Women's Employment in Agrifood Systems: A focus in the UNECE region
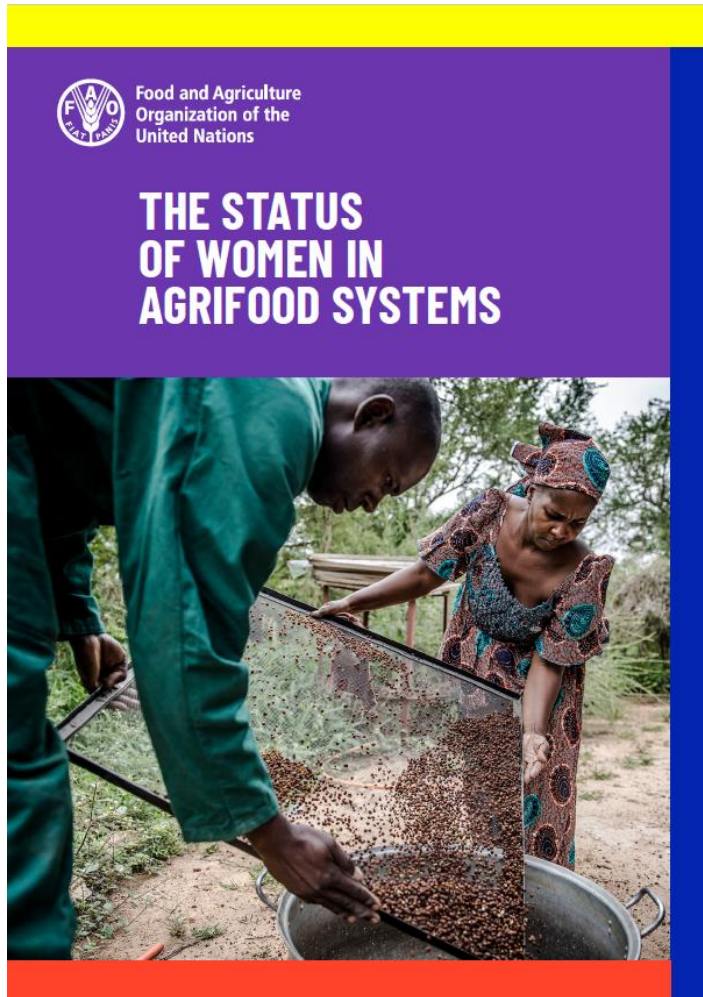
Prepared by: Valentina Costa, Natalia Piedrahita, Erdgin Mane, Benjamin Davis, Vanya Slavchevska and Yonca Gurbuzer (FAO)

Presenter: Erdgin Mane, PhD

Policy Officer (Social Statistics & Gender)

Inclusive Rural Transformation and Gender Equality Division, FAO

FAO. 2023. The status of women in agrifood systems. Rome. DOI: https://doi.org/10.4060/cc5343en

Outline

- Introduction (Background and motivation)

- Definitions, data and methodology
  - Operational definition of employment in agrifood systems
  - ILOSTAT data
  - Methodology to fill data gaps

- Results
  - The trends of AFS employment in total employment between 2005 and 2019, by sex
  - The effects of COVID-19 on employment in AFS, 2019-2020

- Conclusions

Background and motivation

- In 2021, the United Nations Food Systems Summit (UNFSS) recognized the centrality of food systems to our lives and their relevance to achieving the 2030 Agenda for Sustainable Development

- Davis et al. (2023) find that 1.23 billion people were employed in AFS, in 2019, and half of the global population lives in households linked to AFS-based livelihoods. As national economies develop, the share of people employed in AFS decreases, driven by a decline in employment in agriculture.

- Knowing where women and men work in agrifood systems, under what conditions and how these employment conditions may differ by gender is critical for designing and targeting policy and programming interventions to enhance the welfare of the workers within agrifood systems and increase gender equality.

© FAO/Abdul Mustafazade: A member of a women's group in Azerbaijan learns how to produce honey.

