

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

Interim PBS 2015 Results  
Northern Region and Districts

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# 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

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

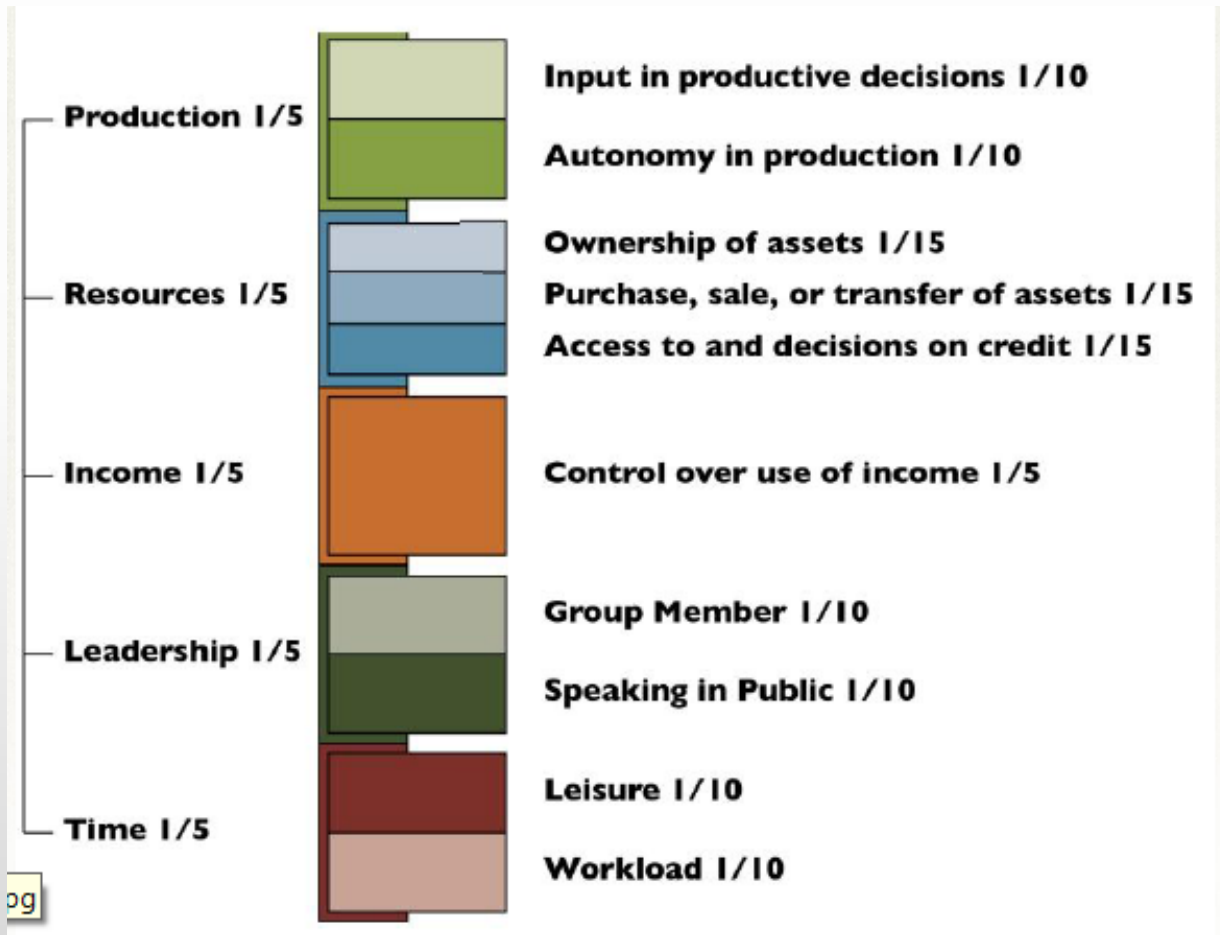
### 1. Five Domains of Empowerment (5DE)

- 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<sup>o</sup> adult male and female adult in each household

**Five domains of empowerment**



**Ten indicators of empowerment**

## What is adequacy?

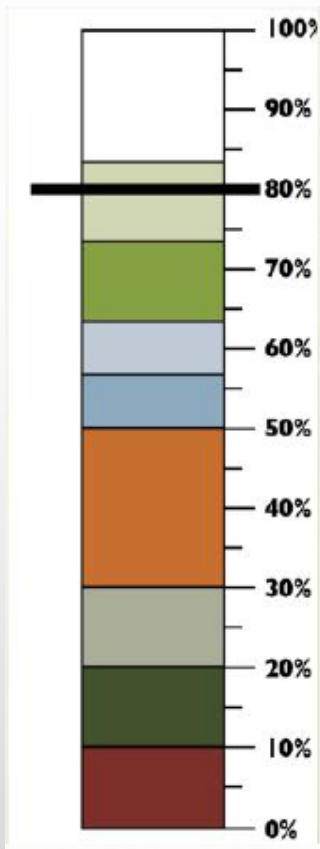
Indicator	Adequacy Criteria
<b>Input in Productive Decisions</b>	A woman is adequate if she participates or feels she has input in at <b>least two types</b> of decisions.
<b>Autonomy in Production</b>	A woman has adequate achievement if her actions are <b>motivated more by her values</b> as opposed to her fear of disapproval or feelings of coercion.
<b>Ownership of assets</b>	A woman is adequate if she has <b>joint or sole</b> ownership of at least one major asset.
<b>Purchase, sale, or transfer of assets</b>	On assets owned by a household, a woman is adequate if she is involved in the <b>decisions to buy, sell, or transfer assets</b> .
<b>Access to and decisions on credit</b>	An adequate woman belongs to a household that has <b>access to credit</b> and when decisions on credit are made, she has input in <b>at least one decision regarding at least one source credit</b> .



## What is adequacy?

Indicator	Adequacy Criteria
<b>Control over use of income</b>	A woman is adequate if she has some input on <b>income decisions</b> provided that she participated in the income generating activity.
<b>Group Member</b>	A woman is considered adequate if she is a <b>member of at least one group</b> from a wide range of economic and social groups.
<b>Speaking in Public</b>	A woman is deemed adequate if she is <b>comfortable speaking in public</b> in at least one context.
<b>Leisure Time</b>	A woman has adequate leisure time if she does <b>not express any level of dissatisfaction</b> with the amount of leisure time available.
<b>Work Burden</b>	A woman is considered to have an excessive workload and thus, inadequate if she worked more than <b>10.5 hours in the previous 24 hours</b> .

## 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

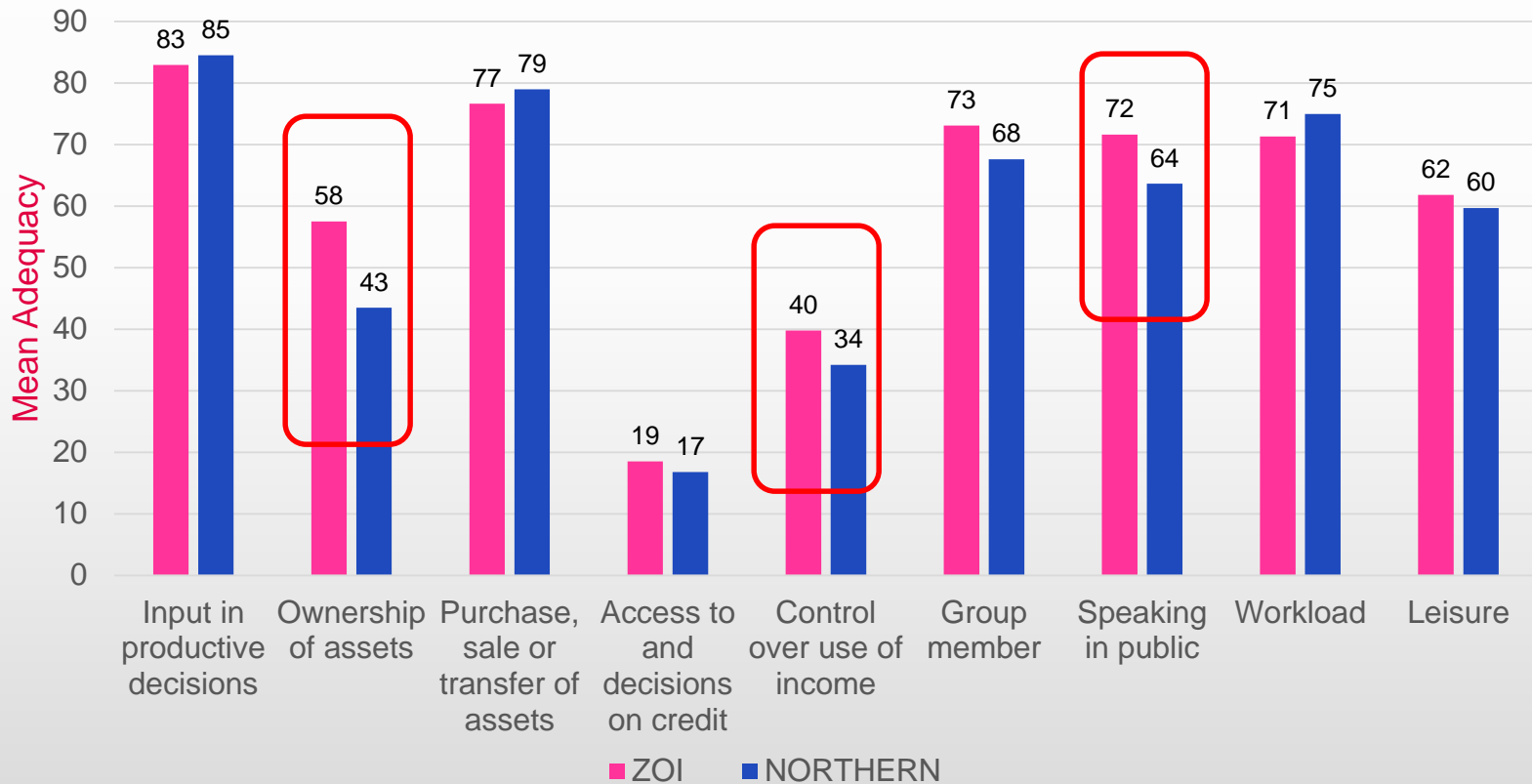
$H_w$  = % of women *without* gender parity

