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Life in Kyrgyzstan
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#LiK2021

Food Security, Gender and the Impact of Covid-19
Applying the FIES methodology in the rural areas of Kyrgyzstan, Tajikistan and Uzbekistan

Erdgin Mane
Policy Officer (Social Statistics and Gender) – FAO

Firas Yassin
Statistician - FAO

The Outline

- Measuring food insecurity from people´s experiences
- The FIES Survey module
- Benefits of using the FIES to measure food insecurity
- Methodology: The Rasch Model
- Statistical validation
- SDG Indicators 2.1.1 and 2.1.2 in SOFI 2021
- The Gender Gap on Food Security
- The Impact of Covid-19
- Conclusions and policy implications

Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)
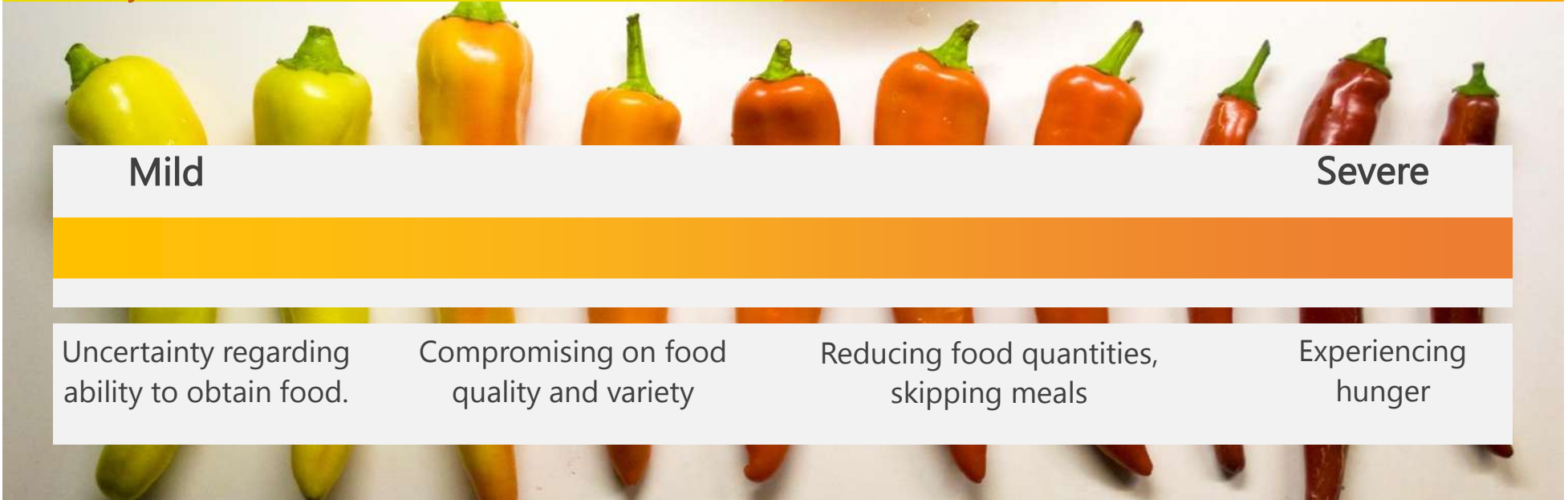
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SDG indicator 2.1.2

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Measuring food insecurity from the perspective of people´s experiences

The Cornell researchers identified a sequence of experiences that characterized hunger and food insecurity as described by interviewed women – a sequence that reveals increasing severity of food insecurity.

Years later, a review of studies in many countries around the world concluded that these dimensions of the experience of hunger appear to be common across cultures.

Mild			Severe
Uncertainty regarding ability to obtain food.	Compromising on food quality and variety	Reducing food quantities, skipping meals	Experiencing hunger

The consequences of food insecurity become more severe as the situation worsens, negatively affecting physical, mental and social well-being.

Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)

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The FIES survey module

The FIES survey **individual/household** module is composed of **eight questions** with simple **dichotomous responses** ("yes" or "no")

Respondents are asked whether any time during a certain **reference period (12 months/30 days)** they have had **any of the experiences** described in the questions due to **lack of money or other resources** to obtain food.

These experiences range from **worrying** about their ability to get enough food to whether they have been forced to **compromise** the **quality or quantity** of the food they ate.

Note that each question is conditioned on the **lack of money or resources** to get food..

and **NOT** due to other reasons to reducing food consumption or alter diet, such as **religion or health reasons.**

The eight FIES questions – Individual frame

"During the last **12 months/30 days**(**4weeks**), was there a time when, <u>because of lack of money or other resources</u>":

1. You were **worried** you could not get enough food to eat?
    1.b Was it specifically linked to **COVID-19**?
2. You were unable to eat **healthy** and **nutritious** food?
    2.b Was it specifically linked to **COVID-19**?
3. You ate only a **few kinds of foods**?
    3.b …
4. You had to **skip a meal**?
    4.b …
5. You **ate less** than you thought you should?
6. Your household **ran out of food**?
7. You were **hungry** but did not eat?
8. You went **without eating** for a whole day?"