Operational definition of employment in agrifood systems

Categories	ISIC Divisions	ISIC Rev.4 2-digit codes	Share of women	
			Global	**UNECE**
Agriculture, forestry and fishing	Agriculture	1	38%	39%
	Forestry and logging	2		
	Fishing	3		
Food processing and service	Manufacture of food products	10	51%	48%
	Manufacture of beverages	11		
	Food and beverage service activities	56		
	Undifferentiated goods- and services-producing activities of private households for own use	98		
Manufacture of non-food agricultural products	Manufacture of tobacco products	12	38%	33%
	Manufacture of textiles	13		
	Manufacture of leather and related products	15		
	Manufacture of wood and of products from wood and cork, except furniture	16		
	Manufacture of paper and paper products	17		
Trade*	Wholesale trade, except of motor vehicles and motorcycles	46	50%	50%
	Retail trade, except of motor vehicles and motorcycles	47		
Transportation*	Land transport and transport via pipelines	49	15%	23%
	Water transport	50		
	Air transport	51		
	Warehousing and support activities for transportation	52		
	Postal and courier activities	53		

NOTE: *The agrifood-systems shares in total trade and transport are estimated using a methodology described in Davis et al. (2023)

The data

- ILOSTAT database provides country-level harmonized indicators of employment over time, disaggregated by economic activity and sex for the economically active population, aged 15-64 years. (Both ISIC Rev. 4 and ISIC Rev. 3.1 classifications for economic activities are used).

- 42 countries in the UNECE region include at least one data point between 2000 and 2020. To address data gaps, we use the ILO modelled estimates, which use a series of statistical and econometric methods to impute the indicators.

- However, the modelled estimates are only disaggregated by broad sectors (e.g., agriculture and total employment), which is not sufficient to measure employment in AFS. Therefore, we use the ILO modelled estimates to measure employment in agriculture and total employment, but we carry out our own econometric modelling to impute the missing non-agricultural AFS employment disaggregated by sex.

The Methodology

- We model the share of men out of total employment in non-agricultural AFS:

$$y_{itm} = \frac{non - ag\ AFS_{itm}}{non - ag\ AFS_{itm} + non - ag\ AFS_{itf}}$$

where: non-$ag\ AFS_{itm}$ = number of men employed in non-agricultural AFS in country i in year t.

non-$ag\ AFS_{itf}$ = number of women employed in non-agricultural AFS in country i in year t.

$$E[y_{itm}|share\ ag\ employ_{itm}, share\ ag\ employ_{it}, urban\ pop\ share_{it}, \ln(gdp\ per\ capita_{it}), pop_{it},$$

$$share\ ag\ GDP_{it}, YEAR_t, \delta_t]$$

where: $share\ ag\ employ_{itm}$ = AGR employment$_{itm}$ / Total employment$_{itm}$