$R_p$  = 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	

## Indicator comparison between Northern region and ZOI averages





# Closer look at the 2015 domains

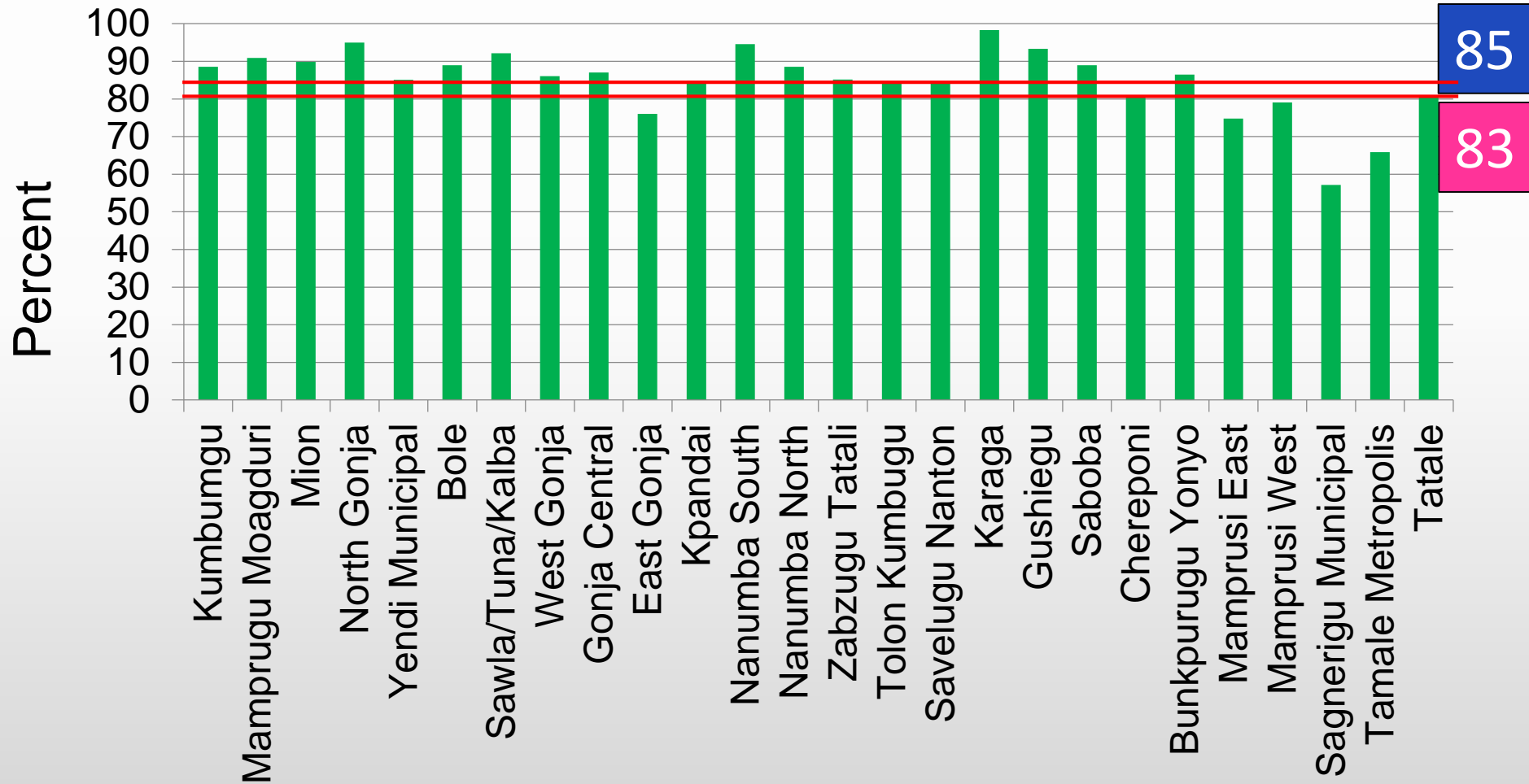


Source : [www.usaid.gov](http://www.usaid.gov)



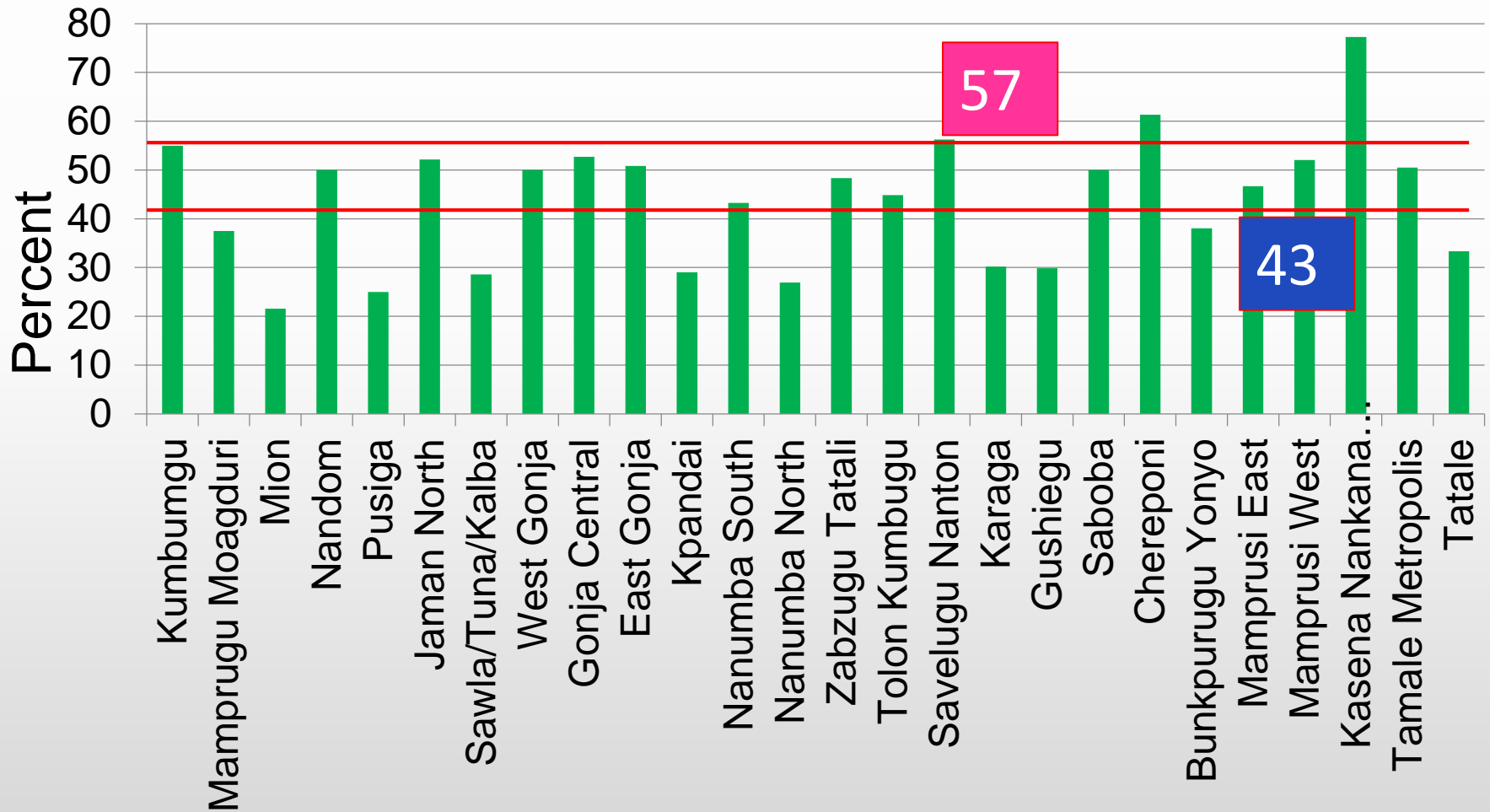
Source: [www.spring-nutrition.org](http://www.spring-nutrition.org)

