

Women's Empowerment in Agriculture and Women's Anthropometric Measurements

Interim PBS 2015 Results

Yacob Zereyesus

Kansas State University – USAID METSS

Presented at the 2016 PBS Meeting

Alisa Hotel, Accra- March 17, 2016

Outline

- WEAI
 - Background and introduction
 - PBS baseline and interim results
 - Implications of WEAI to other development indicators
- Women's anthropometry
 - Background and introduction
 - PBS baseline and interim results
 - Women's health research results

Women's Empowerment in Agriculture (WEAI)

- Despite women's role in agricultural (economic) growth, they face persistent obstacles and economic constraints that limit their inclusion in agriculture.
- The WEAI measures the empowerment, agency and inclusion of women in the agriculture sector.
- Identify ways to overcome those obstacles and constraints.

WEAI

- A recent innovation
- Composite, multidimensional measurement tool
- Indicates women's control over critical domains
 - Household
 - Community
 - Economy
- Considers time allocation
- Identifies areas to increase autonomy and decisionmaking

PURPOSE OF THE WEA INDEX

- ❑ Monitor change in women's empowerment under FTF
- ❑ Evaluate approaches for effectiveness
- ❑ Diagnostic tool to identify constraints



Components of the WEAI

- Composed of 2 sub-indexes

$$\text{WEAI} = (0.9)5\text{DE} + (0.1)\text{GPI}$$

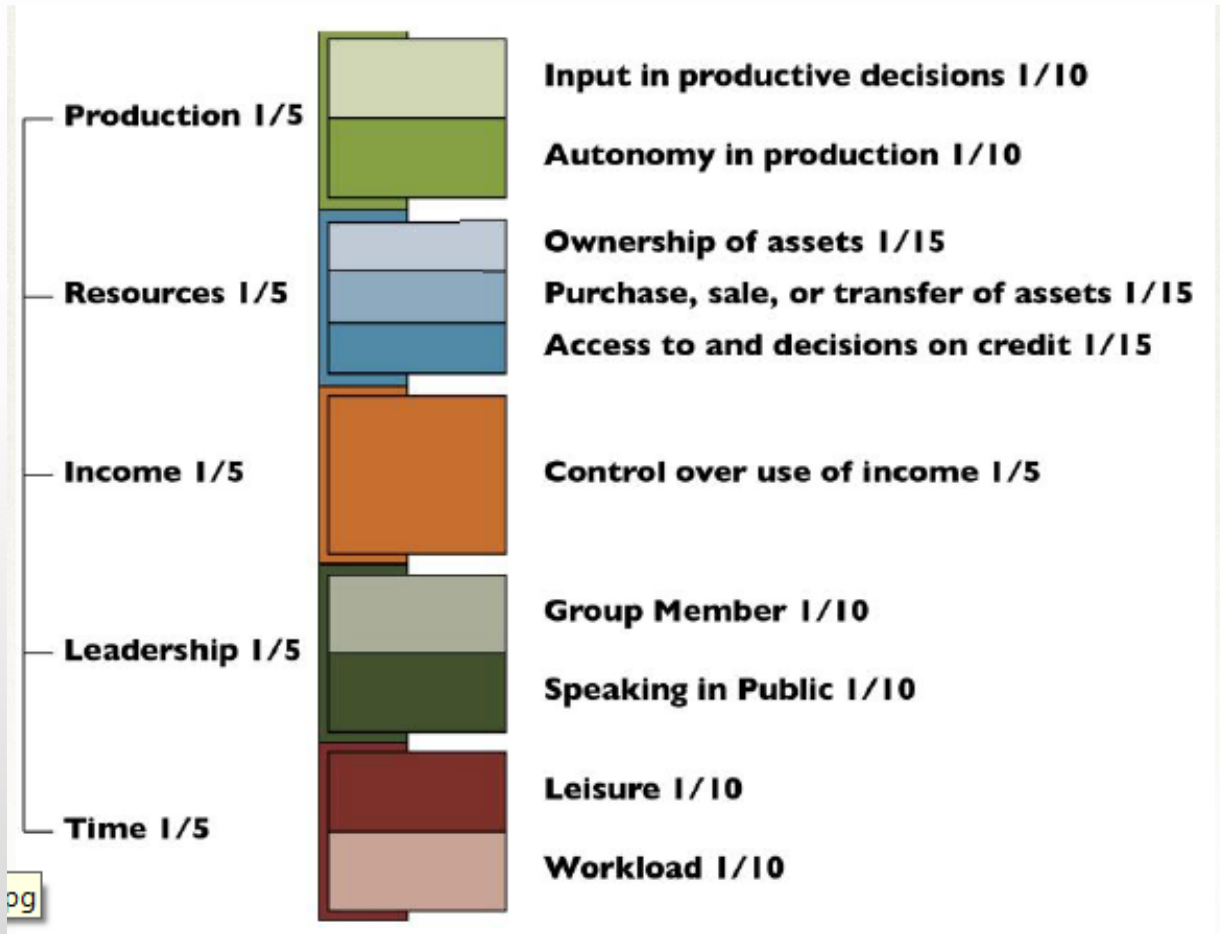
1. Five Domains of Empowerment (5DE)

- Captures women's empowerment in household and communities
- Examines empowerment over 5 domains (10 indicators in total)

2. Gender Parity Index (GPI)

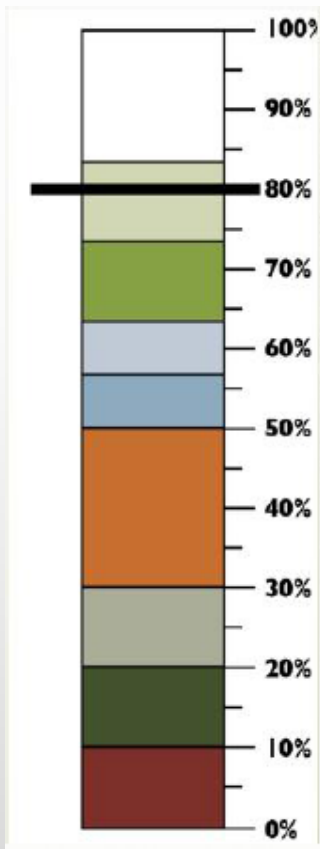
- Relative inequality measure
- Reflects the inequality in 5DE profiles between the 1^o adult male and female adult in each household

Five domains of empowerment



Ten indicators of empowerment

Who is empowered?



An individual who has achieved '**adequacy**' in 80% or more of the **weighted** indicators.

Calculating 5DE

$$5DE = H_e + H_n (A_a)$$

H_e = % of women who are empowered

H_n = % of women who are *not* empowered ($1 - H_e$)

