Gender, Agriculture, and the Environment: From "Zombie Facts" to Evidence

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With thanks to Sophie Theis, Cheryl Doss, Agnes Quisumbing

Can you spot the zombie?

1. 70% of the world's poor are women
2. Women produce 60-80% of the food
3. Women own 2% of the land
4. Women are intrinsically better stewards of the environment

These zombies may be tempting, but…

- These statistics are continually referenced to make the case that women deserve more recognition and investment than they currently receive
- But they are not based on credible (or any) sources!
- This is a problem because they:
  - treat women as a monolithic group
  - disguise significant regional variation
  - leave out important conceptual nuances
- If we keep using them, gender work will eventually be discredited
- We don’t actually need to rely on these statistics: there are better data out there, as well as better questions to be asking

Women comprise 70 percent of the world's poorest people and own only 1 percent of the titled land, according to a U.N. report. They suffer not only from unequal access to education and training, but also from discrimination by their employers. The majority of women earn on average about three-fourths of the pay that men receive for doing the same work, outside of the agricultural sector, in both developed and developing countries.

1. 70% of the world's poor are women

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- **Kernel of truth:** Women face broad economic exclusion, especially as single heads of households, and even within the household may have less access to resources than men

- **Problems with this assertion:**

i. Is this demographically possible?
ii. Ignores sharing of resources within household
iii. Official poverty statistics are at the household, not individual level

i. Demographically plausible…or possible?

- Women? What about children?
- Main explanation given is the occurrence of **poor, female-headed households** (caused by excess male mortality and outmigration), which contain significantly more female than male members (Marcoux 1998)
- But female-headed households are less common; there are at least twice as many male-headed households in poverty

TABLE 1 Estimated number of female-headed households by major region, 1993

Region	(a) Population 1993 (millions)	(b) Average household size	(c) Millions of households = (a) ÷ (b)	(d) Proportion of households female-headed	(e) Female-headed households (millions) = (c) x (d)
North Africa	151.7	5.7	26.6	0.13	3.5
Su					
Ea					
So					
So					
W					
La					
Ca					
O					
D					
D					
World	5527.5	(4.1)	1347.7	(0.19)	257.7

TABLE 3 Estimated number of poor and non-poor, male-headed and female-headed households, 1993 (in millions)

Households	Male-headed households	Female-headed households	Total
Poor	183	92	275
Non-poor	828	245	1073
Total	1011	337	1348

NOTES: For estimating procedure see discussion in text.

SOURCES: (a) United Nations 1996b; (b) United Nations 1995a, MacKellar et al. 1995; (d) United Nations 1995a (subregional figures are either as published in the source cited or calculated from country data presented therein).