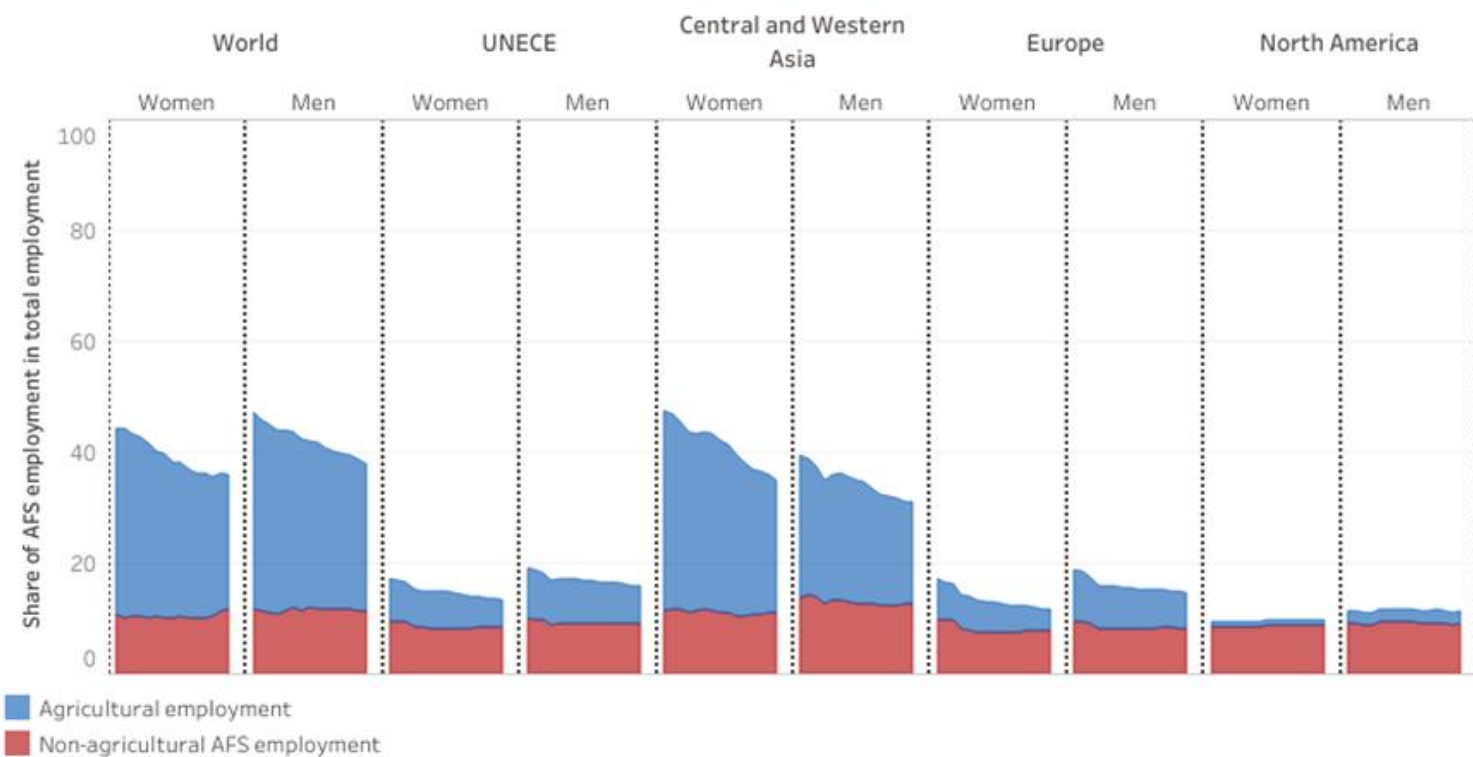$share\ ag\ employ_{it}$ = AGR employment$_{it}$ / Total employment$_{it}$

$urban\ pop\ share_{it}$ = the share of the population living in urban areas in country i in year t

$share\ ag\ gdp_{it}$ = the share of agriculture value added in total GDP in country i in year t.

δi refers to regional fixed effects and YEAR$_t$, is a vector of years.