A_a = % of dimensions in which disempowered women have adequate achievements

Calculating GPI

$$GPI = 1 - H_w (R_p)$$

H_p = % of women with gender parity

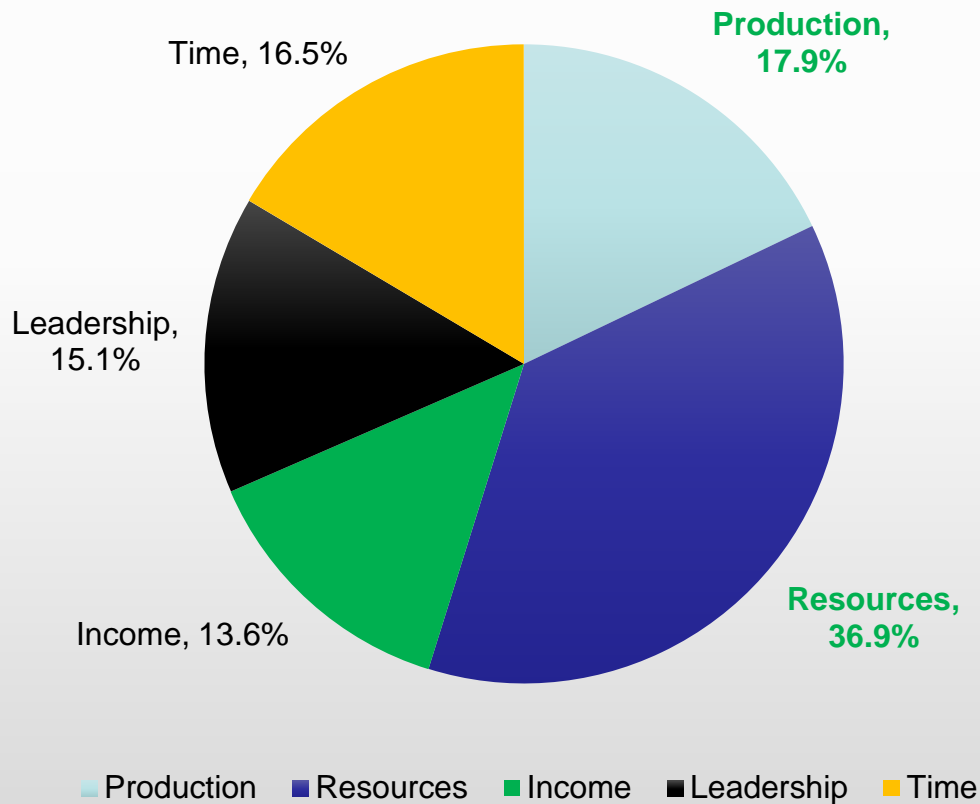
H_w = % of women *without* gender parity

R_p = average empowerment gap between women compared with men in their HH

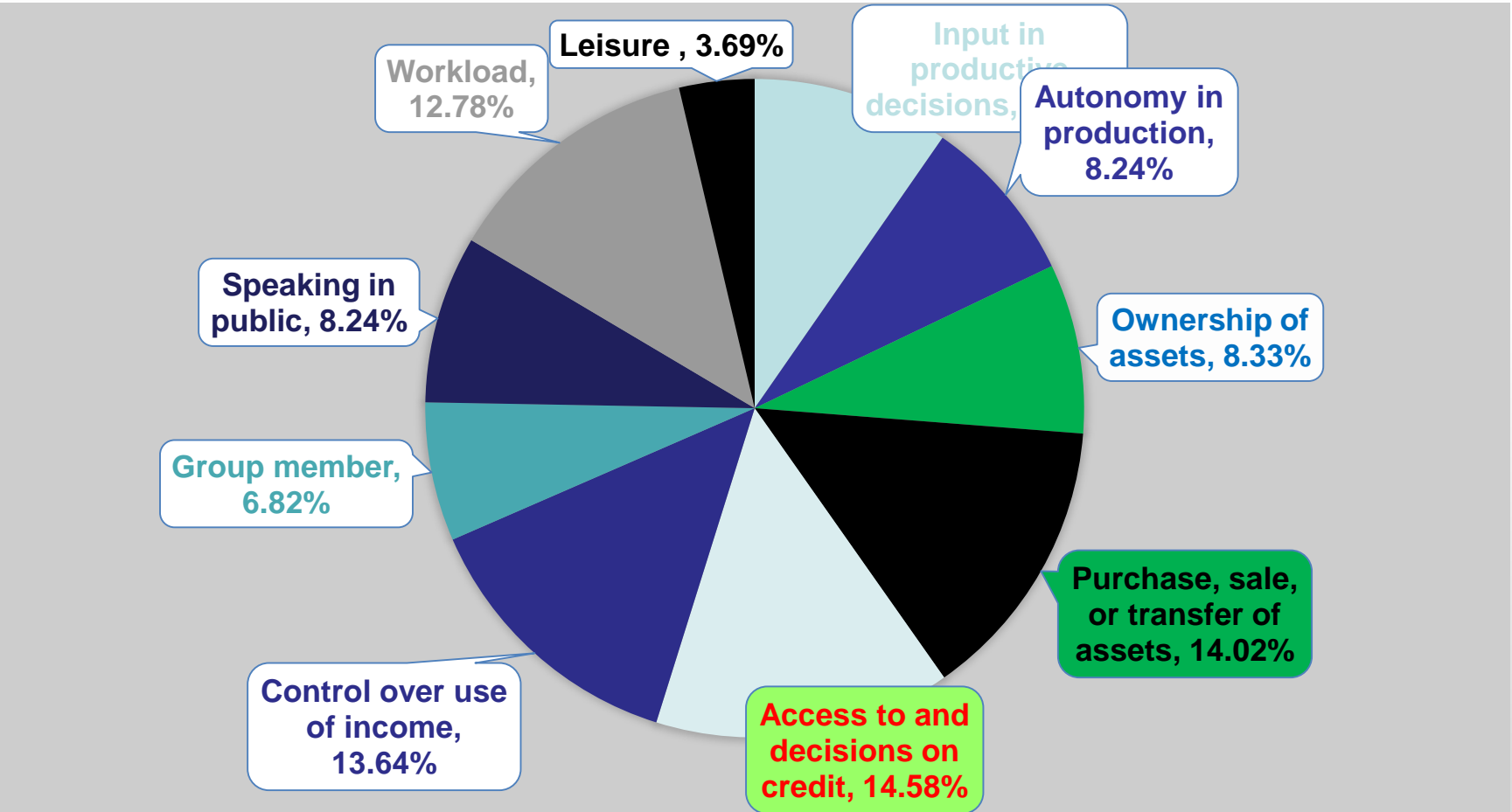
Baseline WEAI results

Indexes	Zone of Influence	
	Women	Men
Disempowered Headcount (H)	72.50%	26.90%
Average Inadequacy Score (A)	40.90%	32.30%
Disempowerment Index (M_o)	0.297	0.087
5DE Index ($1-M_o$)	0.703	0.913
Number of Observations	2,316	2,674
Percentage of Data Used	67.20%	73.40%
Percentage of Women with No Gender Parity (H_{GPI})	70.40%	
Average Empowerment (I_{GPI})	26.80%	
Gender Parity Index (GPI)	81.10%	
Number of Women in Dual Households	2,556	
Percentage of Data Used	63.00%	
WEAI	0.714	