## Input in decision making

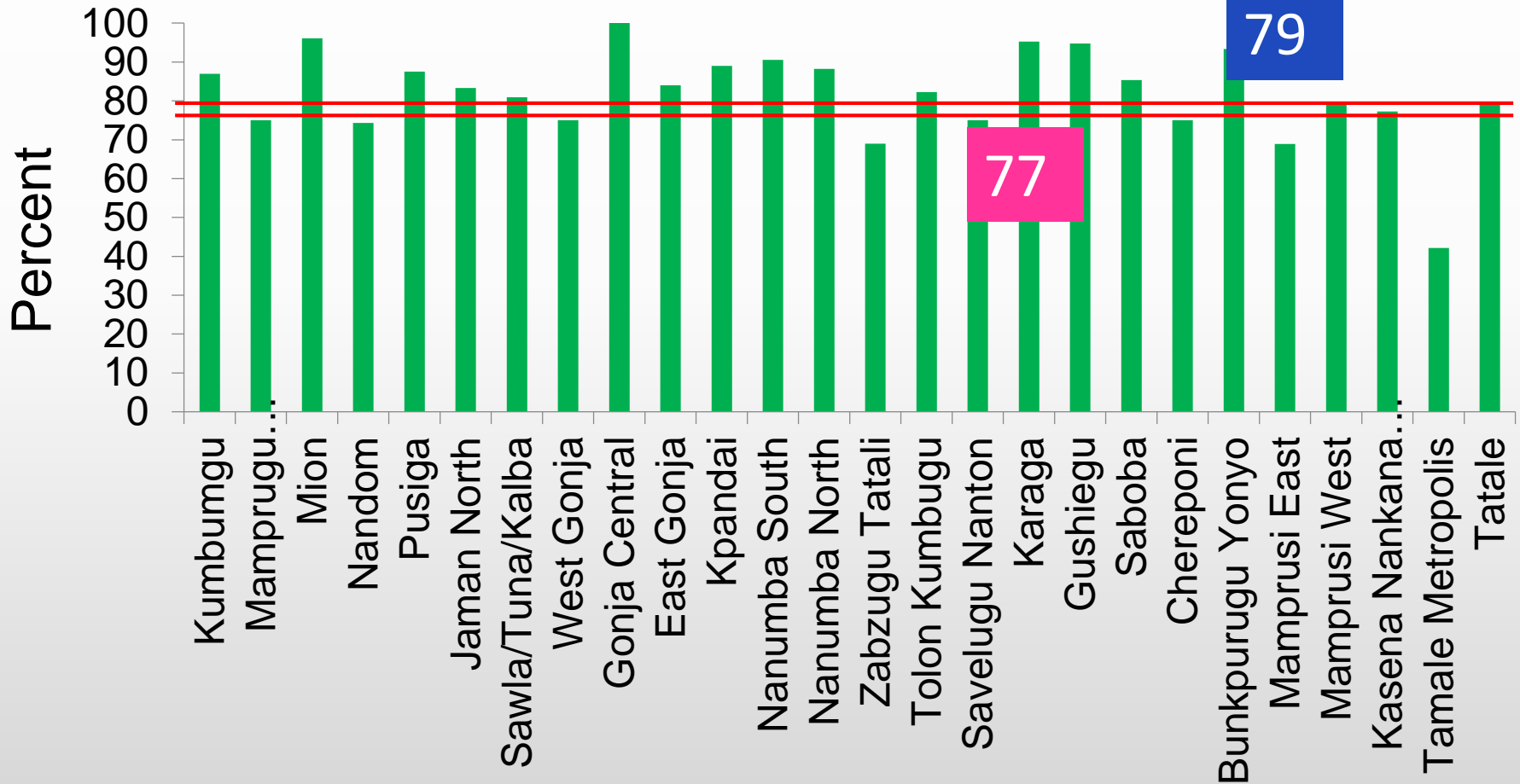




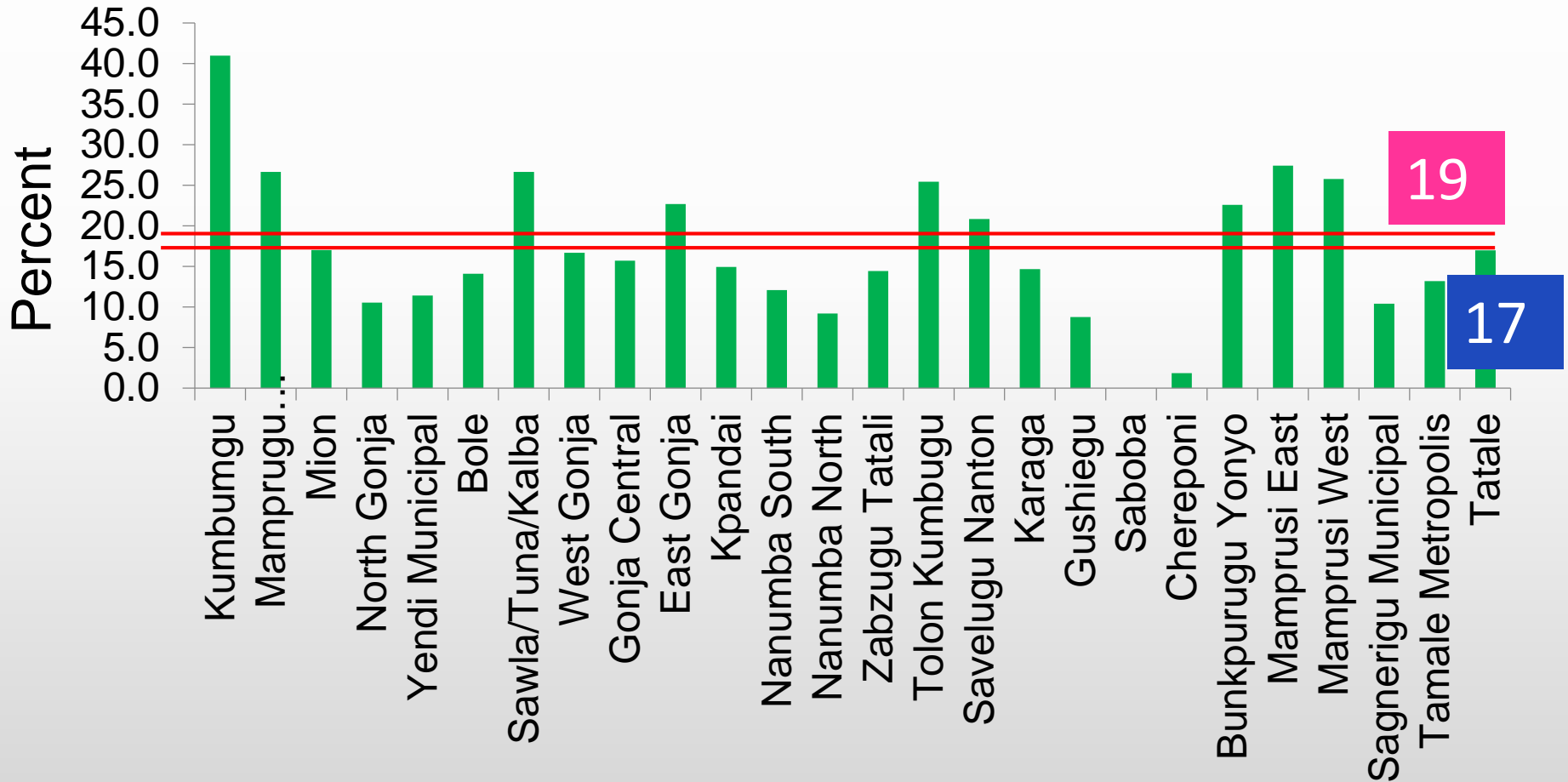
# Asset Ownership



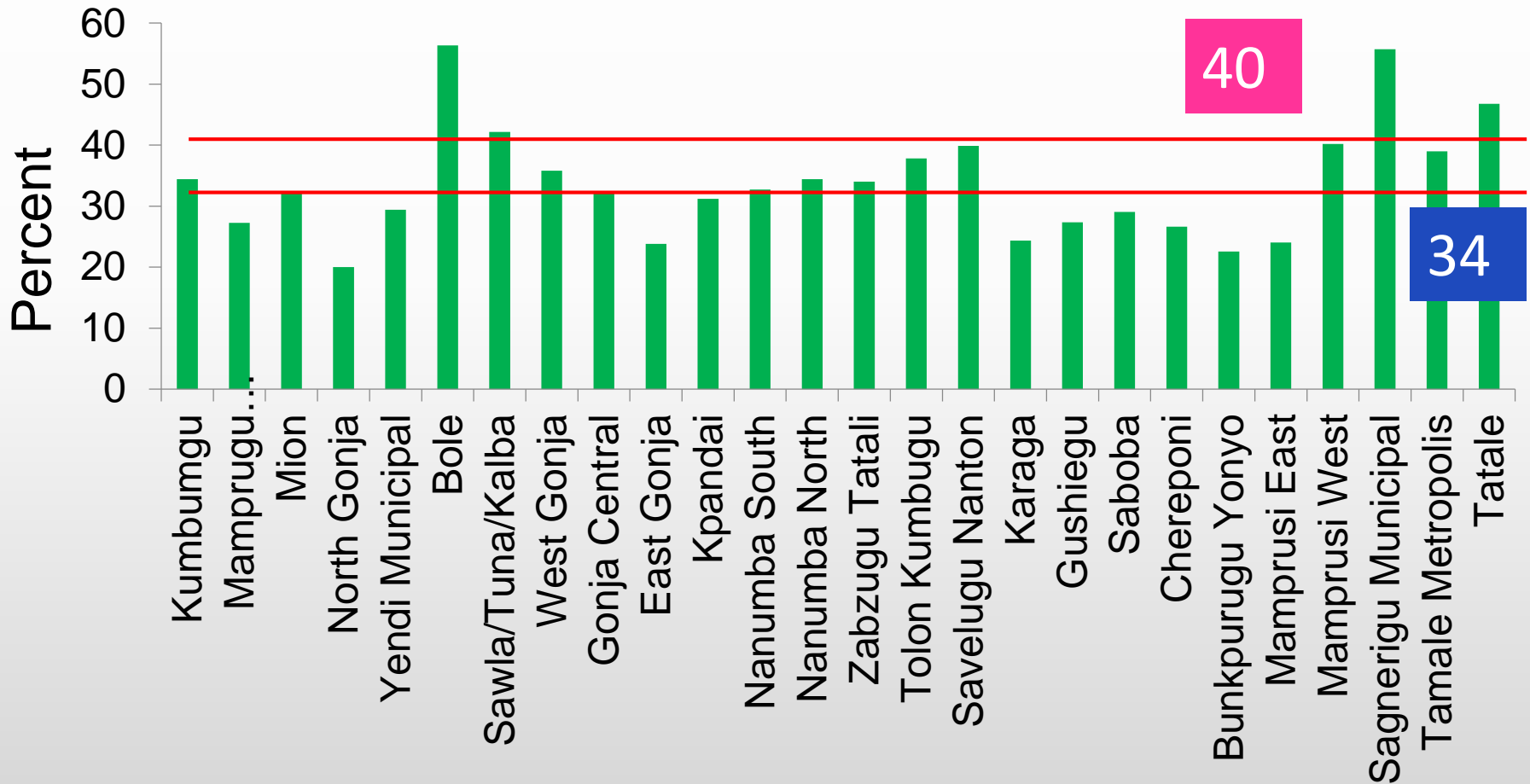
# Purchase, sale or transfer of assets



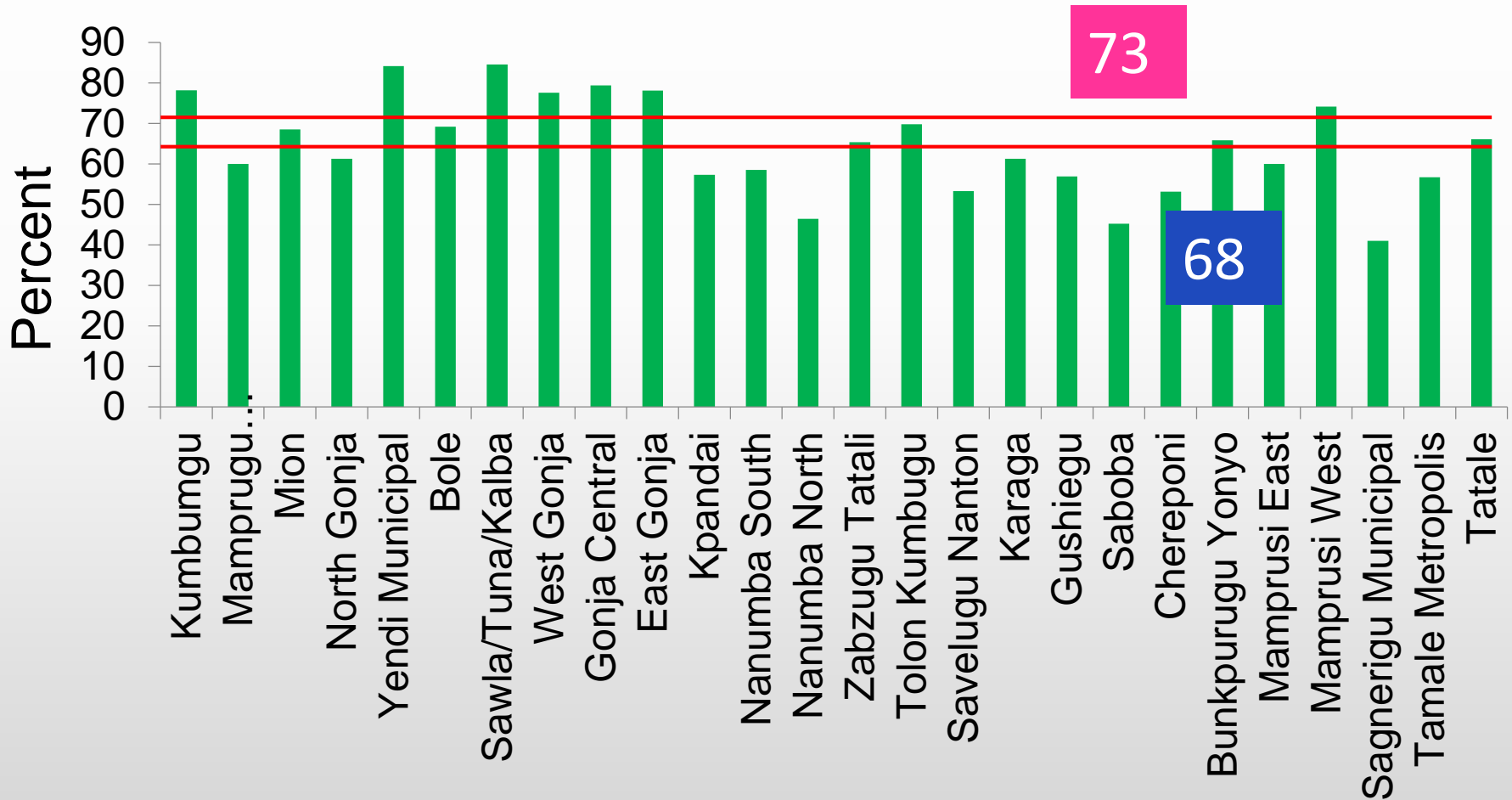