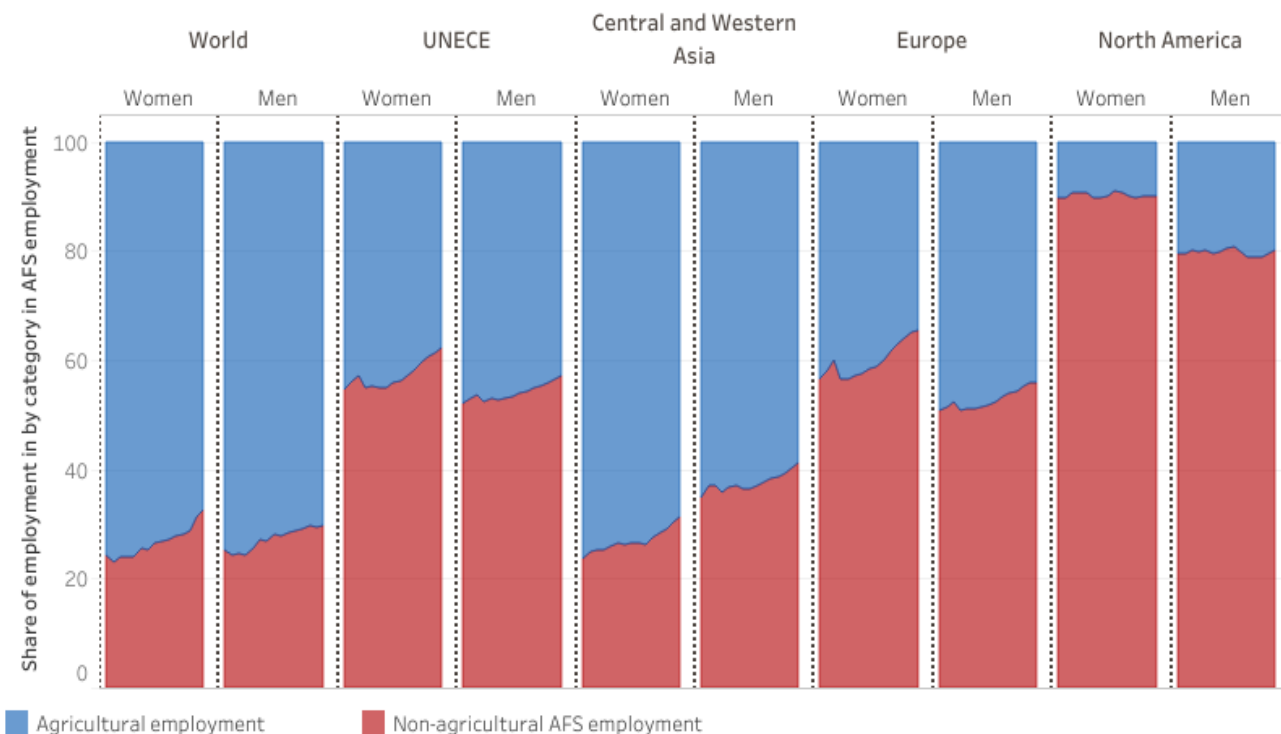## The trends of AFS employment in total employment between 2005 and 2019, by sex

- In 2019, 36.5 million women and 50 million men were employed in AFS within the UNECE region, corresponding to 13% of working women and 16% of working men

- Employment in agriculture declines with income, while in non-agricultural AFS remains constant.

- In Central and Western Asia, the share of women working in AFS declined by 13 percentage points from 2005 to 2019, entirely driven by agriculture.

*Note: **Central and Western Asia include**: Armenia, Azerbaijan, Cyprus, Georgia, Israel, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Türkiye, Uzbekistan. **North America includes**: Canada and the United States of America. **Europe includes:** Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Republic of Moldova, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine and United Kingdom of Great Britain and Northern Ireland.*