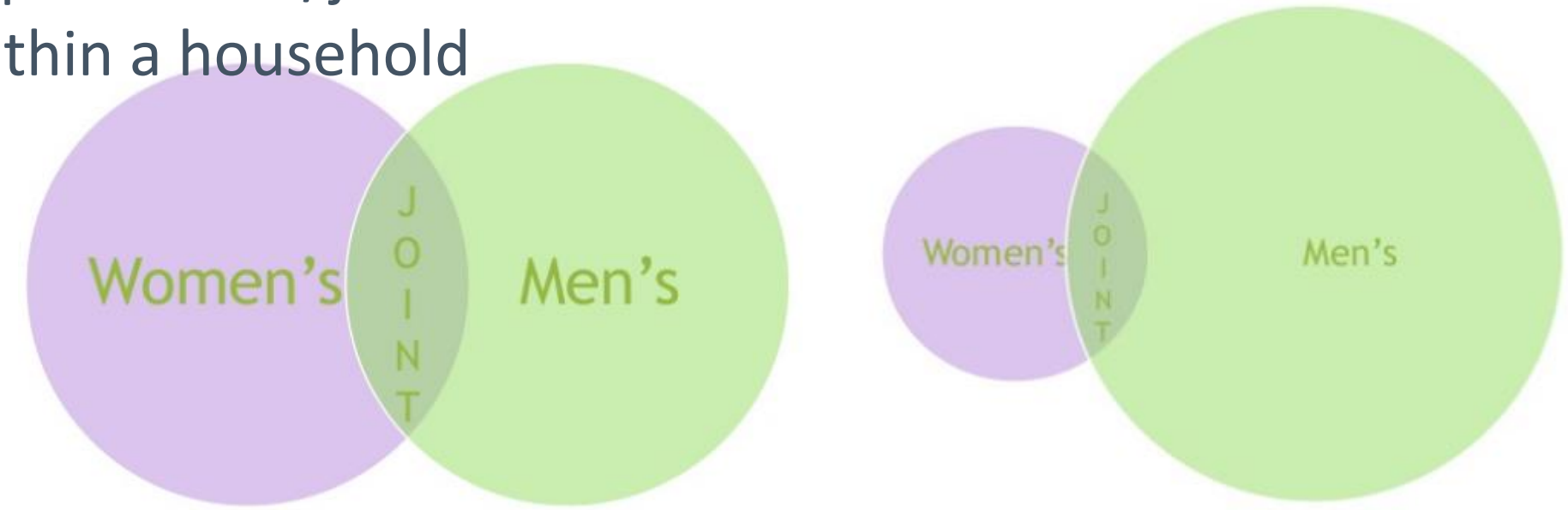
Source: Marcoux 1998

Even though 70% figure is not plausible, this does not mean bias does not exist, or is not growing

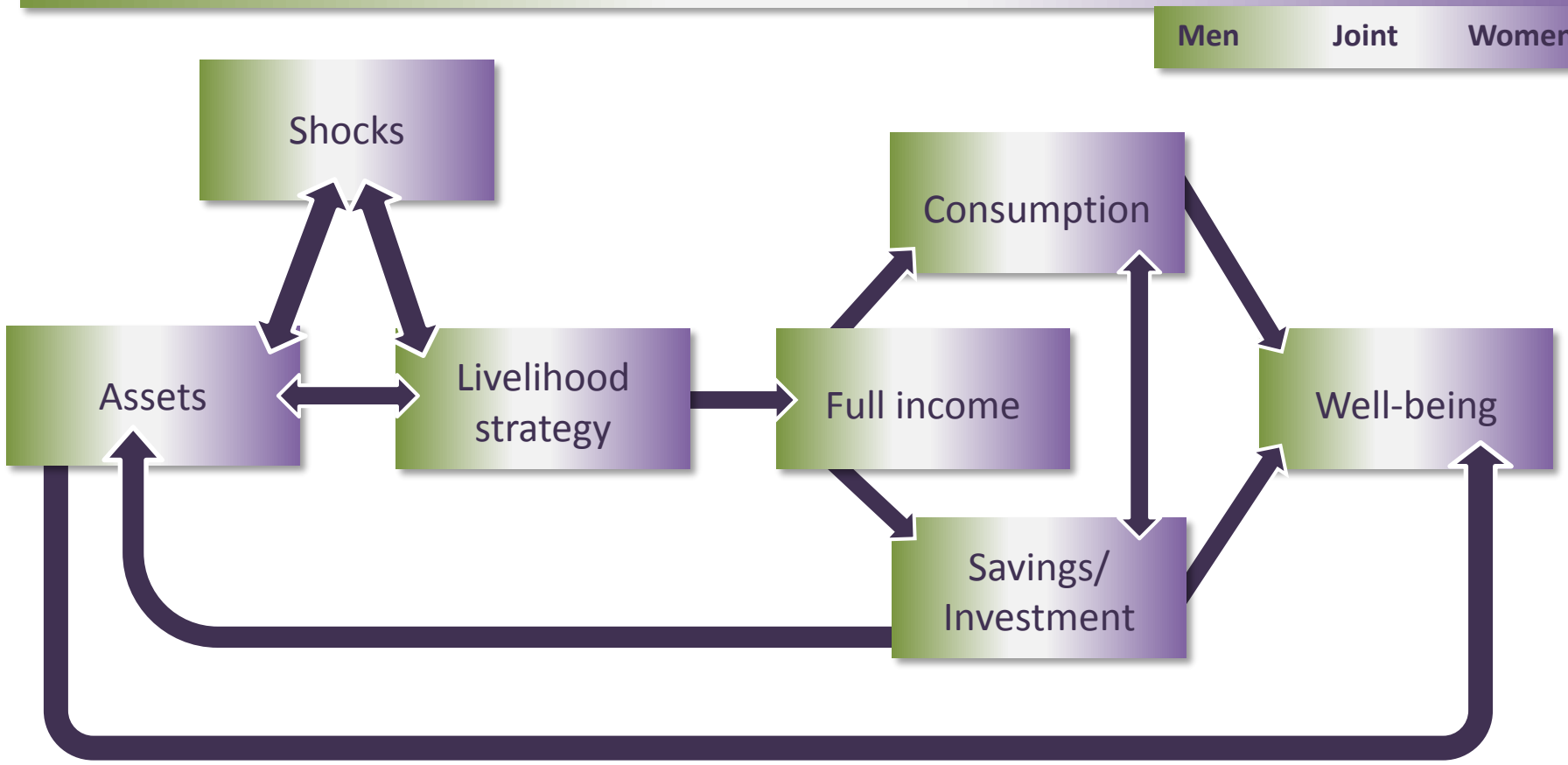
- **Male outmigration** is increasing the number of female heads of household in some parts of the world (Lastarria-Cornhiel 2006, Deere 2005), but "**feminization of migration**" is also increasing (Beneria, Deere, & Kabeer 2012)
- Other measures of poverty besides income may pick up other inequities:
  - e.g. mortality, education, health and nutrition, time allocation
  - Unequal access and control over assets within a household