## Access to and decisions on credit



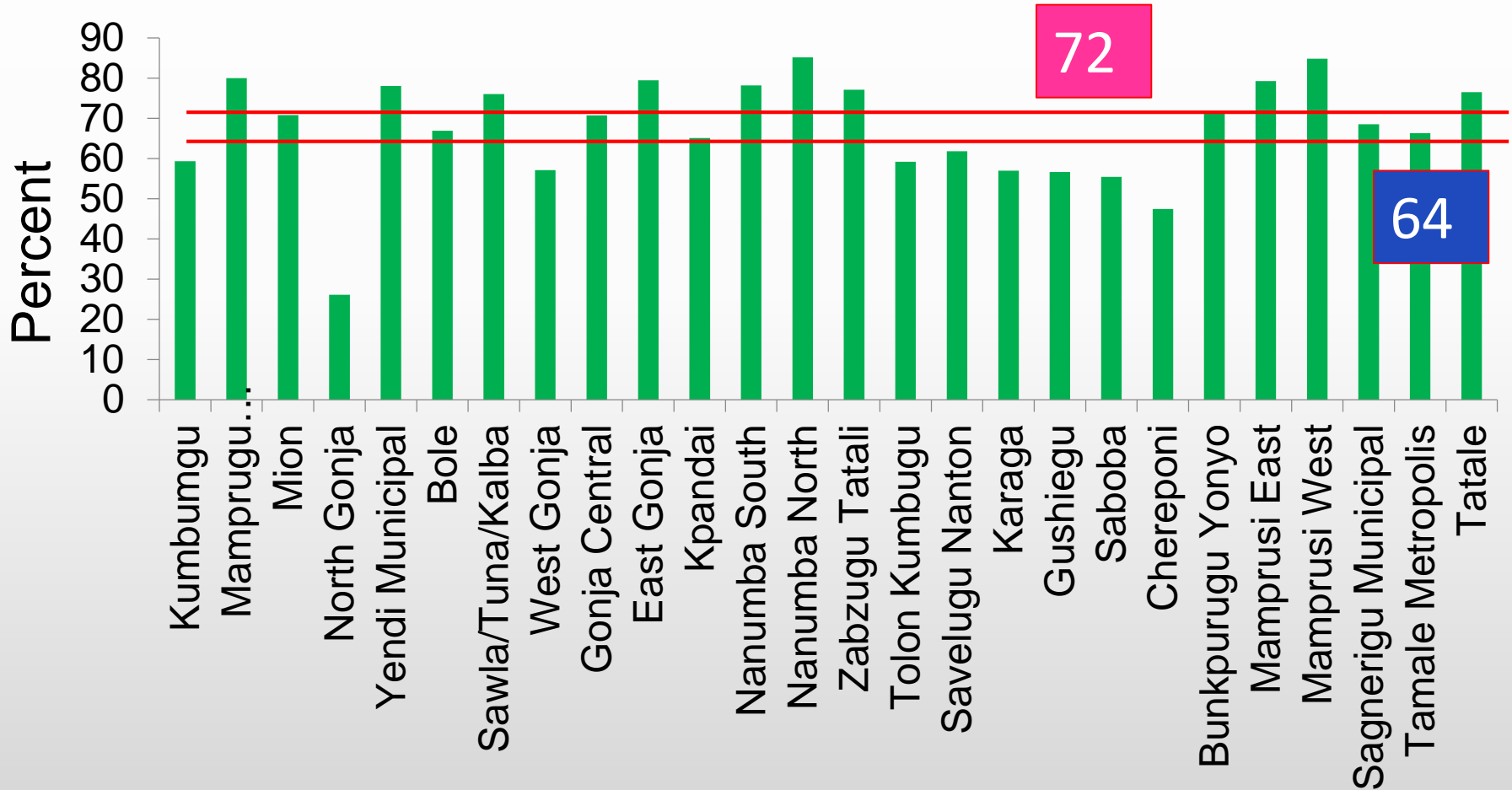
## Control over use of income



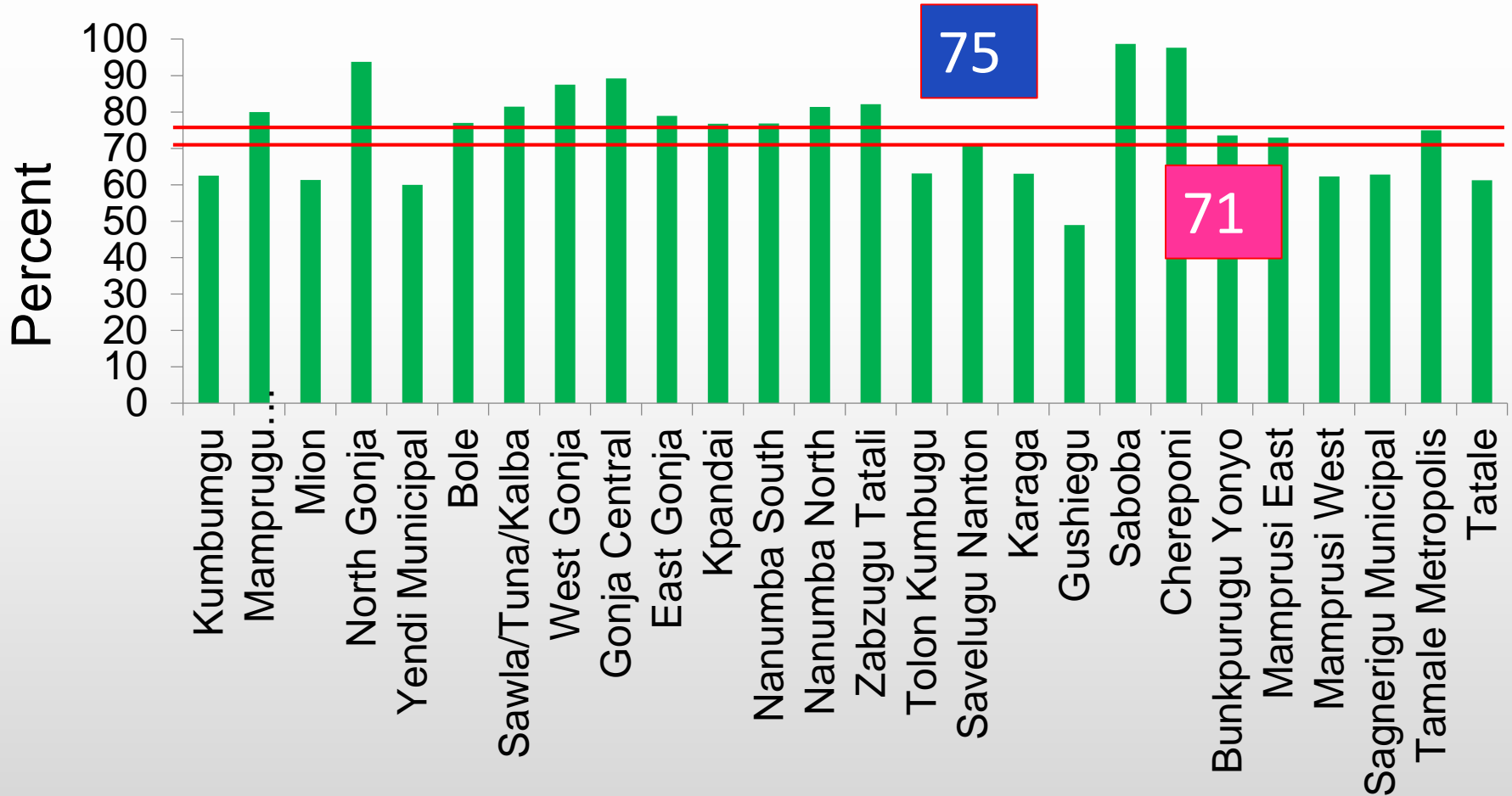
# Group Membership



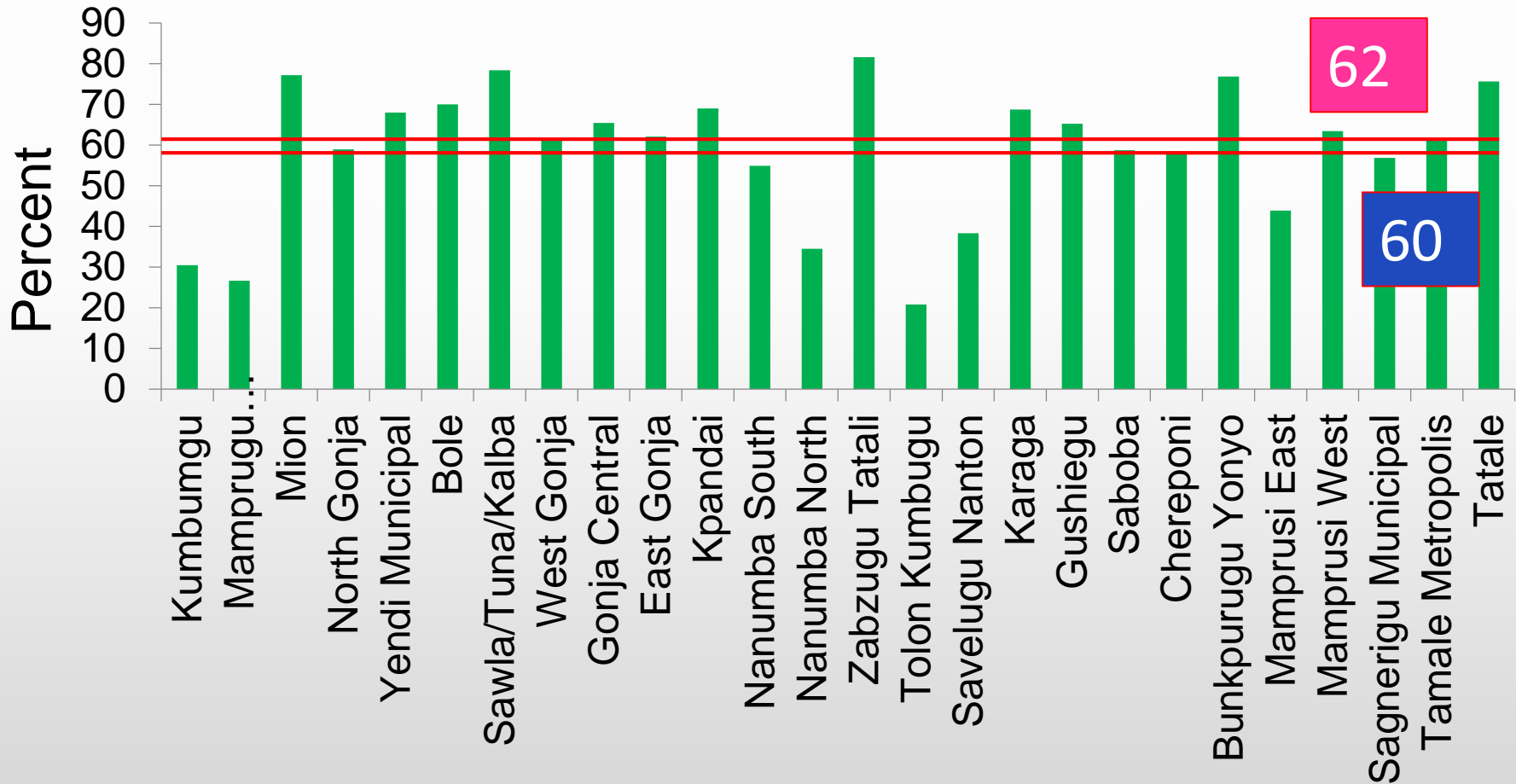