Share of employment in agriculture and non-agricultural AFS out of total AFS employment from 2005 to 2019, by sex
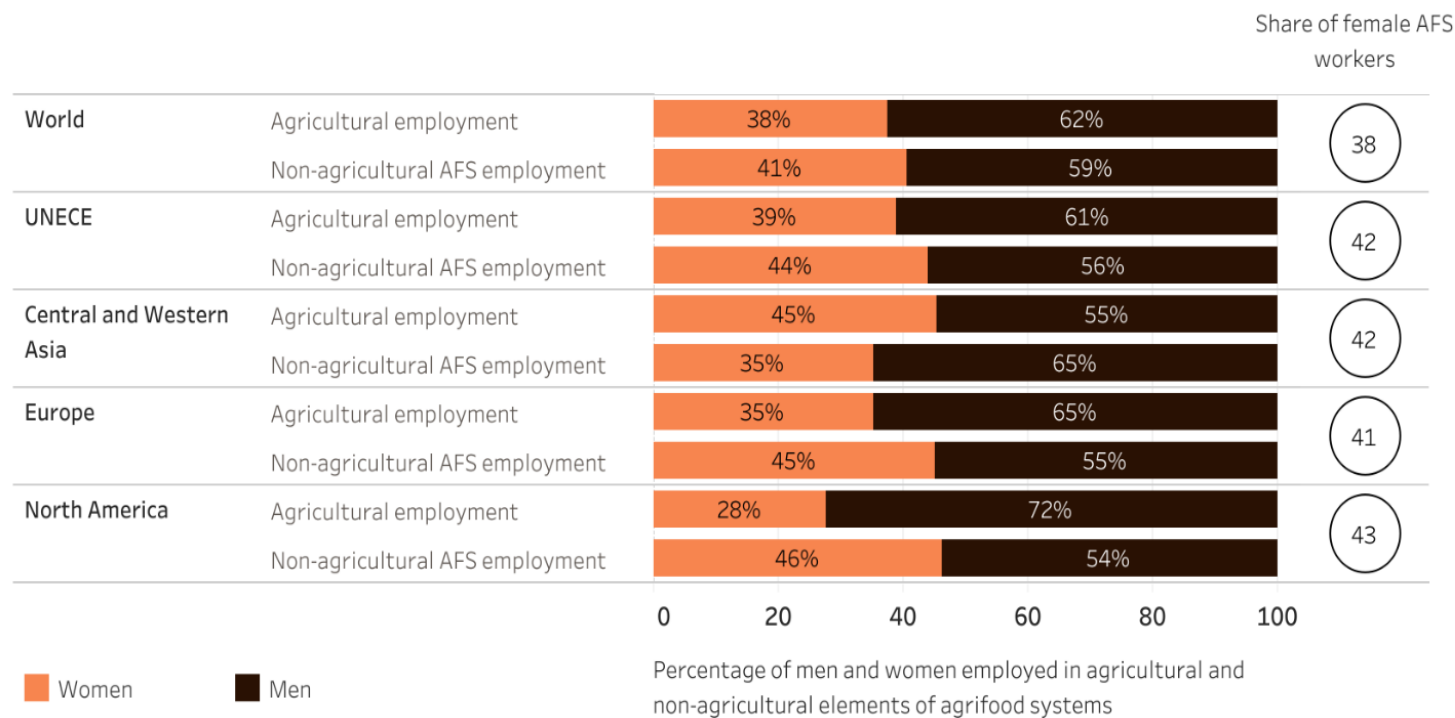

- In 2019, 62% of women and 57% of men employed in AFS within the UNECE region were working in non-agricultural sectors.

- In Europe and North America, most of AFS employment is in non-agricultural agrifood systems, while il Central and Western Asia is in agriculture

- In Europe and North America, female employment is more concentrated in non-agricultural sectors, while the reverse holds in Central & Western Asia

*Note: **Central and Western Asia include**:* Armenia, Azerbaijan, Cyprus, Georgia, Israel, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Türkiye, Uzbekistan. ***North America*** *includes:* Canada and the United States of America. ***Europe includes:*** Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Republic of Moldova, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine and United Kingdom of Great Britain and Northern Ireland.

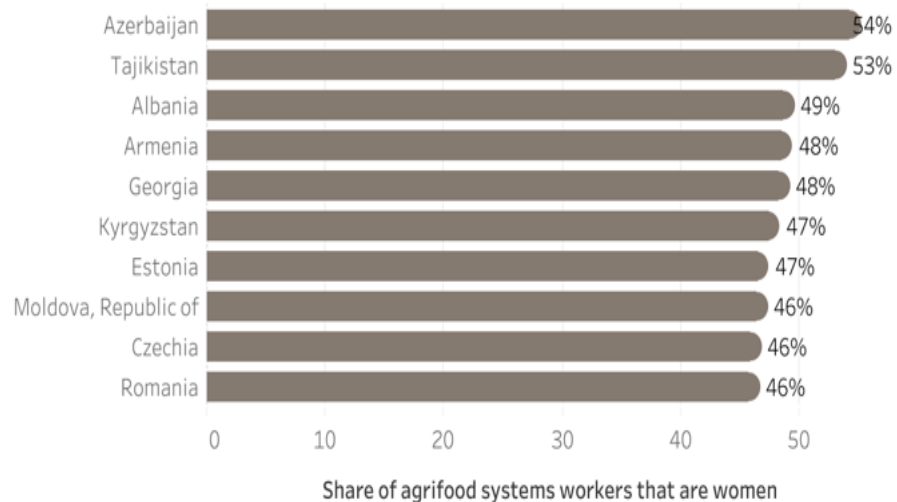# The share of women and men in total AFS employment, by sub-component of AFS in 2019