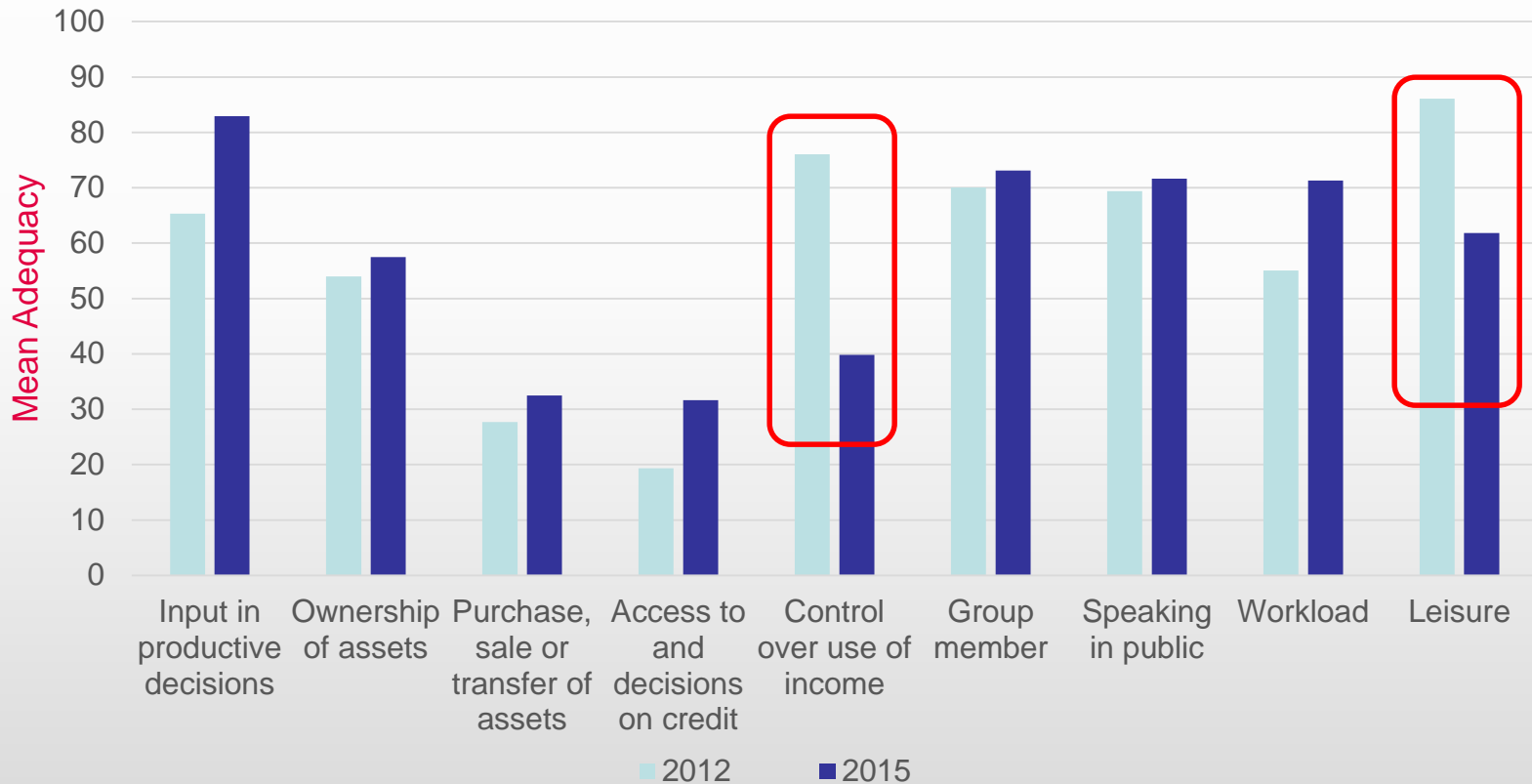
Tracing the domain constraints



Identifying the indicator constraints



Indicator comparison between 2012 and 2015



Closer look at the 2015 domains

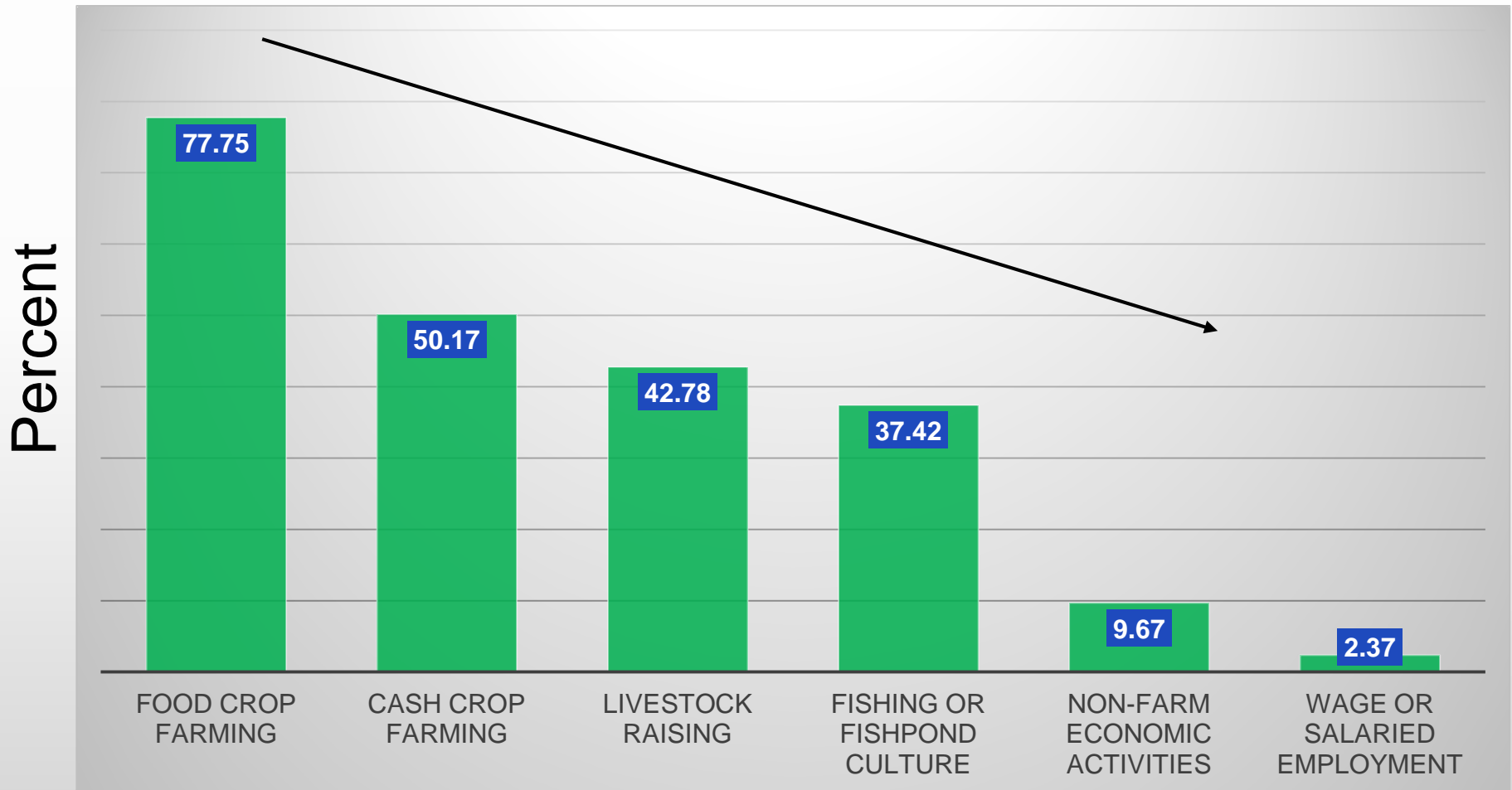