ii. Ignores sharing of resources within household

- Yes, there is unequal sharing of resources within a household
- Yes, we should move away from the unitary household model
- However, keep in mind that there are different degrees of separateness/jointness in access to and control over assets within a household



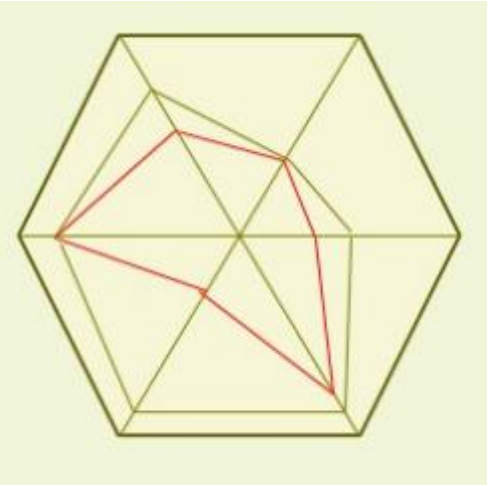
Context: Ecological, social, economic, and political factors



Source: GAAP Conceptual Framework

Women are not 70% of the world's poor, but there are ways to measure intrahousehold disparities

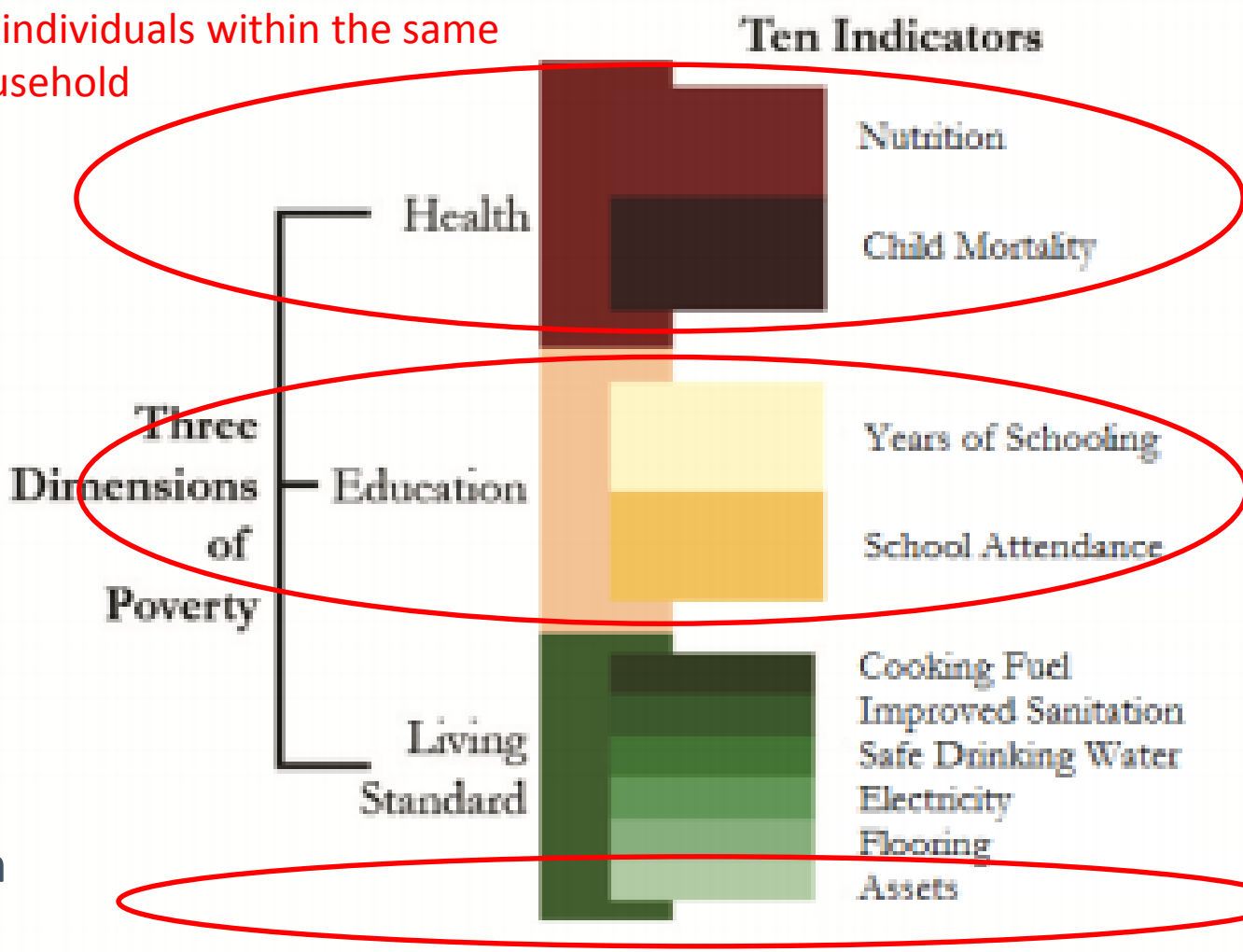
- **Gender Asset Gap Project:**
  - There *are* ways of measuring asset ownership (joint, sole) and the bundle of rights associated with an asset, including input into decisions of use, to sell, etc.
  - There are a number of gender gaps: Women and men own different assets, total value of assets, and number of assets
- **Gender, Agriculture, and Assets Project (GAAP)**
  - Different kinds of assets/capital (natural, physical, financial, human, social, political) are critical to well-being because they generate services, goods, and income, and provide resilience to shocks
  - Helps complete picture of poverty and well-being better than just income or consumption
  - Use, control, and ownership over assets is gendered and affects men and women's ability to participate in and benefit from agricultural/development programs