# Public Speaking



## Work Load

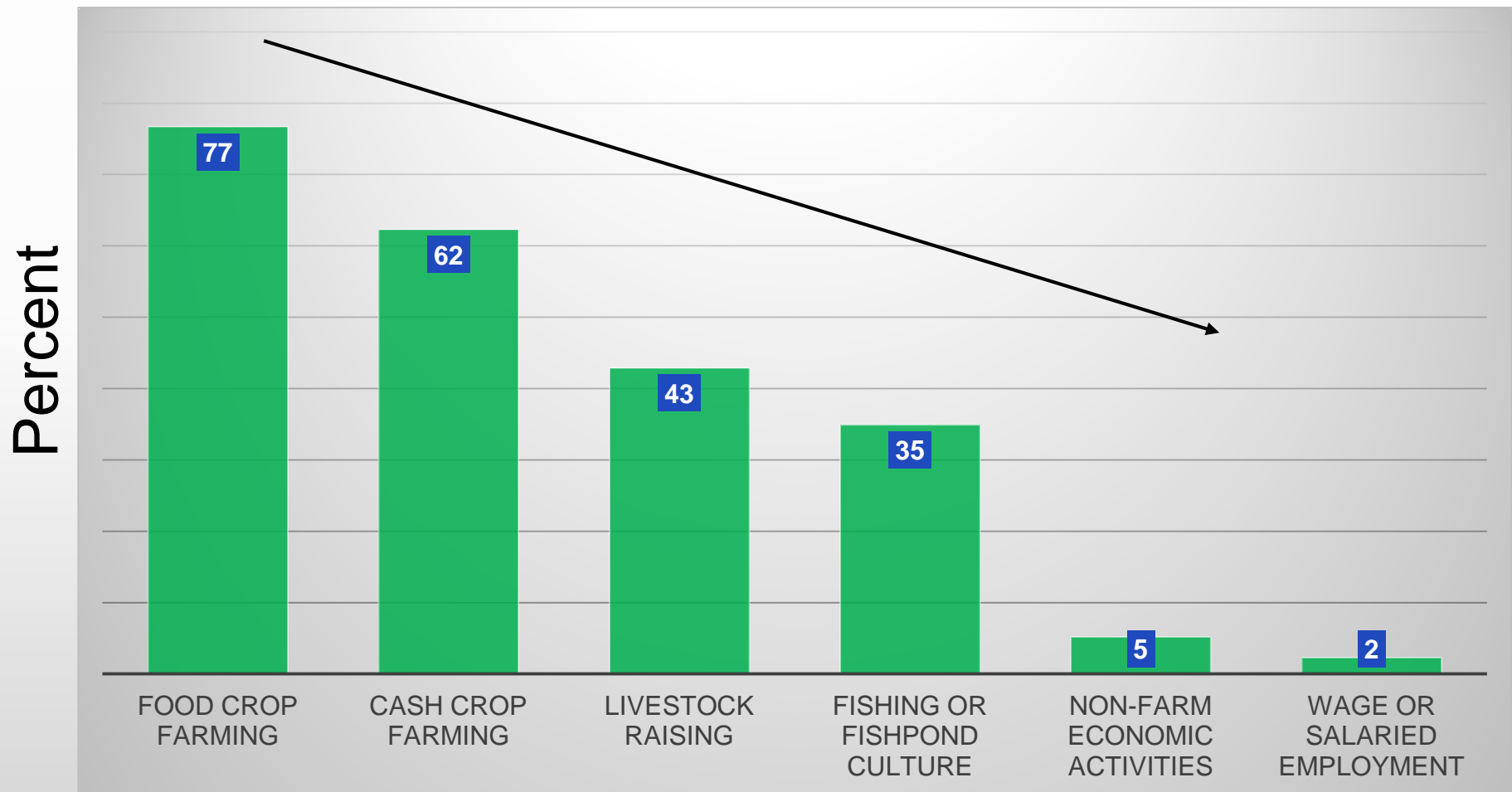


## Leisure Time

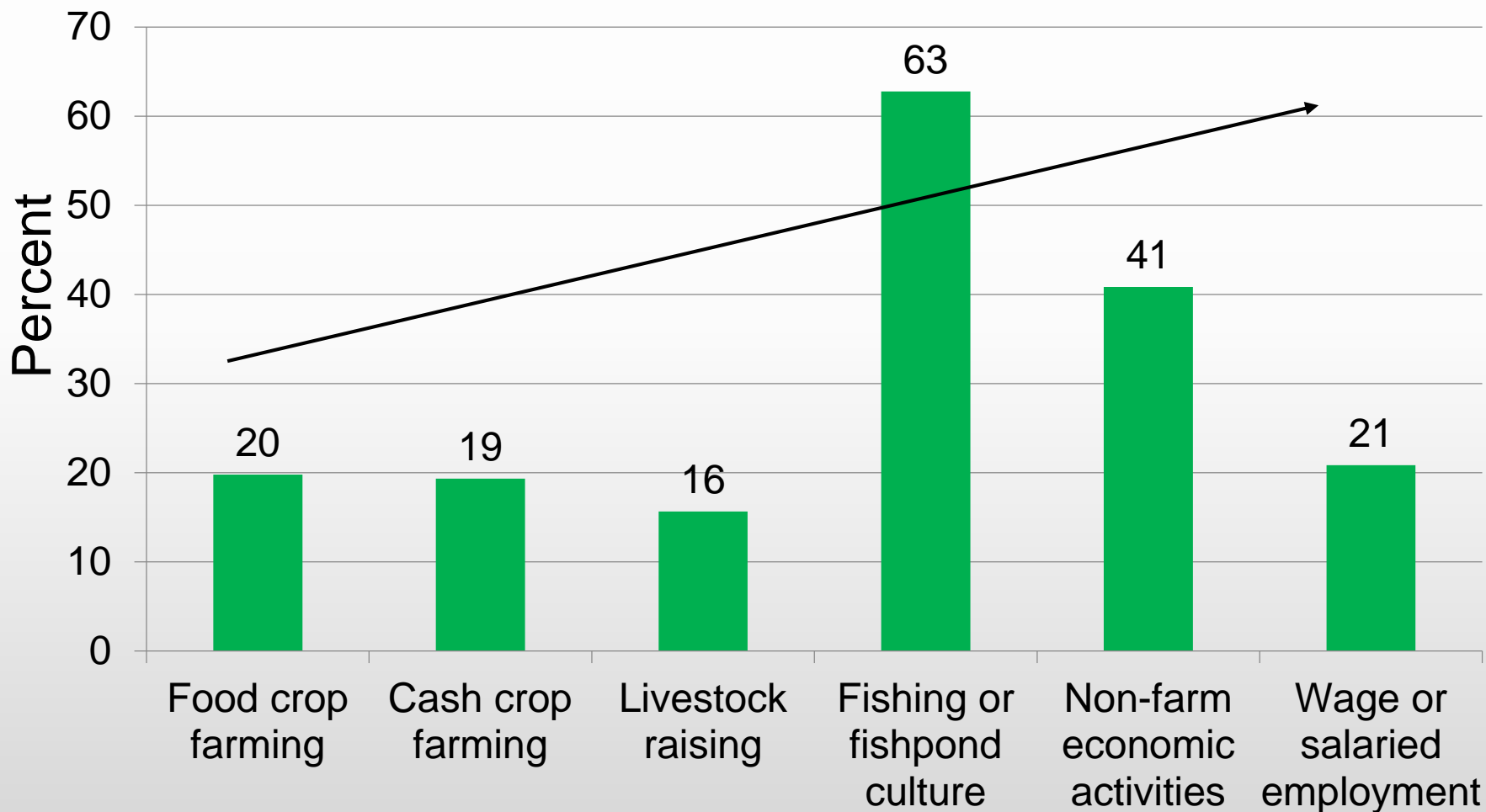




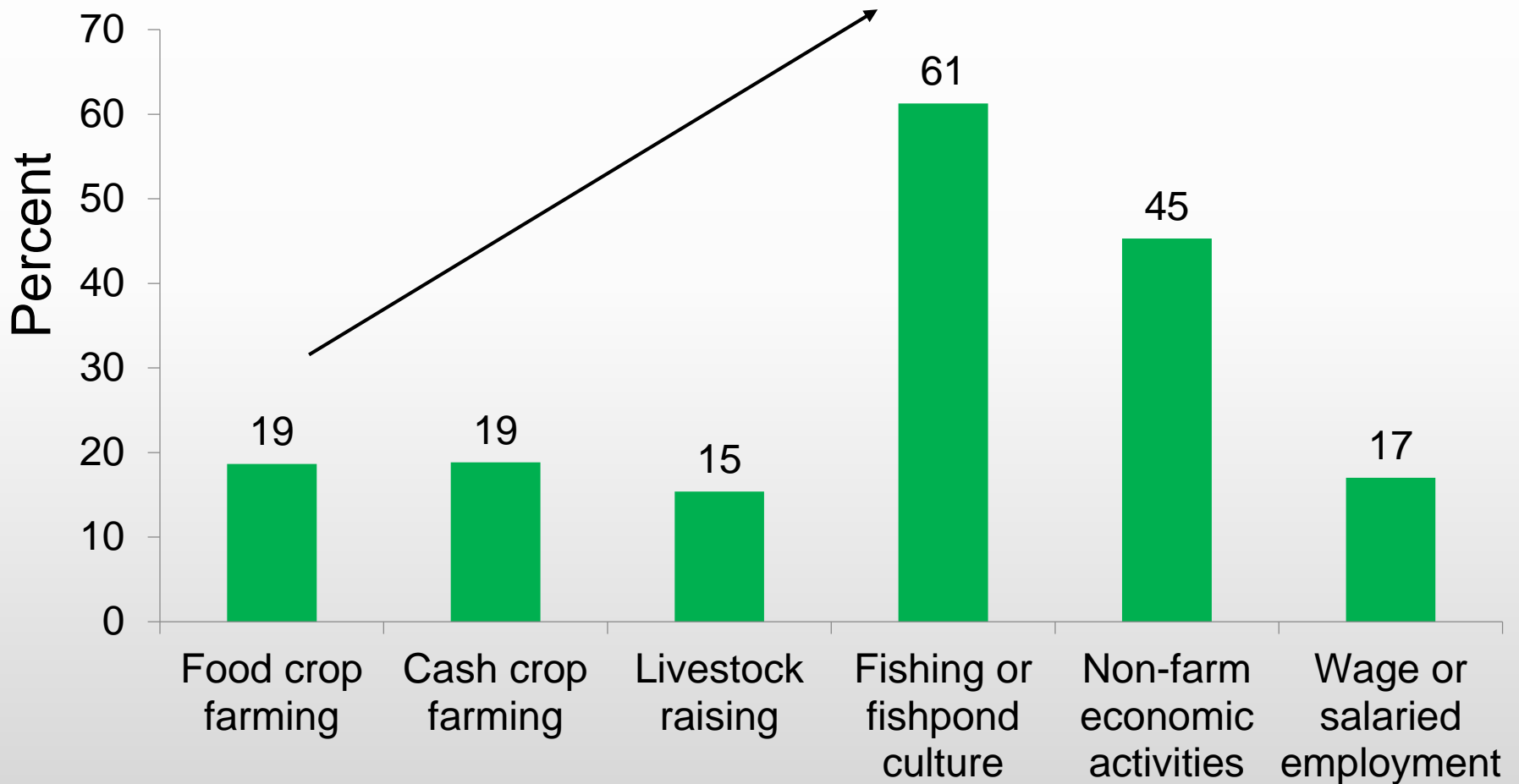
# Women's participation in an activity



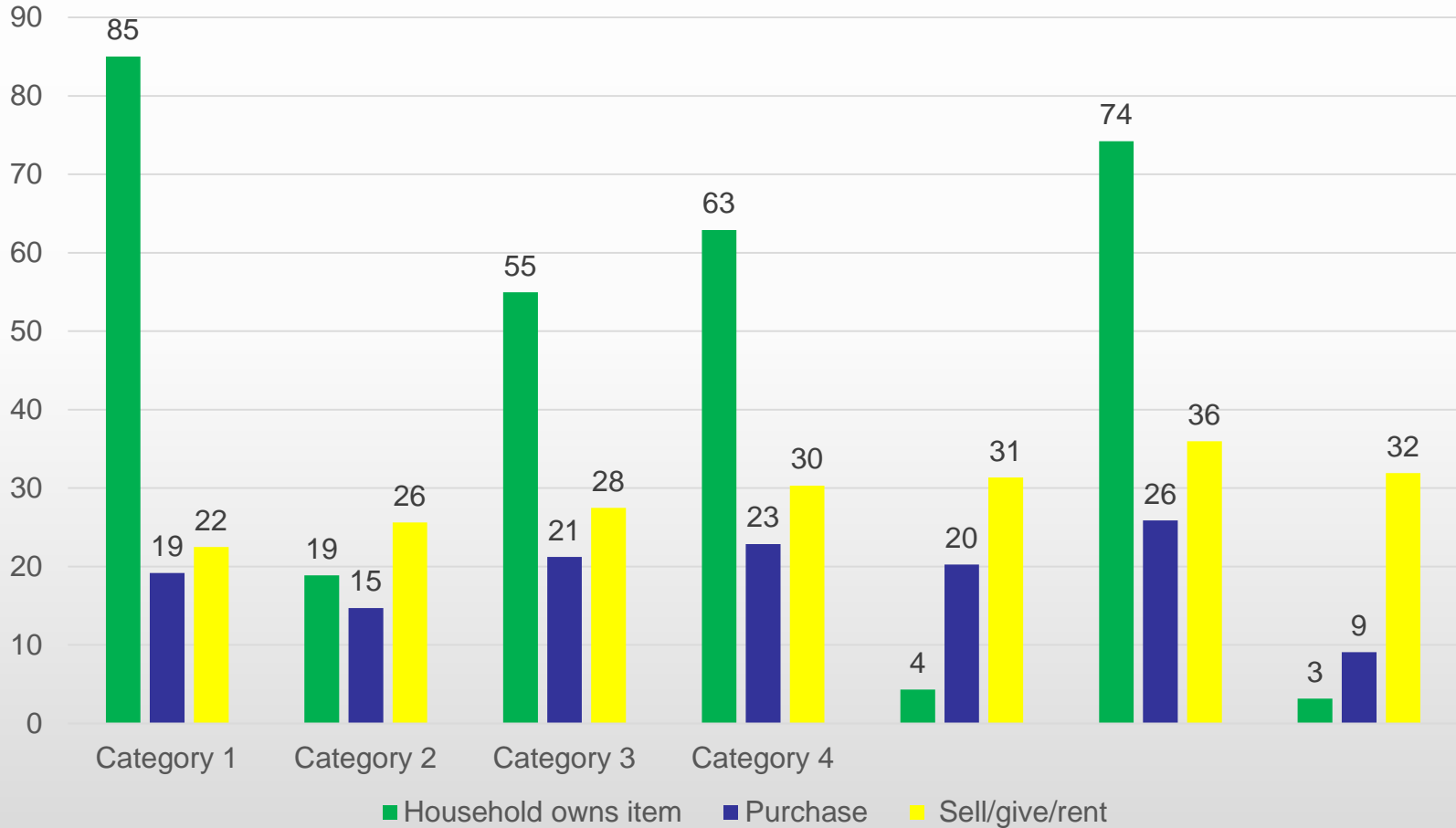