Source : www.usaid.gov

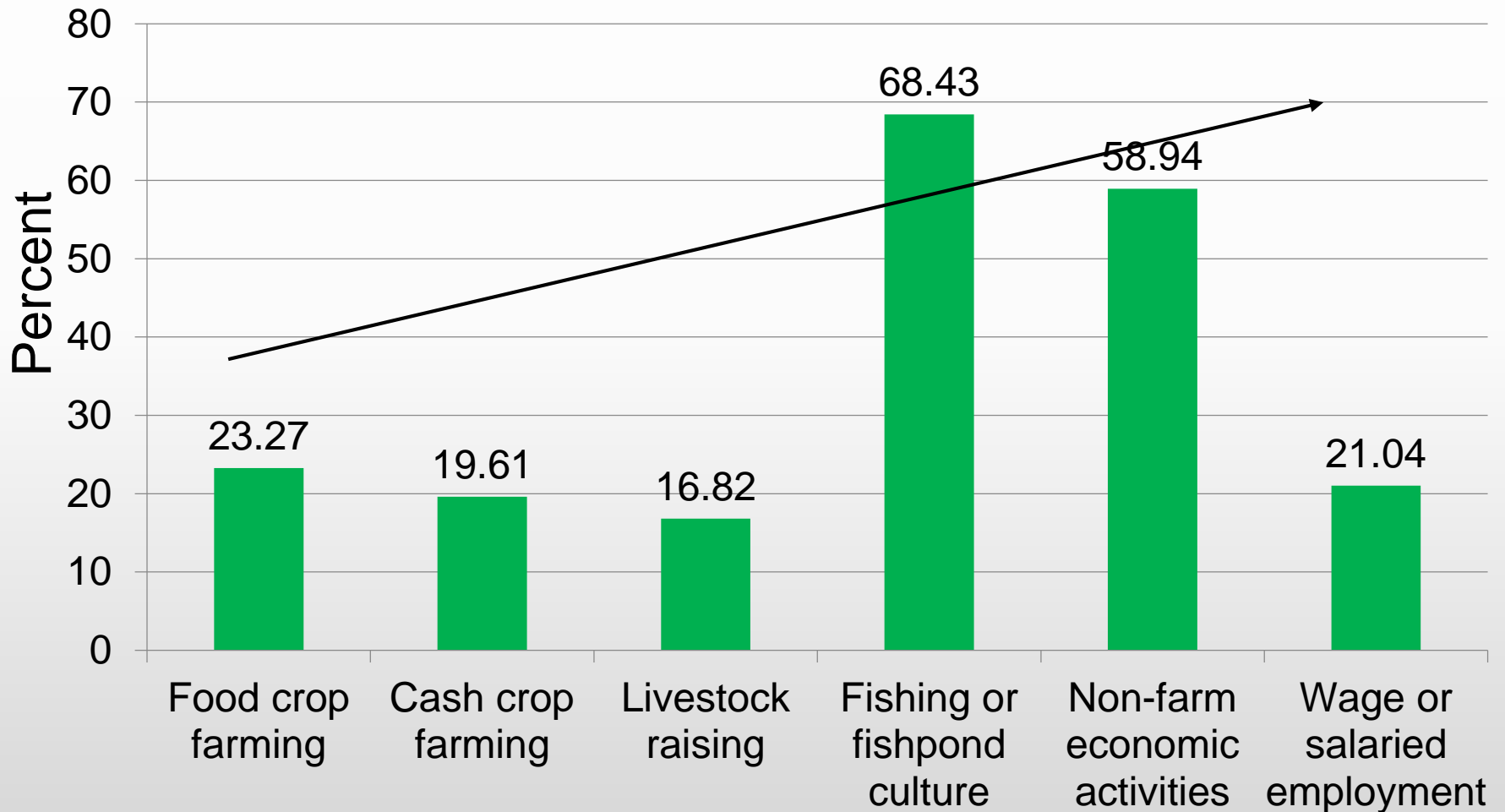


Source: www.spring-nutrition.org

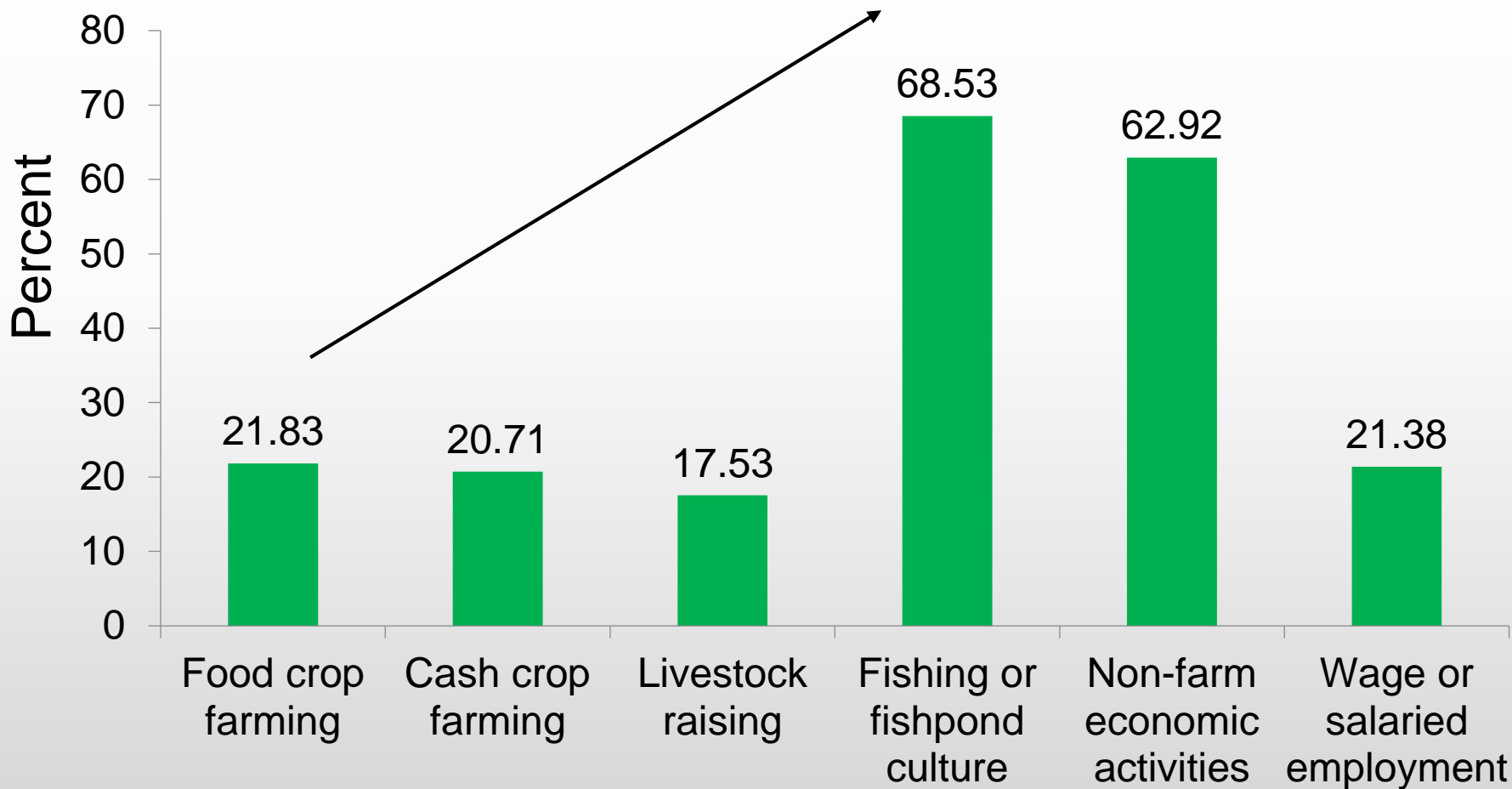
Women's participation in an activity



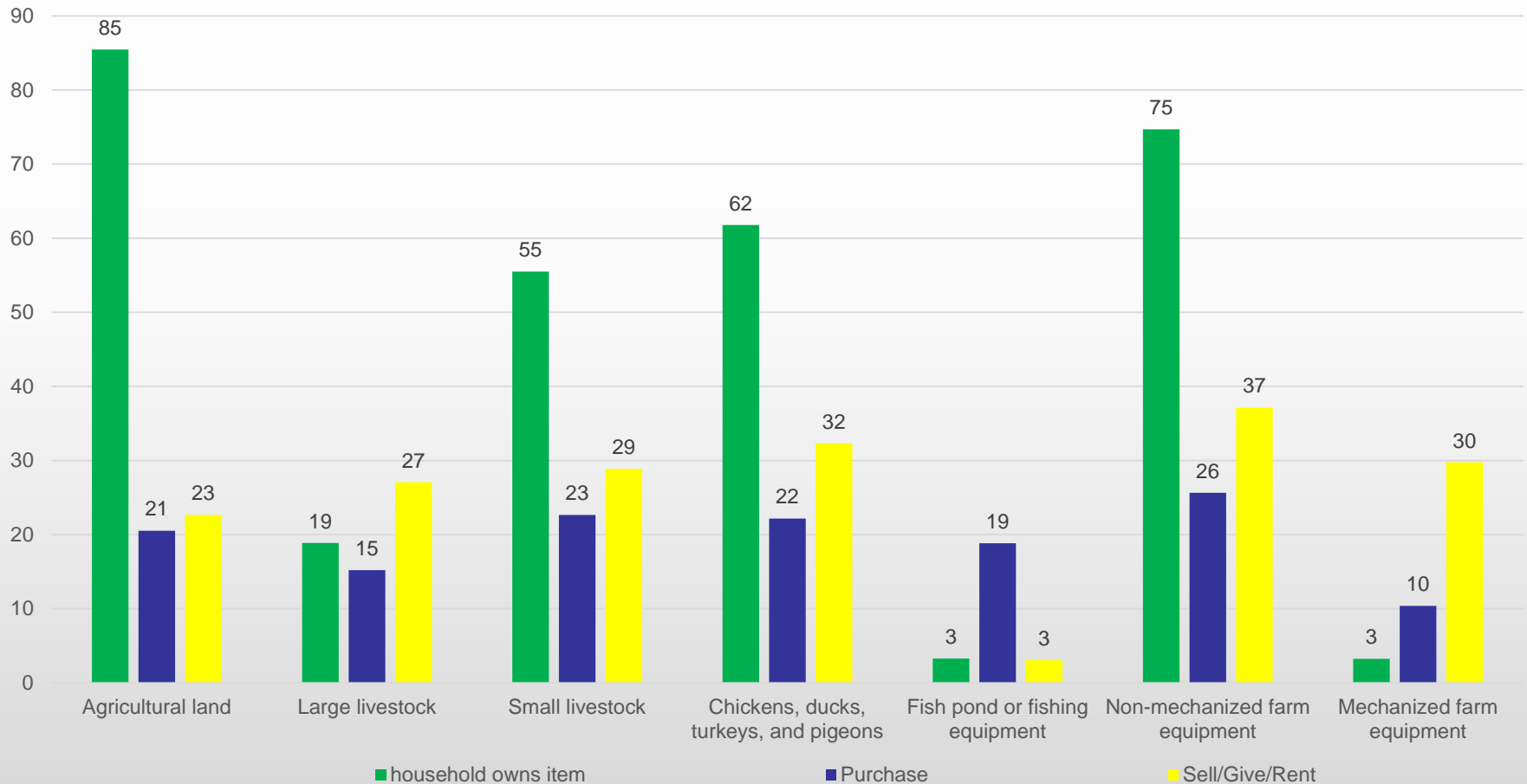