iii. Poverty statistics are at the household, not individual level

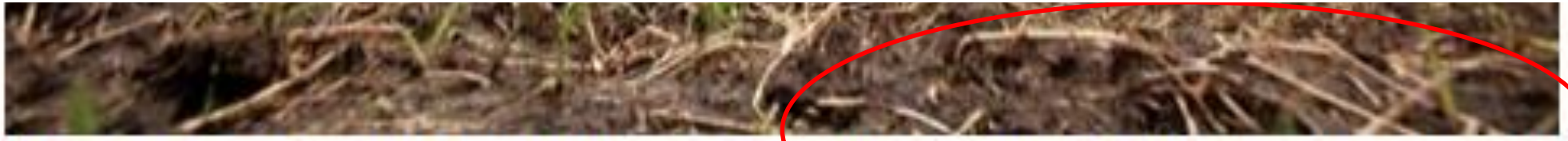
- Multidimensional Poverty:
  - Incorporates health, education, living standard, income, empowerment, quality of work, and threat from violence – all important aspects of deprivation not captured or correlated with income
  - Depending on survey/census data, can be decomposed by gender
  - Can account for shared and individual indicators of poverty
- Multidimensional welfare deprivation:
  - Employment drives gender inequality in Burkina Faso; assets, access to credit, employment in Togo (Agbodji, Batnaa, & Ouedraogo 2013)

Dimensions of poverty that can differ for individuals within the same household



Source: OPHI MPI Brochure 2015

2. Women produce 60-80% of the food



Maize field in Malawi: Women account for 70 per cent of Africa's food production, but often do not have secure access to land.

Women, agriculture and food security

"Women produce between 60 and 80 percent of the food in most developing countries and are responsible for half of the world's food production."(FAO, 1997)


Women perform 66% of the work
produce 50% of the food
but earn only 10% of the income
and own 1% of the property.
WE CAN CHANGE THIS.
OXFAM
Source: UNDP / Photo: Simon Rawles/Oxfam

2. Women produce 60-80% of the food

- **Kernel of truth:** Women are important producers of food and deserve more recognition and investment in agriculture.

- **Issues with this assertion:**

i. How do you deal with joint agricultural production?

ii. What constitutes “labor” or work in agriculture?

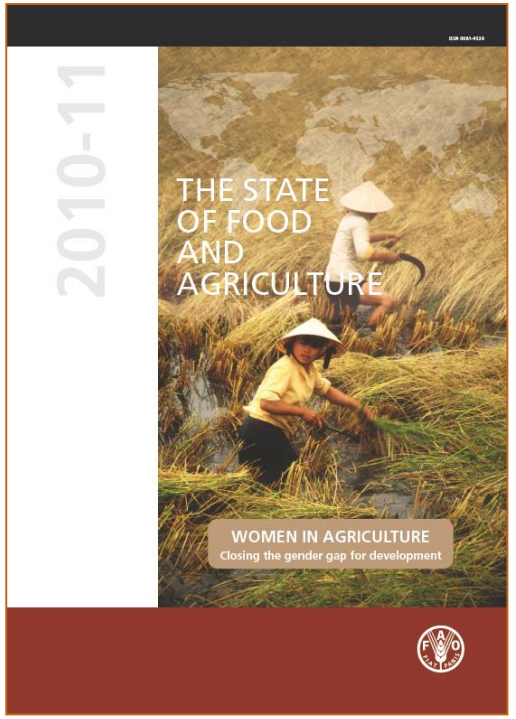
iii. If women produce 60-80% of the food with 43% of the labor AND fewer other resources, they are miracle workers!

Precise measure of women's contribution to food production is impossible

- Yes, there are sometimes "women's crops" and "men's crops" on separate plots of land
- Yes, agricultural labor is often segregated by gender
- But most of the time, women do not produce food separately from men, so neither labor nor food output can be disaggregated
  - If man plows, woman weeds, both harvest, and woman sells, who produced what?

Women's agricultural labor *is* often undercounted

- Commonly cited FAO data on economically active population in agriculture says 42.2% of agricultural labor force are women worldwide.
  - Sub-Saharan Africa still less than 50%. LAC is 16%!
- Is the data accurate?
  - Do social norms influence how women smallholder farmers respond to primary occupation question?
  - Women's agricultural contributions often not counted at all (e.g. small livestock, kitchen gardens, post-harvest processing)



How much *time* do women spend in ag labor?