## Women's input into decisions about an activity



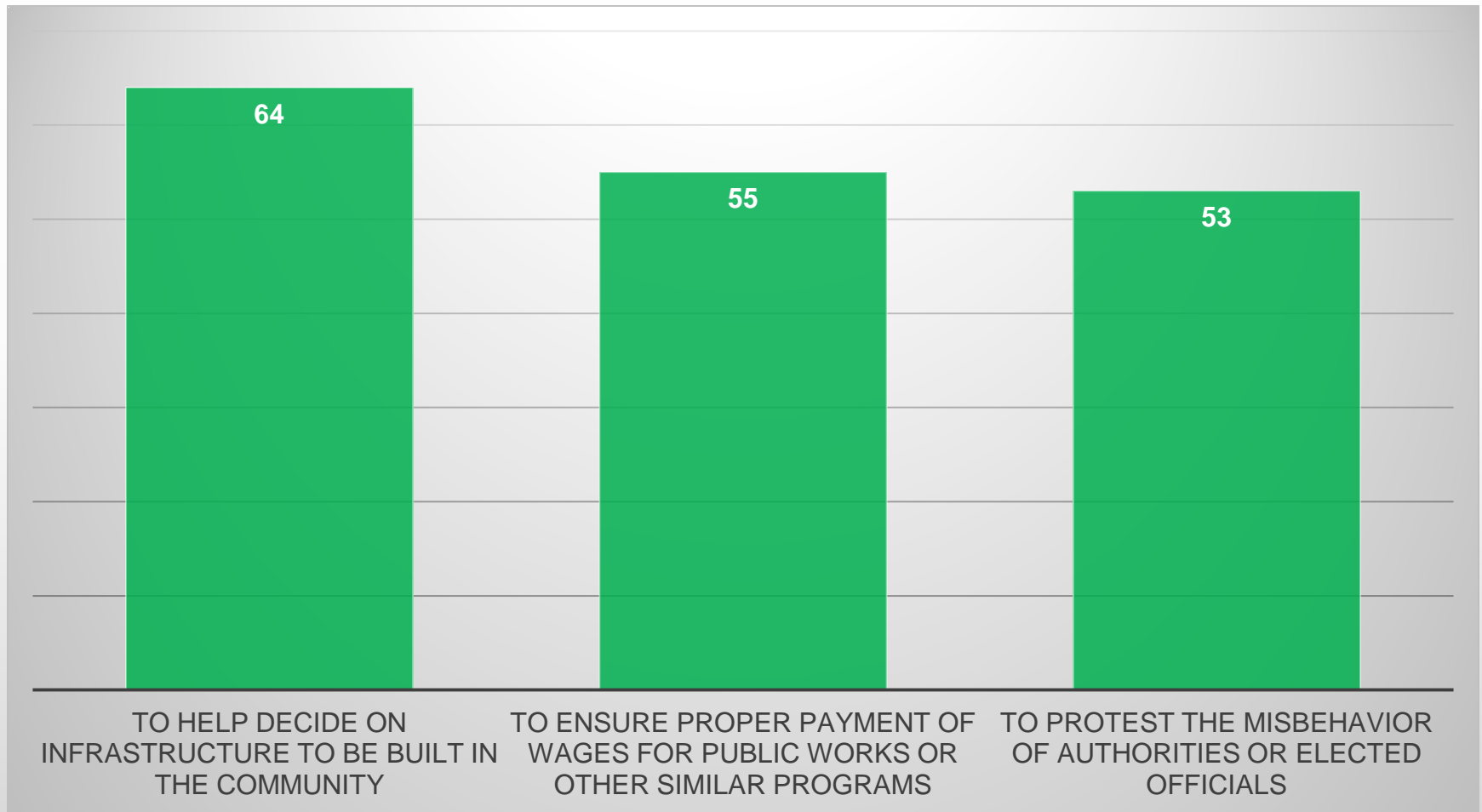
# Women's input into use of income from an activity



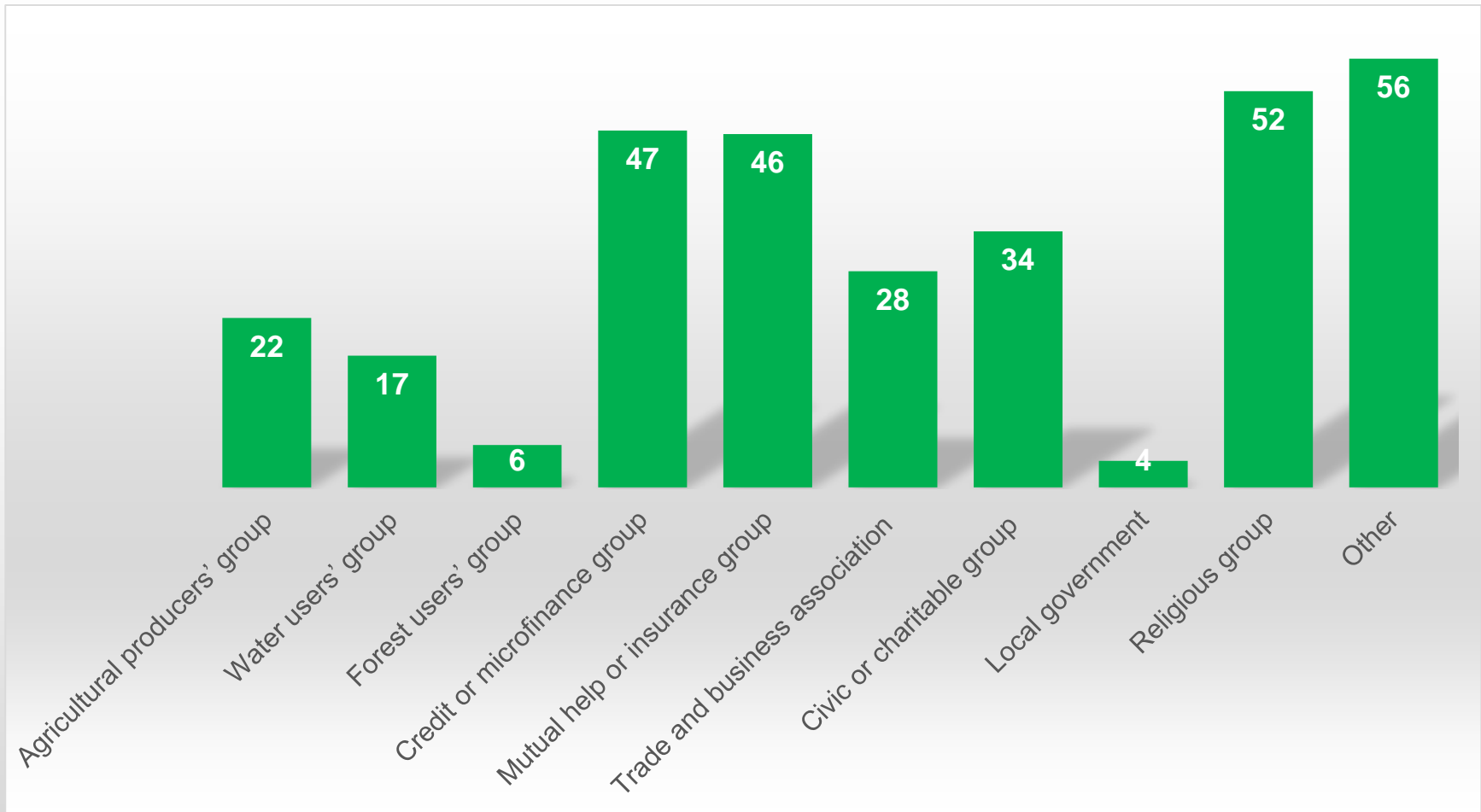
# Ownership and women's control over productive resources



