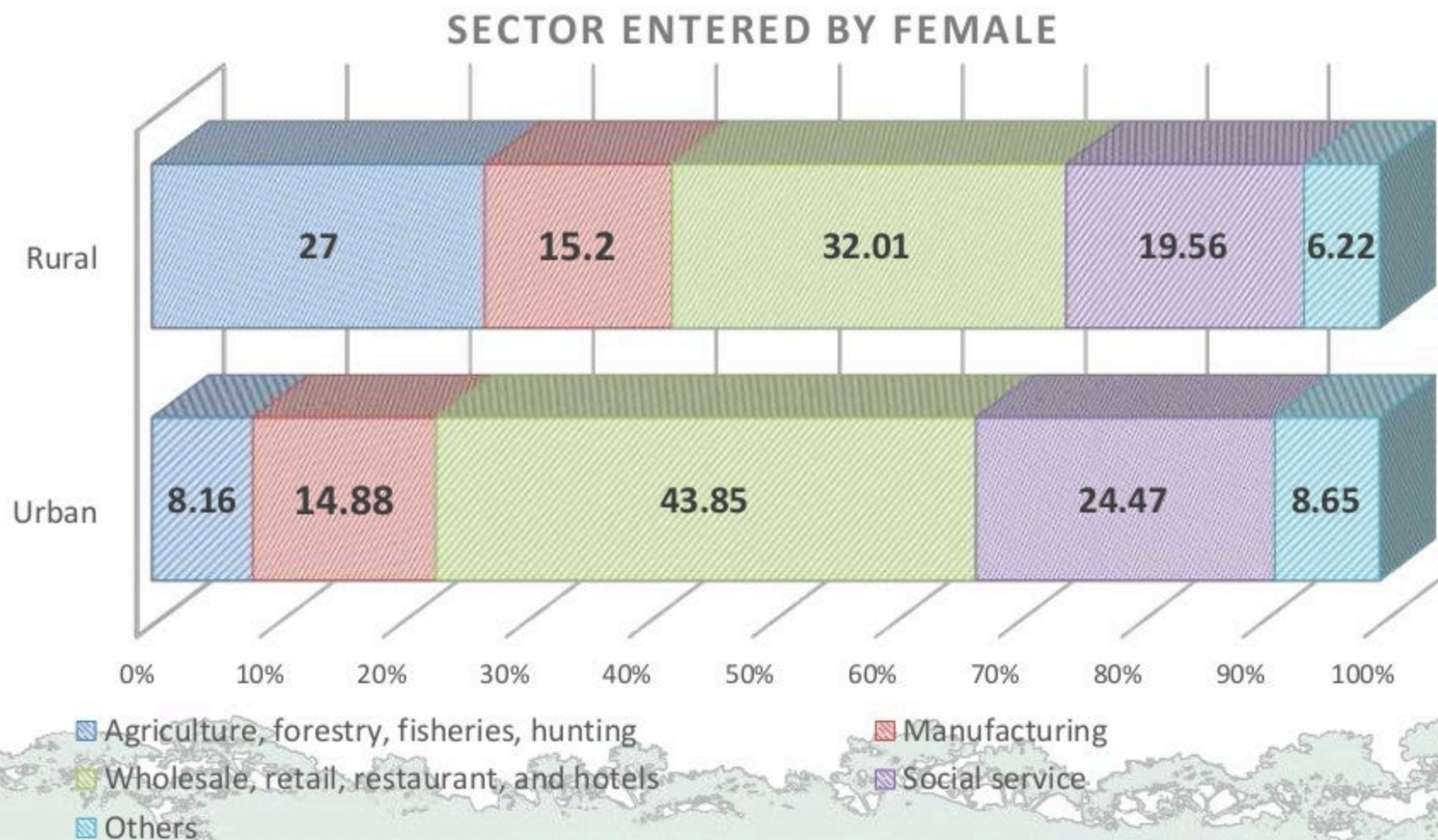
- Indonesia aim to achieve food self-sufficiency and to be main producer of sustainable biofuel globally in 2045
  - **Population:** 255.8 million (2015); 361.8 million (expected- 2045)
  - **Share of agriculture in employment:** 1990: 55%, 2017: 31%
  - **Share of agriculture in GDP:** 1990: 21%, 2017: 13%
  - **Total labor in agriculture:** 1988: 38.2 million, 2018: 38.7 million
  - **Proportion of working farmers under age of 35:** 1993: 25.8%; 2018: 11.63%
- Over the last ten years: national statistics show no sign of feminization of agriculture
  - **Female share in agriculture labor:** 2008: 38.79%, 2018: 37.49%
  - **Agriculture share in female labor:** 2008: 42.80%, 2018: 28.39%
- **What are the explanations?**

Do women exit agriculture at the same rate with men? Why? If they are exiting, to which sector? Who exit? Are there special characteristics of those who move out?
- **What are the implications?**



Even in rural area, agriculture is not the highest sector that absorb female labor

→ opportunities outside agriculture are available



## Male Female Comparison Staying or exit

CODE FOR SECTORS	Female			Male		
	Urban	Rural	Total	Urban	Rural	Total
Agriculture, forestry	75.09	82.64	81.24	77.58	88.06	85.31
manufacturing	2.75	1.17	1.46	3.04	1.36	1.80
wholesale, retail, re	6.59	4.16	4.61	4.34	2.47	2.96
social service	3.66	1.25	1.70	3.21	2.13	2.41
others	0.92	0.42	0.51	8.60	3.80	5.05
.	10.99	10.37	10.48	3.21	2.19	2.46
Total	100.00	100.00	100.00	100.00	100.00	100.00

Proportion of male who are staying is higher than those for female (significant for Total and Rural, but not in Urban)