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Benefits of using the FIES to measure food insecurity

Direct
The FIES asks respondents directly about their experiences in the face of constrained access to food. In this way, the FIES "listens" to the people affected by food insecurity.

Easy
Simple and quick to administer in a survey. It takes no more than 5 minutes and does not require technical expertise.

Low cost
Can be included in almost any existing survey, at very little additional cost.

Statistically sound
FIES and similar scales have been shown to be valid in different settings, and by using the FIES methodology, food insecurity prevalence rates can be compared across countries and populations.

Distinguish between severity levels
Able to reflect the depth of food insecurity.

Results can be disaggregated
Observe differences in food insecurity by population characteristics e.g. gender, age, occupation, etc. and among sub-populations that differ by location, ethnicity, language etc.

The Methodology: Rasch Model

$$Prob\left(x_{h,i} = 1 \middle| b_h, a_i\right) = F(b_h - a_i) = \frac{e^{b_h - a_i}}{1 + e^{b_h - a_i}}$$

- The probability that a respondent h whose **_unobservable food insecurity level_** is b_h would report having gone through the **_observed food insecurity experience_** (answer YES to question …) a with severity i (a_i) is modelled as a (**logistic**) function of the difference $(b_h - a_i)$

- The model provides the probabilistic basis for
  - **Estimating the parameters** associated with both **items** and **respondents**
  - Conducting **statistical tests** of the strength of association of the responses to the latent trait and of goodness of fit

Statistical validation

The Rasch model allows us to produce useful results for testing the quality of the data collected:

1. **Infit**: it detect **ITEMS** that did not work well in a particular population. Provides information on the discriminatory power of the single item, (**< 1.3**);

2. **Outfit**: similar to Infit, but case-sensitive with unusual response patterns, even among a few respondents, (**< 2**);

3. **Residual correlation** between items, (**< |0.4|**);

4. **Rash reliability** (the proportion of the variability in the data that explained by the model, (**> 0.7**).

All useful statistical tests are programmed in our **RM.weights** package

Prevalence of Food Insecurity at National Level
SDG Indicators 2.1.1 and 2.1.2 in SOFI 2021

	SDG 2.1.1 (Prevalence of Undernourishment)	SDG 2.1.2 (Prevalence of Moderate or Severe FI)	Prevalence of Severe FI
	Reference period 2018 -2020		
Central Asia	3.2%	15.0%	3.1%
Kyrgyzstan	7.2%	7%	1.1%
Uzbekistan	< 2.5%	19.7%	4%
Tajikistan	n.a.	n.a.	n.a.

The Data (The FAO-UCA Survey 2021)