- Women make up 42% of AFS workers within the UNECE region, but with differences across regions

- Women represent 44% of all non-agricultural AFS workers, ranging from 35% in Central and Western Asia to 46% in North America.

- Only 28% of agricultural workers in North America are women, while in Central and Western Asia, they are 45%.

Note: Central and Western Asia include: Armenia, Azerbaijan, Cyprus, Georgia, Israel, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Türkiye, Uzbekistan. *North America includes:* Canada and the United States of America. *Europe includes:* Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Republic of Moldova, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine and United Kingdom of Great Britain and Northern Ireland.
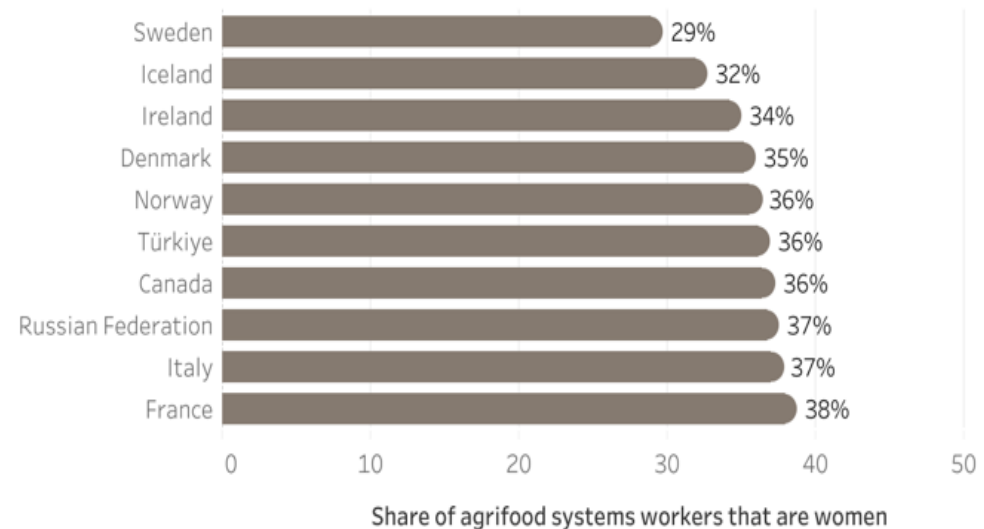
Top and bottom 10 countries with the highest and lowest shares of women employed in AFS

Panel A: Top 10   Panel B: Bottom 10
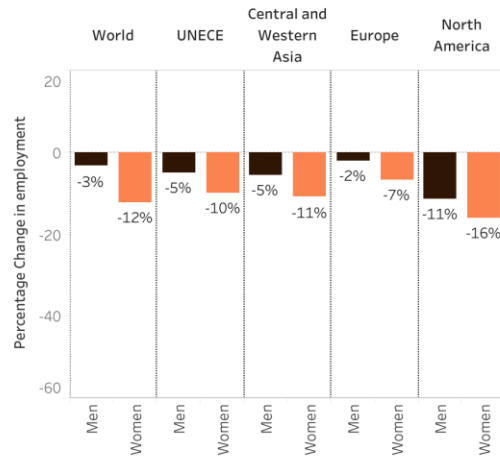

- Women represent 54% and 53% of AFS employment in Azerbaijan and Tajikistan.

- Women represent 29% of AFS workers in Sweden, and 32% in Iceland.