Women's input into decisions about an activity



Women's input into use of income from an activity



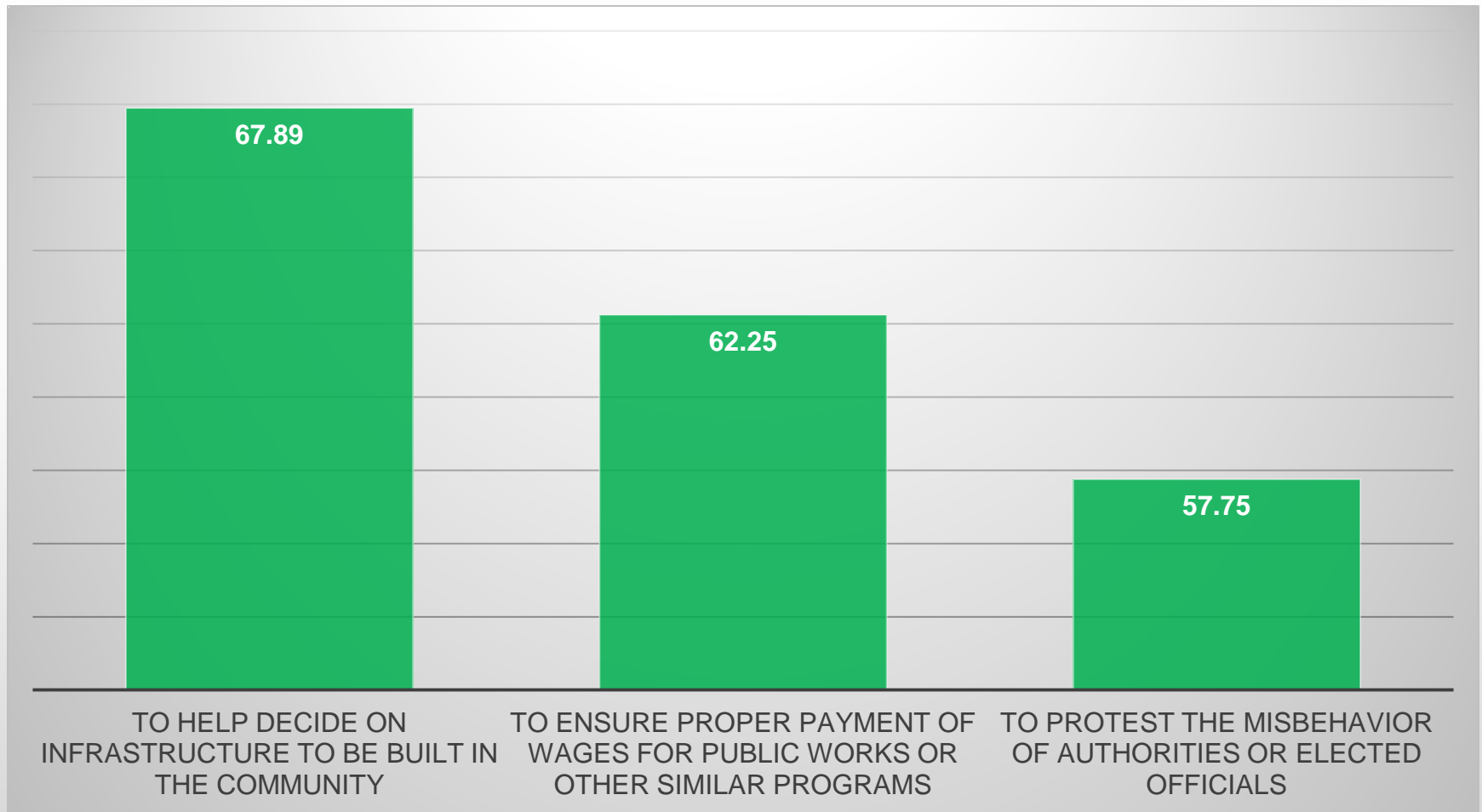
Ownership and women's control over productive resources