- What is considered agricultural labor?
  - Work in own fields?
  - Homestead gardens?
  - Care for livestock (fetching fodder, milking, etc.)?
  - Off-farm post-harvest processing?

  Domestic work is often under-recognized but important part of household livelihood

Average time use by gender in 5 countries

Table 3.2 Average time men and women spent in the past 24 hours by activity (in minutes)

Activity	Bangladesh			Cambodia			Ghana			Mozambique			Nepal		
	Men	Women	T-test	Men	Women	T-test	Men	Women	T-test	Men	Women	T-test	Men	Women	T-test
Total work (reproductive and productive)	566.4	521.5	***	420.6	535.0	***	504.1	580.4	***	352.0	455.8	***	490.5	652.8	***
Reproductive work	162.6	484.4	***	64.6	259.3	***	18.6	283.1	***	28.1	238.3	***	106.4	381.0	***
Domestic work[a]	119.0	273.0	***	41.5	76.8	***	6.5	114.2	***	17.5	95.4	***	53.9	246.3	***
Cooking	1.9	157.5	***	5.9	86.0	***	5.1	126.0	***	3.0	103.0	***	n/a	n/a	
Caregiving	10.7	55.7	***	11.4	80.1	***	2.3	35.0	***	4.1	32.6	***	52.6	134.8	***
Productive work	403.7	37.1	***	356.0	275.7	***	485.4	297.3	***	323.9	217.6	***	384.1	271.7	***
Agriculture	98.7	5.5	***	283.8	195.5	***	383.8	213.4	***	242.3	205.4	***	269.5	251.7	***
Nonagriculture[b]	305.1	31.7	***	72.3	80.2		105.3	87.7	***	81.6	12.16	***	114.6	20.0	***

Sources: Authors' calculations using data from Bangladesh Integrated Household Survey (2011) for Bangladesh; Feed the Future surveys for Cambodia (2012), Ghana (2012), and Mozambique (2012–2013); and baseline survey of Suaahara project for Nepal (2012).