- Portugal and the Republic of Moldova saw the largest declines in the share of female AFS workers from 2005 to 2019, respectively 7.5 and 6 percentage points. Meanwhile, Kyrgyzstan and Tajikistan had the largest increase, with 4 ppts.
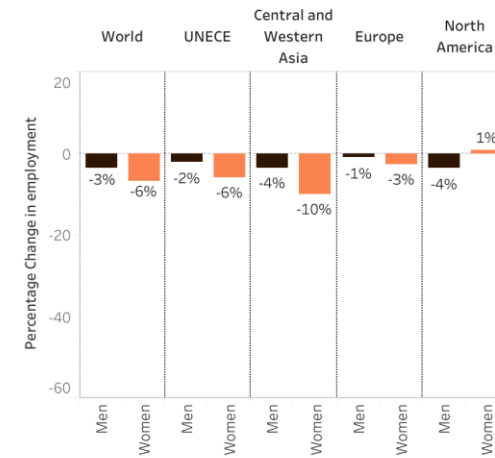
The effects of COVID-19 on employment in AFS, changes 2019-2020
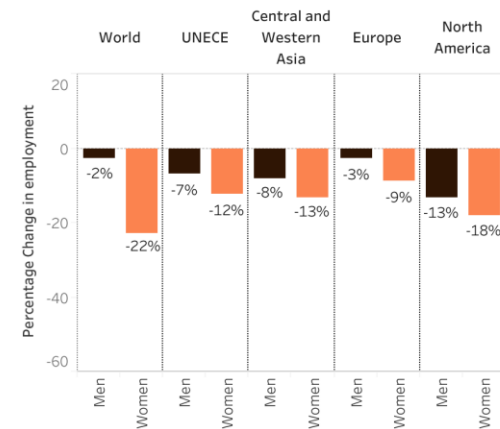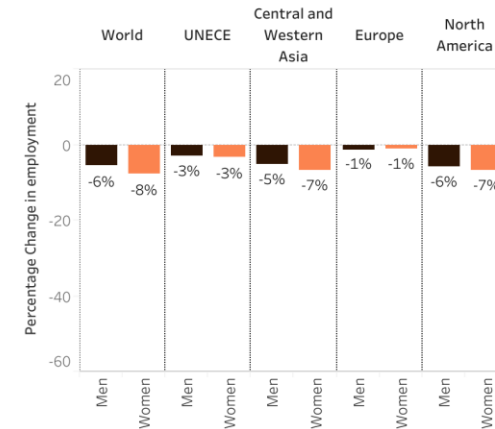

Panel A: Agrifood systems employment

Panel B: Agricultural employment

Panel C: Non-agricultural agrifood systems employment

Panel D: Total employment

- Women's employment in AFS declined by 10% from 2019 to 2020, compared to 5% for men.

- Across all three UNECE subregions, women were more likely to experience job losses in AFS, mainly driven by declines in the non-agricultural sector of AFS.

- Women's employment in agriculture experienced the largest decline in Central and Western Asia, 10%, as compared to 4% in men's employment in agriculture.

- We find that 36.5 million women and 50 million men were employed in AFS among UNECE countries, in 2019, which corresponds to 13% of working women and 16% of working men.

- Women make up 42% of AFS workers and 39% of agricultural workers in the UNECE region.

- Women make up a larger share of AFS workers at over 50% in Tajikistan and Azerbaijan, compared to 29% in Sweden.

- Gender inequalities within employment in AFS were exacerbated during the outbreak of Covid-19. In 2020, women's employment in AFS declined by 10%, compared to a decline of 5% in men's employment in the same sector within the UNECE region.

Future research:

Explore the relationship between the gender inequalities in AFS employment and welfare outcomes, such as: poverty, education, empowerment and health care.

Investigate on the wage gaps between men and women employed in agrifood systems and how various factors, such as education, child dependency, age, etc., might impact the gender gap.

Finally, examine the types of policy interventions that can help close the gender inequalities in AFS employment under different country contexts.

Thank you!

Erdgin.Mane@fao.org