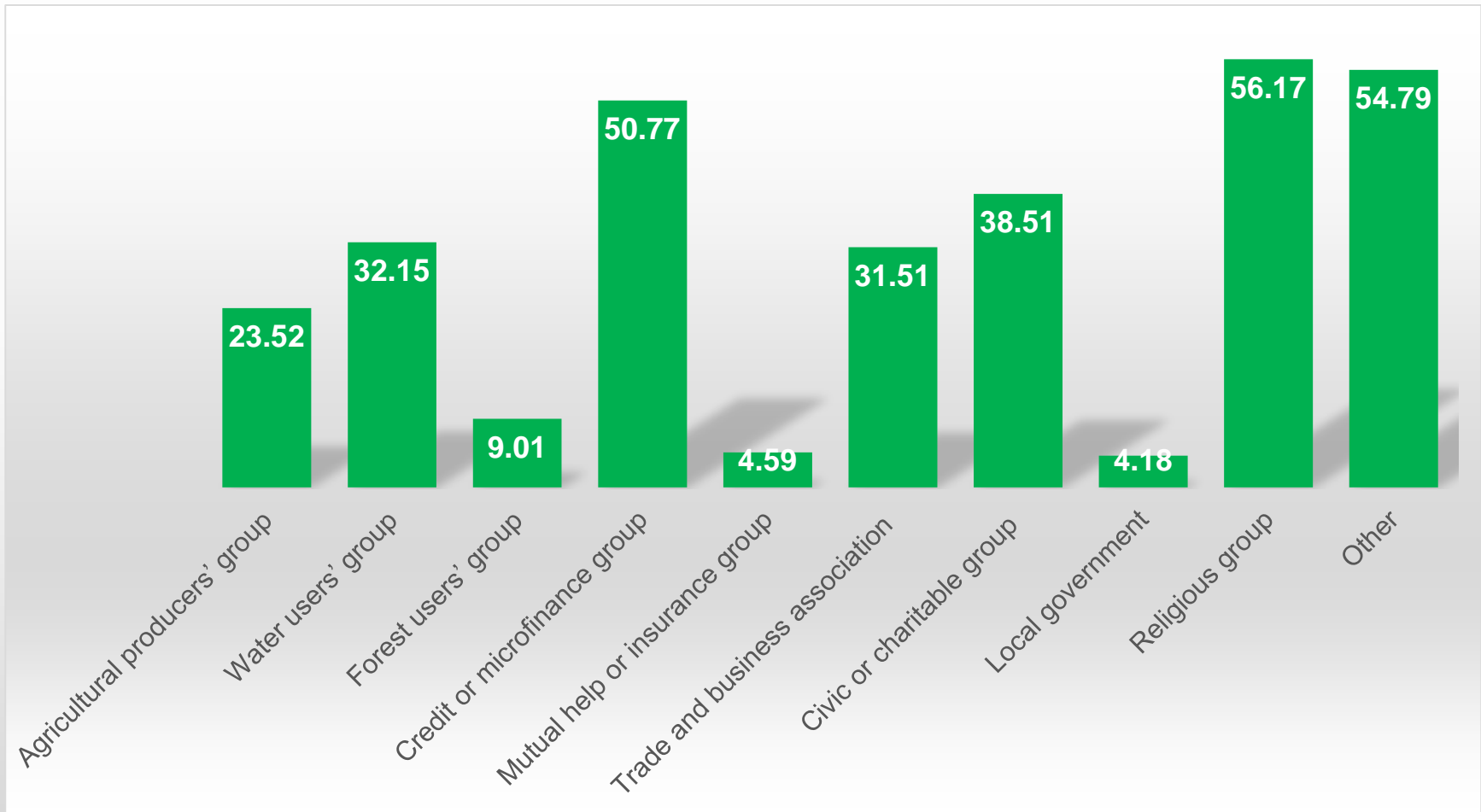
Access to credit among women

Estimate	Any source	NGO	Informal lender	Formal lender	Friends or relatives	Group-based micro-finance
Any loan	31.66	2.95	2.23	4.42	1.98	8.65
In-kind loan	3.27	0.54	0.22	0.00	2.56	0.13
Cash loan	26.89	2.29	1.83	4.37	14.58	8.47

Comfort with speaking in public among women



Group membership among women



Time allocation among women

Primary Activity	Mean hours devoted	Primary Activity	Mean hours devoted
Sleeping and resting	6.98	Cooking	1.80
Eating and drinking	1.03	Domestic work (fetching food and water)	1.77
Personal care	0.72	Care for children/adults/elderly	1.02
School and homework	2.47	Travel and commuting	1.41
Work as employed	2.77	Watching TV/listening to radio/reading	1.20
Own business work	4.37	Exercising	0.30
Farming/livestock/fishing	4.04	Social activities and hobbies	2.07
Shopping/getting services	2.08	Religious activities	1.31
Weaving, sewing, textile care	3.18	Other	2.77

Allowing the data tell the story ...

- Does women's empowerment matter for ...?
 - Women's health
 - children's health
 - Collective health
- Implications of women's empowerment to
 - food and
 - nutrition security
- Collaborative Research Results

The women's health effect of empowerment

- The index not so much
- Indicators : Autonomy in Production, Decision Making and Access to Credit, Group Membership, and Leisure Time...
- Other factors: women's education, WDDS

The women's health effect of empowerment

Variables	Stand. Coef.	Stand. Std. Err.
Inadequacy count (WEAI)	-0.051	0.058
Input in Productive Decisions	0.060	0.065
Autonomy in Production	0.339***	0.069
Ownership of Assets	-0.164**	0.072
Purchase, Sale, or Transfer of Assets	0.093	0.071
Access to and Decisions on Credit	-0.223***	0.061
Control over Use of Income	-0.036	0.070
Group Member	-0.155***	0.057
Speaking in Public	0.063	0.064
Leisure Time	-0.136**	0.056
Work Burden	-0.061	0.062

Significance levels: *p<0.1 ** p<0.05, ***p<0.0

Does women's empowerment matter for children's health?

- The index not so much
- The indicators not so much
- Other factors such as mother's education, household's income...

Does women's empowerment matter for children's health?

Variable	Coefficient	Standard error
Inadequacy count (WEAI)	0.005	0.032
Child's age	-0.217***	0.050
Child's gender	-0.037	0.035
Mother's education	0.062**	0.030
Mother's age	0.057	0.033
Women's dietary diversity score	0.050	0.032
Father's education	-0.001	0.030
Household hunger scale	0.105***	0.033
Income deciles	0.006	0.043
Household size	0.110	0.058
Safe drinking water	0.056	0.035
Locale	0.098**	0.040

Significance levels: * $p < 0.1$ ** $p < 0.05$, *** $p < 0.0$

household's health effects of women's empowerment

- positively influences the overall household's physical health
- Lack of adequate group membership negatively affects the overall health status of the household.
- Although women's dissatisfaction with their leisure time is a source of their disempowerment, it is positively associated with the overall household's health status .
- Literacy of father, the proportion of dependents, the urban locale and quality of living condition variables

household's health effects of women's empowerment

Variable	Coefficient	Standard Error
Inadequacy Count (WEAI)	0.174**	0.086
Input in productive decisions	0.021	0.042
Autonomy in production	0.017	0.038
Ownership of assets	-0.017	0.040
Purchase, sale, or transfer of assets	0.029	0.045
Access to and decisions on credit	0.082*	0.047
Control over use of income	-0.019	0.046
Group member	0.114**	0.046
Speaking in public	-0.038	0.038
Work burden	0.055	0.035
Leisure time	-0.100**	0.043

Significance levels: * $p < 0.1$ ** $p < 0.05$, *** $p < 0.01$

Food and nutrition security implications of women's empowerment

- positively influences a household's nutrition and food security status as indicated by consumption of carbohydrate, protein, and fat, and the level of monetary shortfall in food poverty.
- *Income, Production and Leadership* are areas for intervention to influence households' nutrition and food security outcomes.
- *Time and Resources* domains reveal that some intra-household trade-offs may exist

Women's anthropometry

Objective:

The percentage of non-pregnant women of reproductive age (15-49 years) who are underweight, as defined by a body mass index (BMI) < 18.5.

Measured by:

$$\text{Indicator} = \frac{\# \text{ of non-pregnant women 15-49 yrs with a BMI} < 18.5}{\# \text{ of non-pregnant women 15-49 yrs in the sample}}$$