# 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	6.31	Cooking	1.88
Eating and drinking	1.09	Domestic work (fetching food and water)	1.81
Personal care	0.74	Care for children/adults/elderly	1.01
School and homework	2.97	Travel and commuting	1.50
Work as employed	2.11	Watching TV/listening to radio/reading	1.39
Own business work	3.53	Exercising	0.13
Farming/livestock/fishing	3.09	Social activities and hobbies	1.68
Shopping/getting services	1.80	Religious activities	1.23
Weaving, sewing, textile care	3.26	Other	1.26

## 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: \* $p < 0.1$  \*\*  $p < 0.05$ , \*\*\* $p < 0.01$

## 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<0.0

# 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

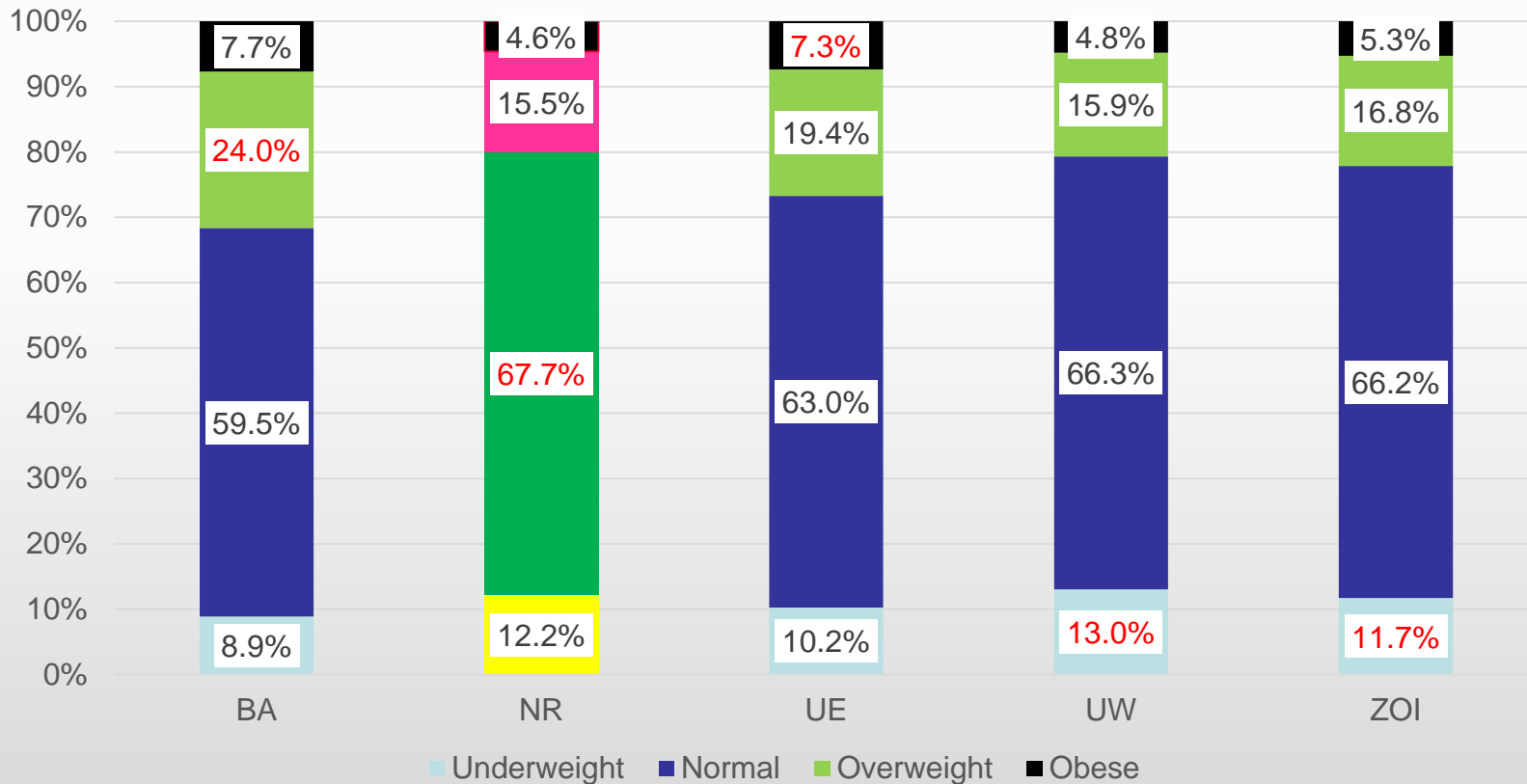
The International Classification of adult underweight, overweight and obesity according to BMI

<b>Classification</b>	<b>BMI(kg/m<sup>2</sup>)</b>
	<b>Cut-off Points</b>
<b>Underweight</b>	< 18.50
<b>Normal range</b>	18.50 - 24.99
<b>Overweight</b>	25.00 - 29.99
<b>Obese</b>	≥ 30.00

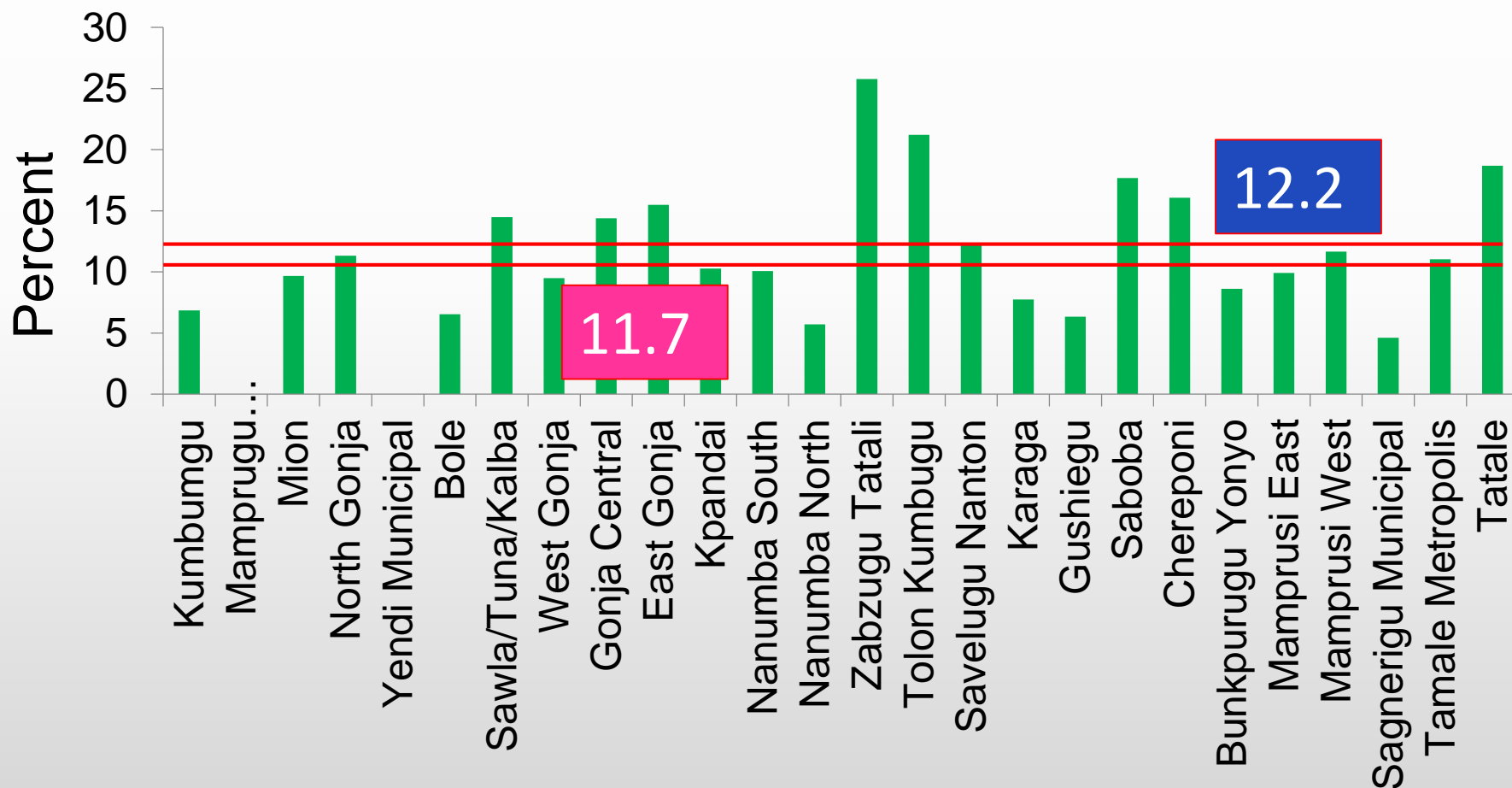
Source: Adapted from WHO, 1995, WHO, 2000 and WHO 2004.