Target population

Rural people engaged in small farming activities in Kyrgyzstan, Tajikistan, and Uzbekistan.
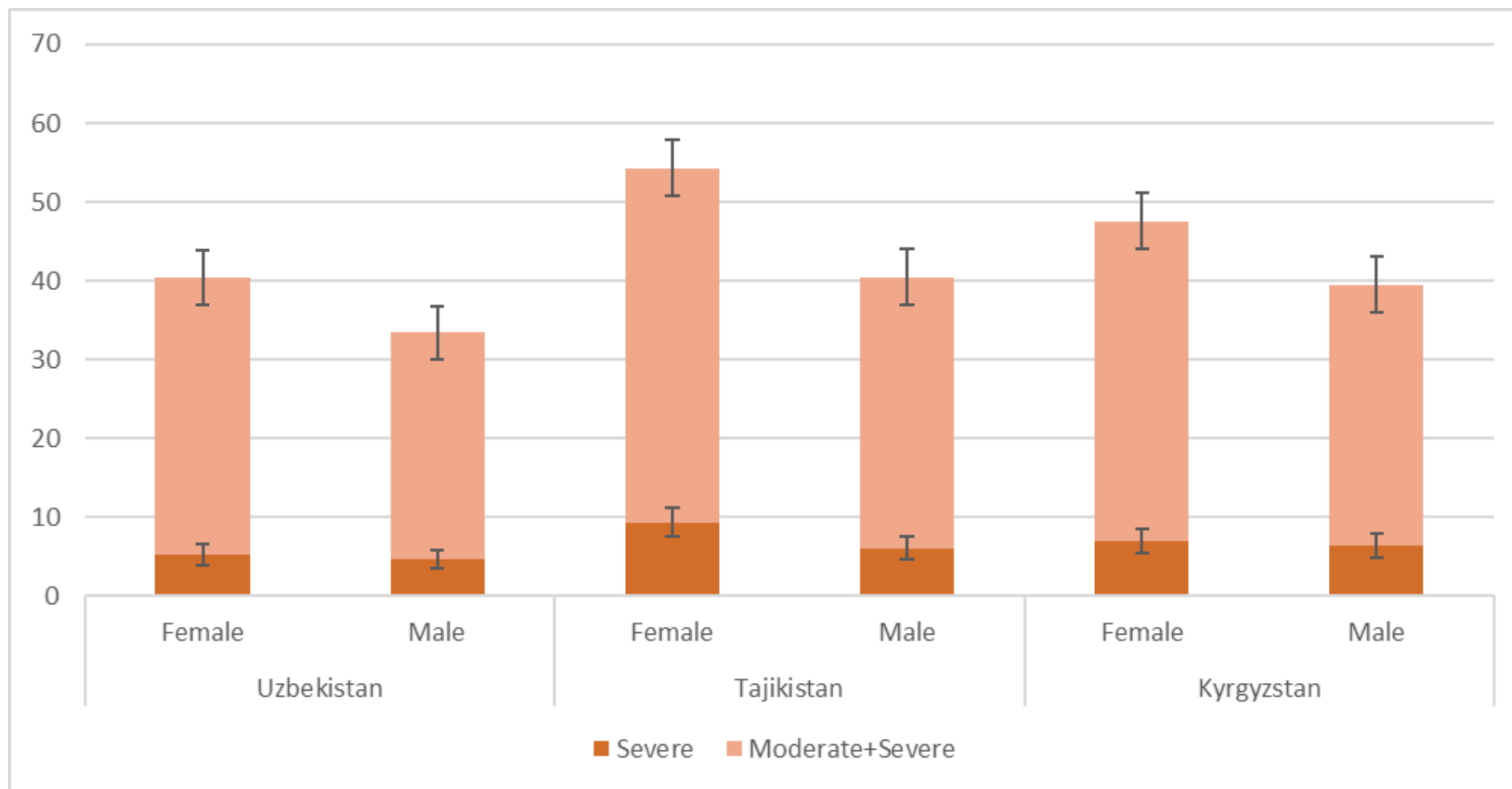
Sample size

1000 per country (500 females and 500 males). The survey was conducted through Computer Assisted Telephone Interviews (CATI) in April –May 2021.

Selection criteria

We carried out analysis of the regions based on four criteria: i) the practice of small farming; ii) dependence from the income coming from labour migration; iii) the COVID-19 impact; iv) gender-specific issues.

Caution: Our sample is not representative of the overall population in the three countries, but it is representative of women and men living in rural areas covering all regions of the studied countries. Despite the effort in sample design to collect the most representative sample possible, we should acknowledge that telephone surveys may be biased by design because they target only those in the population with access to mobile telephones.