BMI Classification

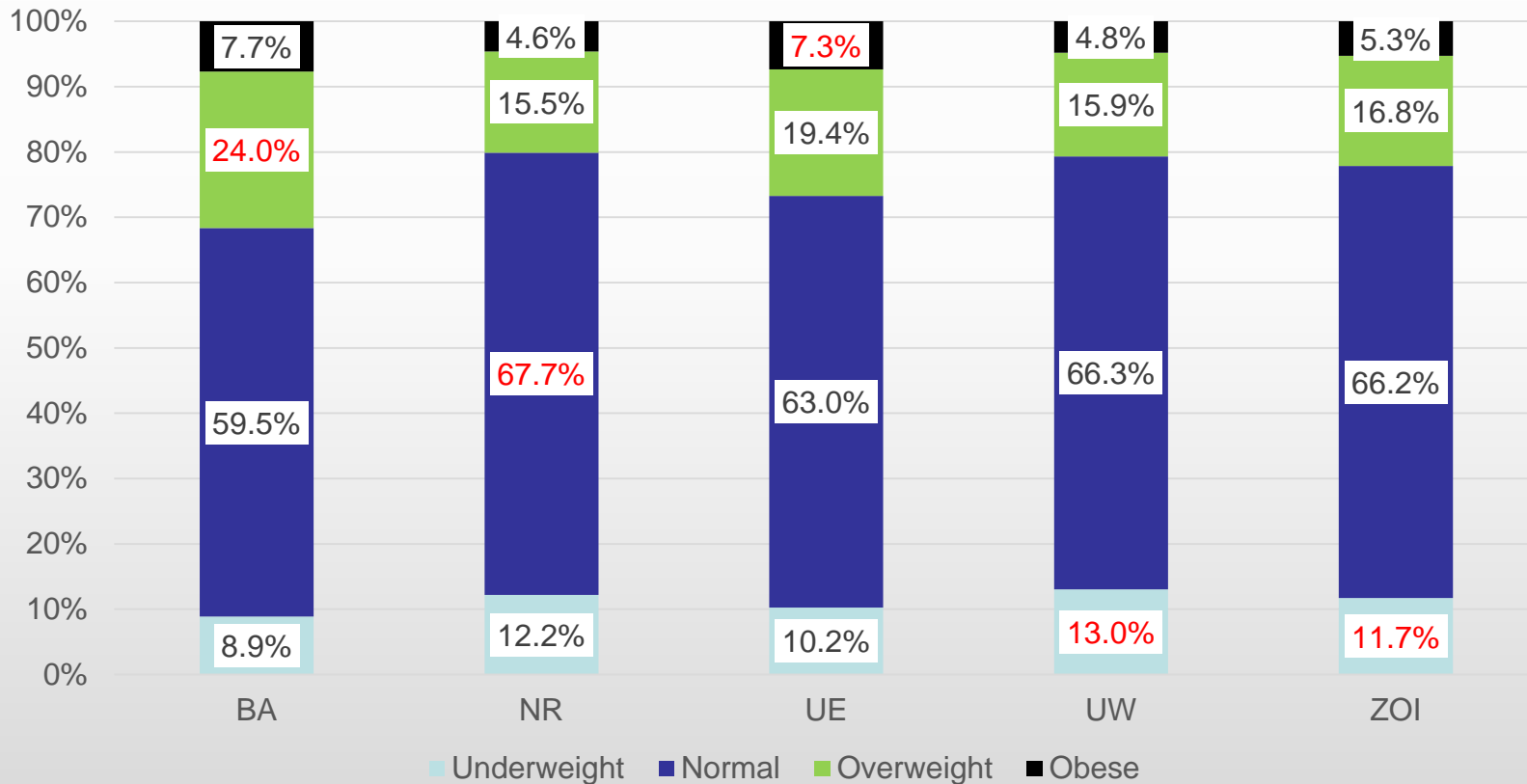
The International Classification of adult underweight, overweight and obesity according to BMI

Classification	BMI(kg/m²)
	Cut-off Points
Underweight	< 18.50
Normal range	18.50 - 24.99
Overweight	25.00 - 29.99
Obese	≥ 30.00

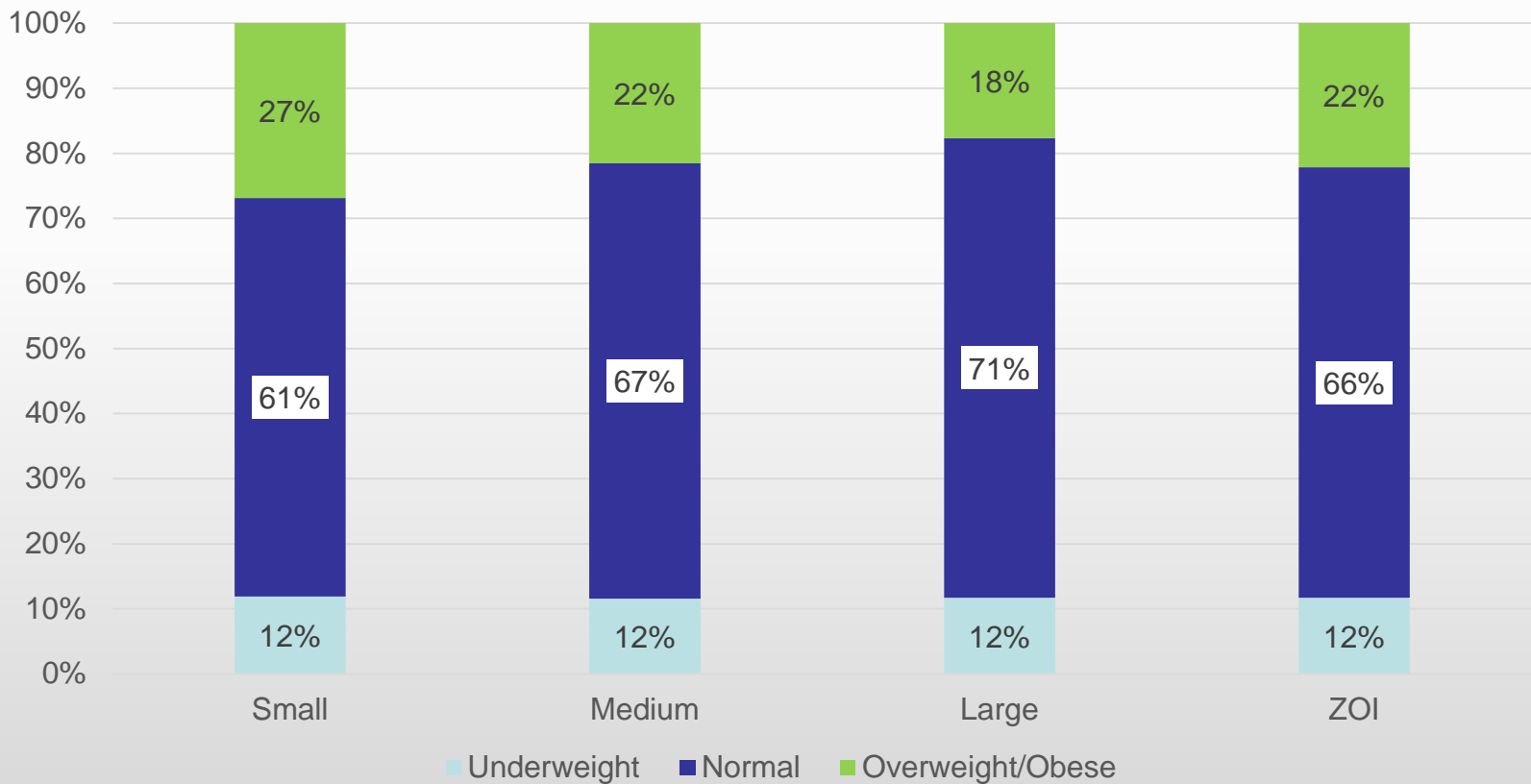
Source: Adapted from WHO, 1995, WHO, 2000 and WHO 2004.