Underweight in 2012=12%

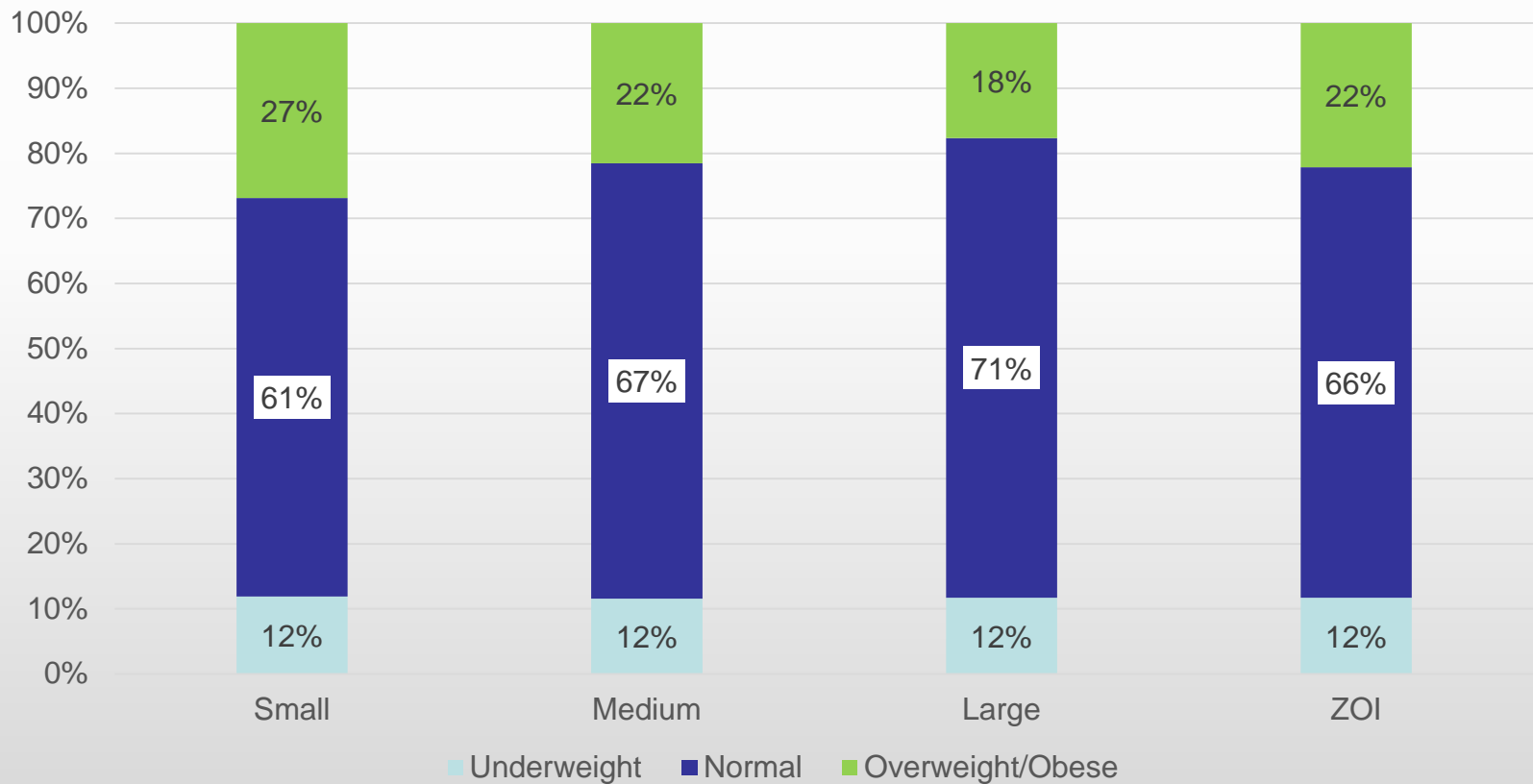
# Distribution of Women by BMI



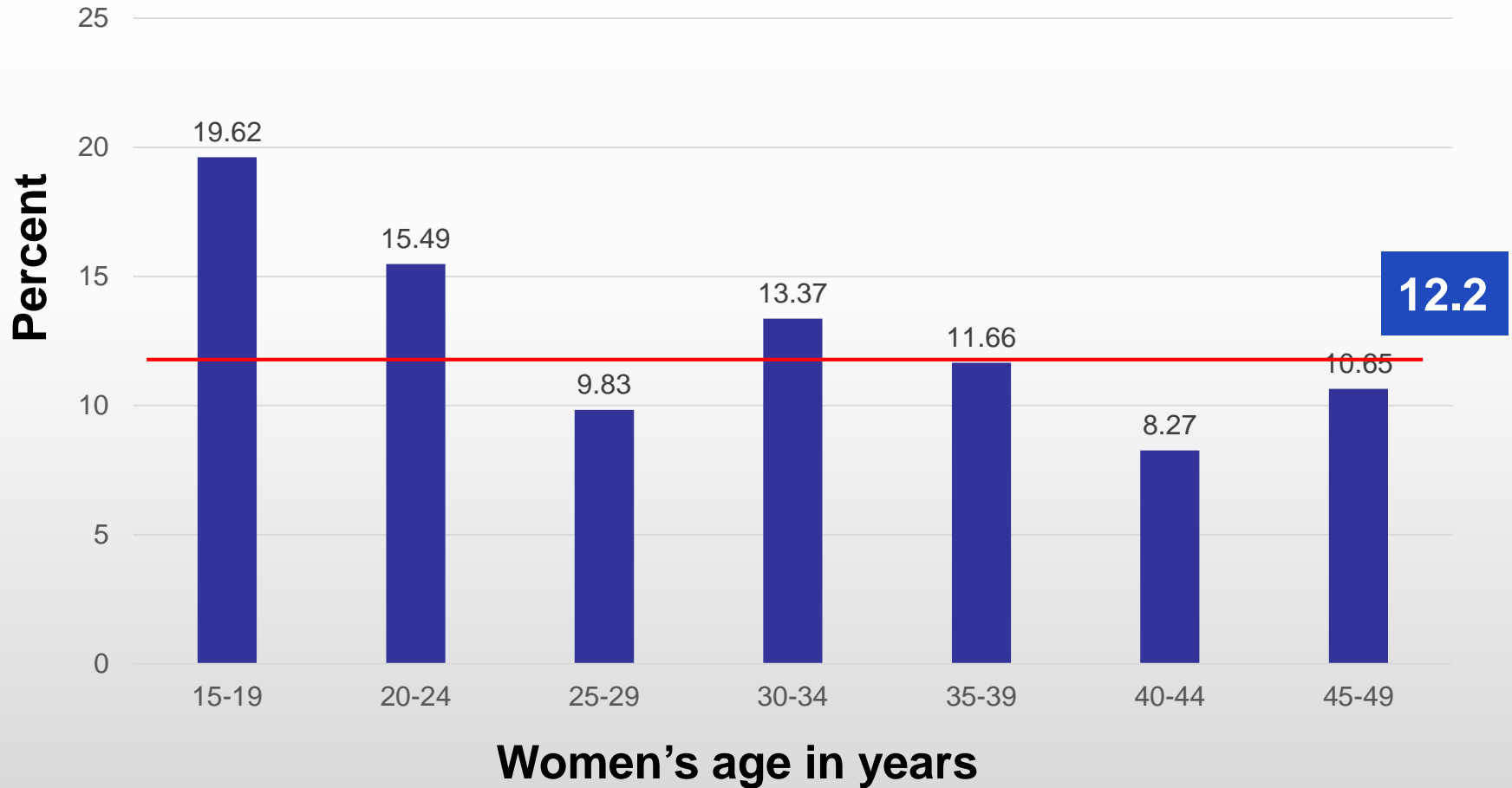
## Underweight Women by districts



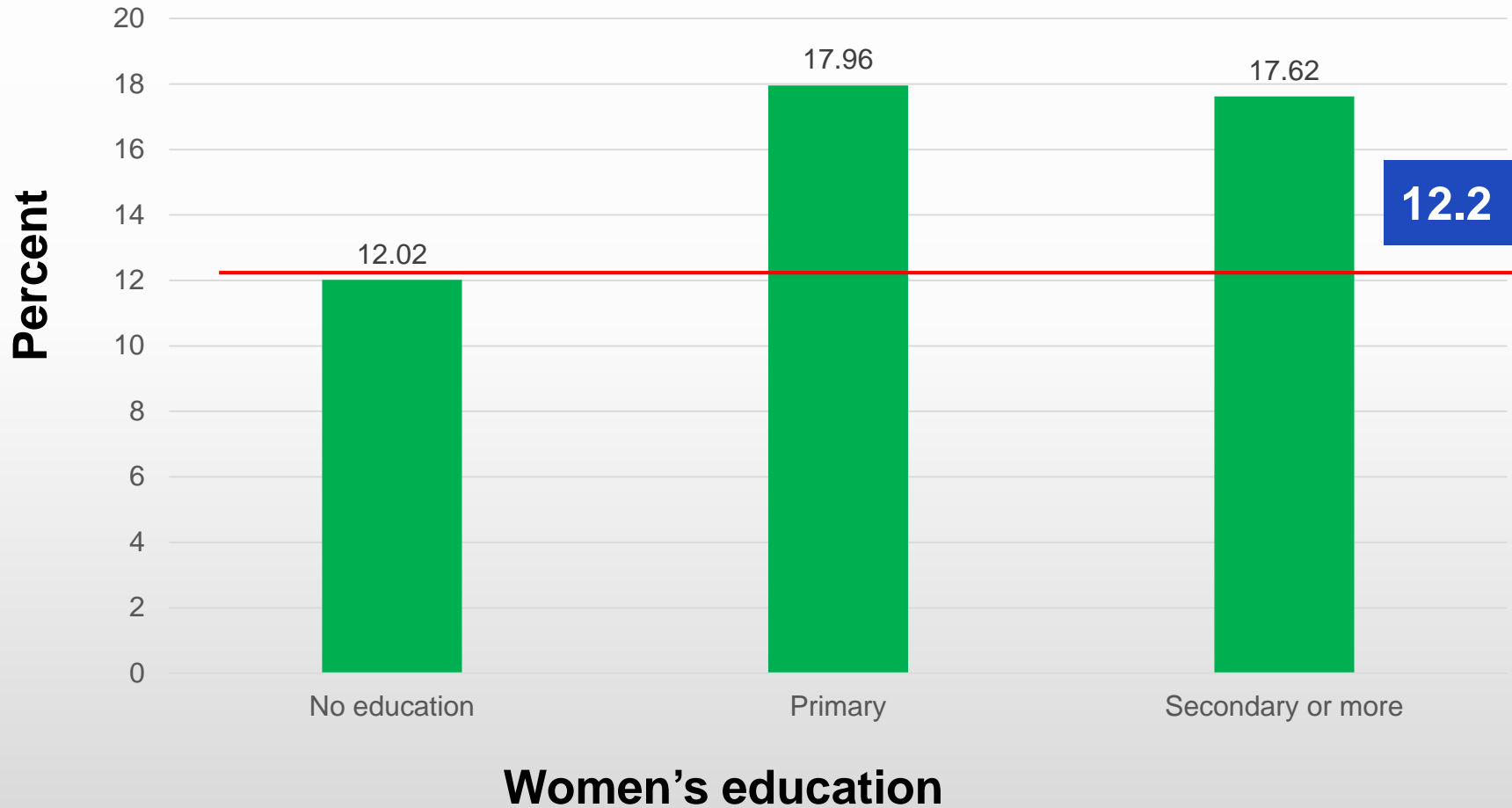
# BMI by Household Size



# 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
<b>Aggregate</b>	-0.052 (0.065)	-0.030 (0.047)	-0.038 (0.042)	0.537*** (0.165)
<b>Resources</b>	-0.033 (0.035)	-0.011 (0.008) <sup>OLS</sup>	-0.040 (0.026)	0.131* (0.074) <sup>OLS</sup>
<b>Time</b>	0.037 (0.024) <sup>OLS</sup>	-0.130** (0.054)	-0.026 (0.043)	0.123* (0.069) <sup>OLS</sup>
<b>Production</b>	-0.033 (0.047)	0.009 (0.006) <sup>OLS</sup>	-0.028 (0.022)	0.405*** (0.156)
<b>Income</b>	0.003 (0.033)	-0.017 (0.033)	0.006 (0.006) <sup>OLS</sup>	0.217*** (0.068)
<b>Leadership</b>	-0.042 (0.055)	0.001 (0.007) <sup>OLS</sup>	-0.002 (0.010) <sup>OLS</sup>	0.300* (0.160)



# Thanks