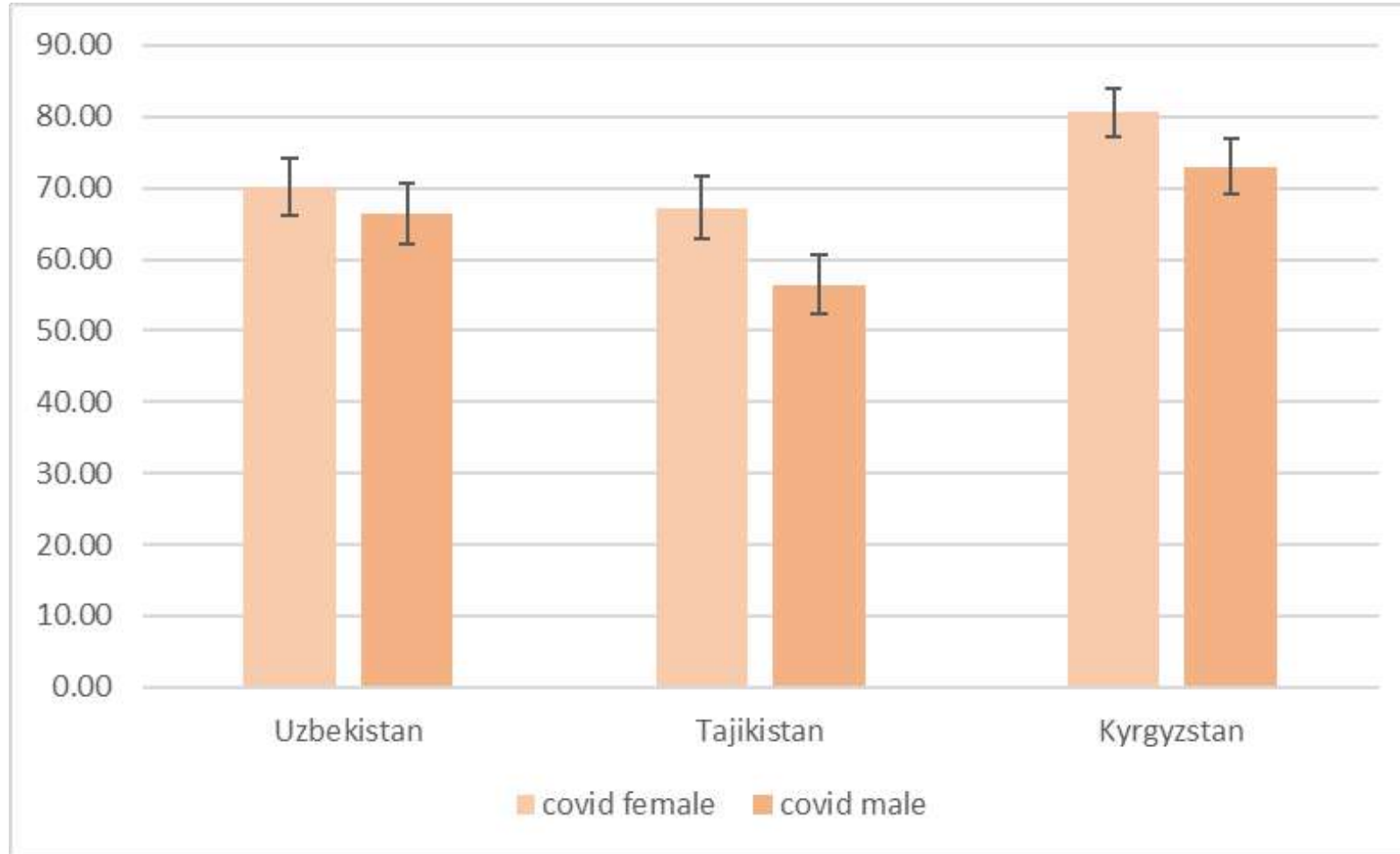# Prevalence of moderate and severe food insecurity, by gender

Prevalence of moderate and severe food insecurity, by gender

	Uzbekistan			Tajikistan			Kyrgyzstan		
	all	female	male	all	female	male	all	female	male
Prevalence of Moderate or Severe Food Insecurity **SDG 2.1.2.**	36.92 (±2.42)	**40.36***** (±3.45)	**33.48 ***** (±3.36)	47.35 (±2.54)	**54.28***** (±3.54)	**40.43***** (±3.55)	43.54 (±2.51)	**47.57***** (±3.53)	**39.50***** (±3.53)
Prevalence of Severe Food Insecurity	4.97 (±0.87)	5.25 (±1.29)	4.68 (±1.18)	7.74 (±1.14)	**9.37***** (±1.77)	**6.11***** (±1.43)	6.67 (±1.09)	6.97 (±1.57)	6.35 (±1.52)
Observations	1000	500	500	1000	500	500	1000	500	500

Notes: Our elaboration from 2021 survey data. ***, **, * significance at 1, 5 and 10% level. Margin of error in parentheses.

Covid-19 induced impact on food security

The share of respondents that attributed their food insecurity experience to Covid-19

Covid-19 induced impact on food security

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Covid-19 impact on food security, %	All	Female	Male
Uzbekistan			
	68.30 (±2.89)	70.20 (±4.02)	66.40 (±4.15)
Tajikistan			
	61.80 (±3.02)	**67.20***(±4.35)	**56.40***(±4.12)
Kyrgyzstan			
	76.80 (±2.62)	**80.60***(± 3.47)	**73.00***(±3.90)
Observations	1000	500	500

Notes: Our elaboration from 2020 survey data. ***, **, * significance at 1, 5 and 10% level. Margin of error in parentheses.

Conclusions and policy implications

- **Rural women are significantly more food insecure (moderate or severe) than men** in all the three countries, pointing to possible gender-based discrimination/gap in adequate access to food. The prevalence of severe food insecurity is also higher for women, but only in Tajikistan the difference is statistically significant.

- The **food security of rural women has been disproportionally affected by Covid-19**. Possible drivers: pre-existing inequalities and limiting socio-economic conditions, more exposed to unregulated informal sector, in low-paid seasonal agricultural work or unpaid family farming, income losses and disruption of jobs and business and perpetuated gender-based gaps in the labour market, limited personal savings and limited access to credit.

- **Establish measures to reduce gender inequalities in food security and nutrition**. These need to recognize the specific roles of women in food systems, as food producers and processors, as well as in household nutrition. Strategies should include both short-term assistance and livelihoods support in the long-term (gender-sensitive social protection; ensure equitable access to productive resources and inputs and services; support rural women's economic activities)

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27 October 2021

Спасибо!!

Erdgin.Mane@fao.org