Underweight in 2012=12%

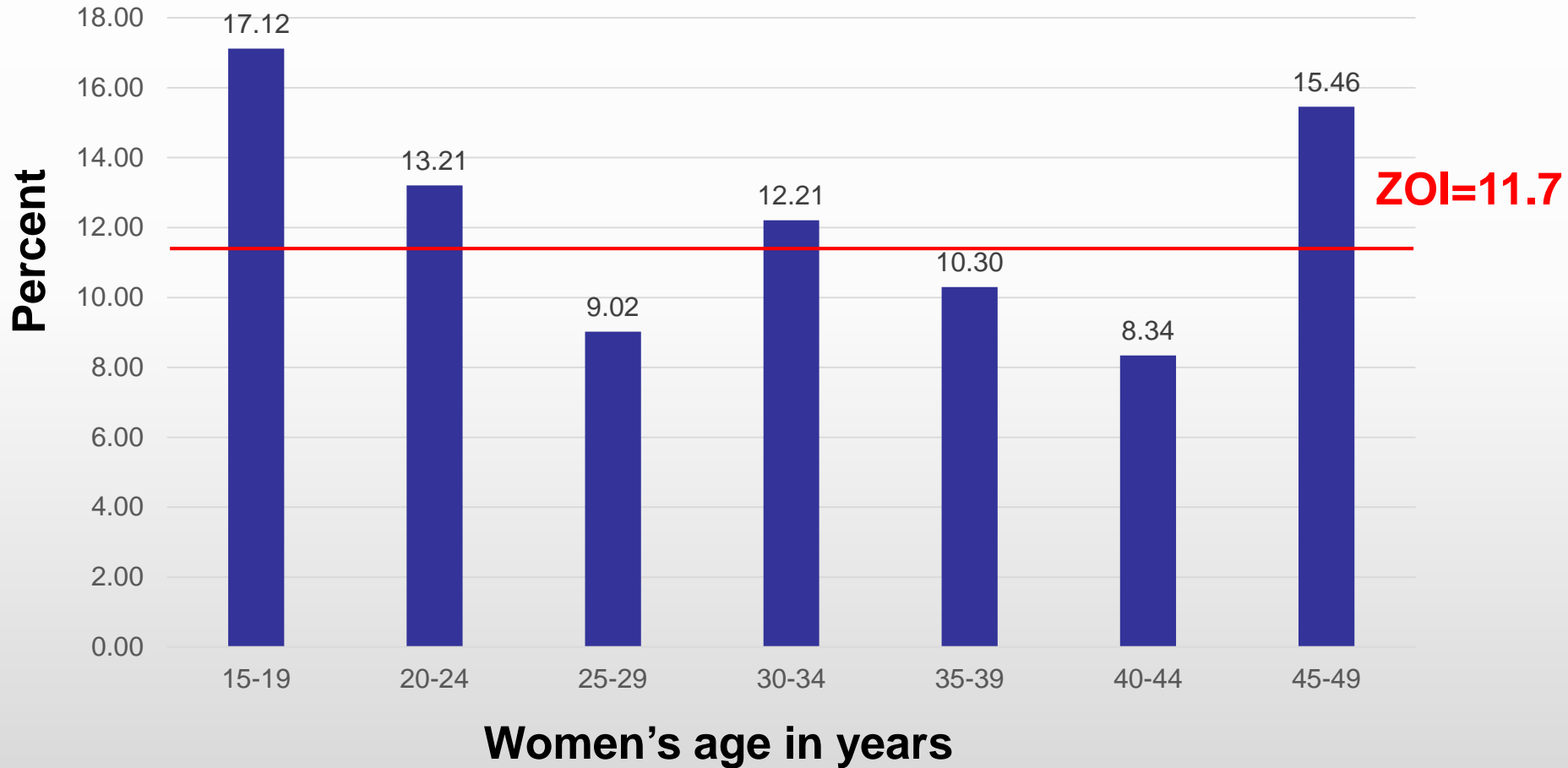
Distribution of Women by BMI



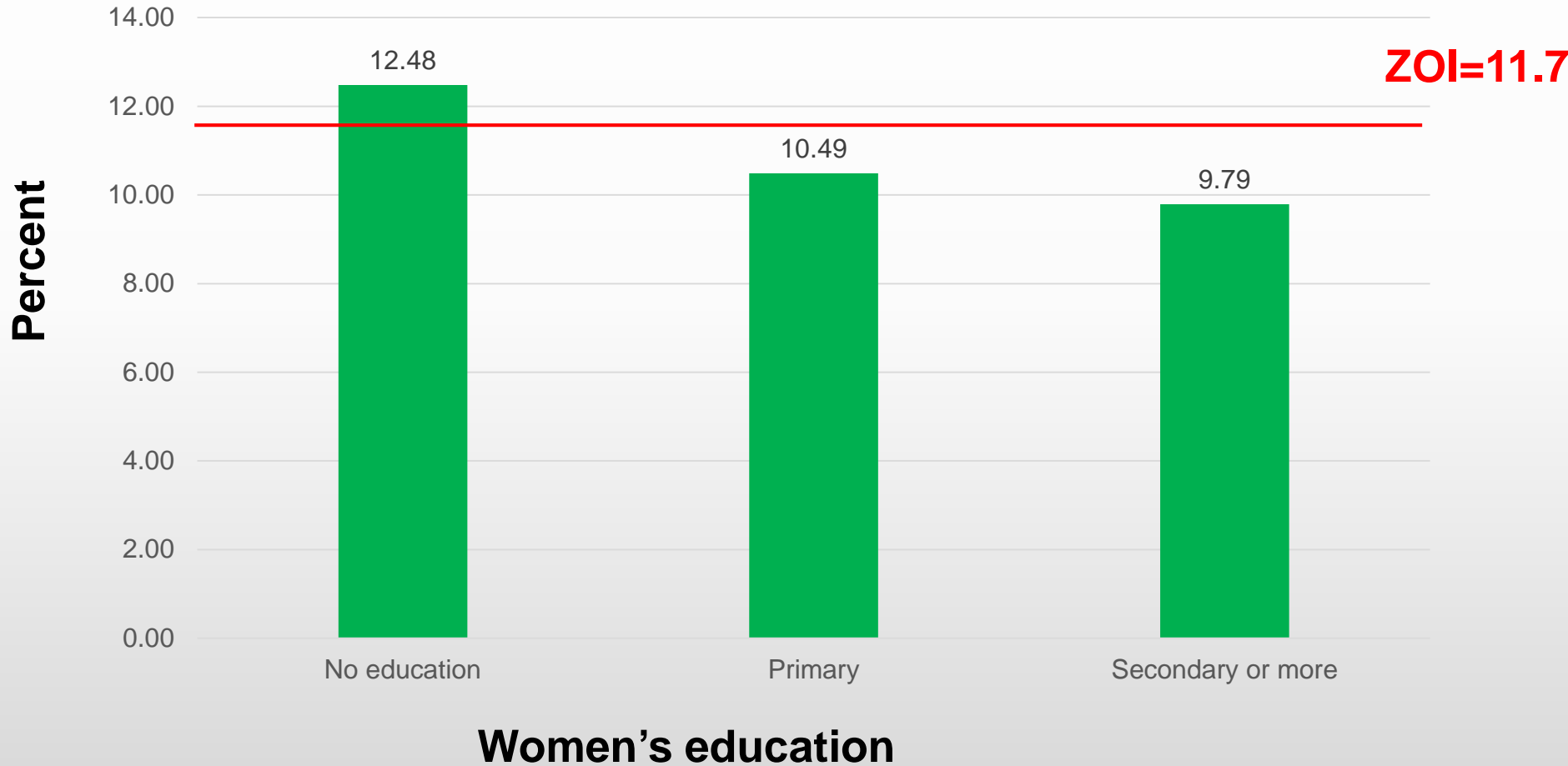
BMI by Household Size



Underweight women by age



Underweight women by education



WEAI and Women's BMI

- health implications of the different BMI sub-samples (underweight, normal, overweight, and obese)
- women with a higher degree of disempowerment have a significantly lower health status
- for women categorized as obese, the production and leadership domains are found to be the areas of priority for directing policy interventions to enhance empowerment of women and ultimately influence their health

Responsiveness of women's health to disempowerment in agriculture indicators

	Underweight	Normal	Overweight	Obese
Aggregate	-0.052 (0.065)	-0.030 (0.047)	-0.038 (0.042)	0.537*** (0.165)
Resources	-0.033 (0.035)	-0.011 (0.008) ^{OLS}	-0.040 (0.026)	0.131* (0.074) ^{OLS}
Time	0.037 (0.024) ^{OLS}	-0.130** (0.054)	-0.026 (0.043)	0.123* (0.069) ^{OLS}
Production	-0.033 (0.047)	0.009 (0.006) ^{OLS}	-0.028 (0.022)	0.405*** (0.156)
Income	0.003 (0.033)	-0.017 (0.033)	0.006 (0.006) ^{OLS}	0.217*** (0.068)
Leadership	-0.042 (0.055)	0.001 (0.007) ^{OLS}	-0.002 (0.010) ^{OLS}	0.300* (0.160)

Thanks