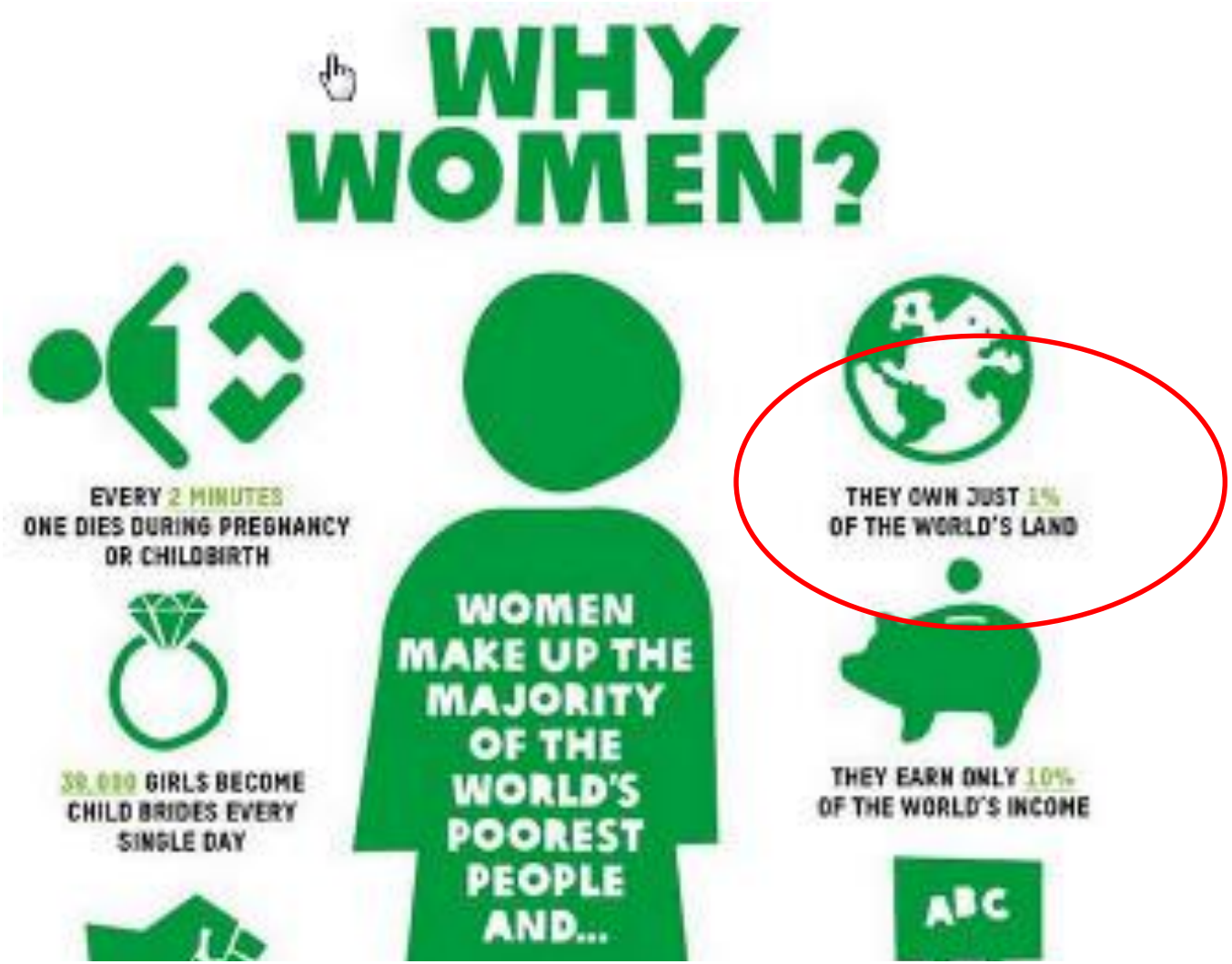
Notes: *** 1 percent significant, ** 5 percent significant, * 10 percent significant. [a] For Nepal, domestic work includes cooking and shopping. For Bangladesh, domestic work includes off-farm agricultural activities. [b] For Bangladesh, nonagricultural work includes livestock raising. n/a indicates that the data were not available.

Source: Komatsu, Malapit, & Theis 2015

There are better ways of measuring and recognizing women's contributions and constraints to rural livelihoods

- Though men and women have differentiated roles in agriculture and rural livelihoods, more often than not, they work together
- Still, it is important to recognize their different roles and constraints to production, including time and assets
- Rather than focusing on women's (independent) contribution to agriculture, recognize the importance of agriculture to women's livelihoods

Cheryl Doss. 2010. If women hold up half the sky, how much of the world's food do they produce? http://www.fao.org/3/a-am309e.pdf



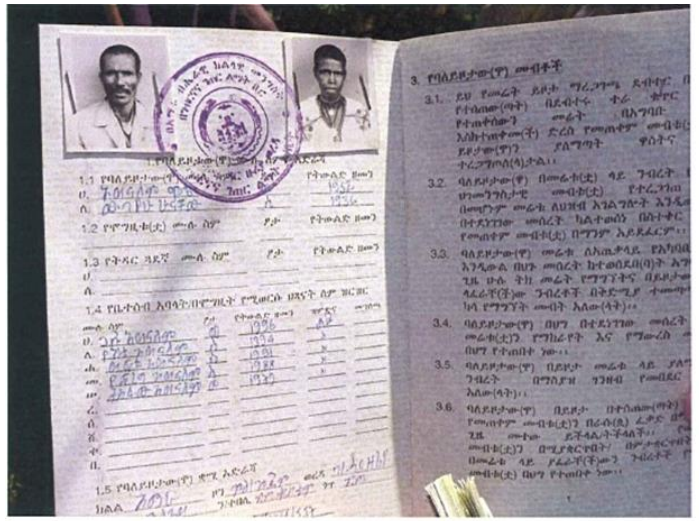
3. Women own 1-2% of the land

3. Women own 2% of the land

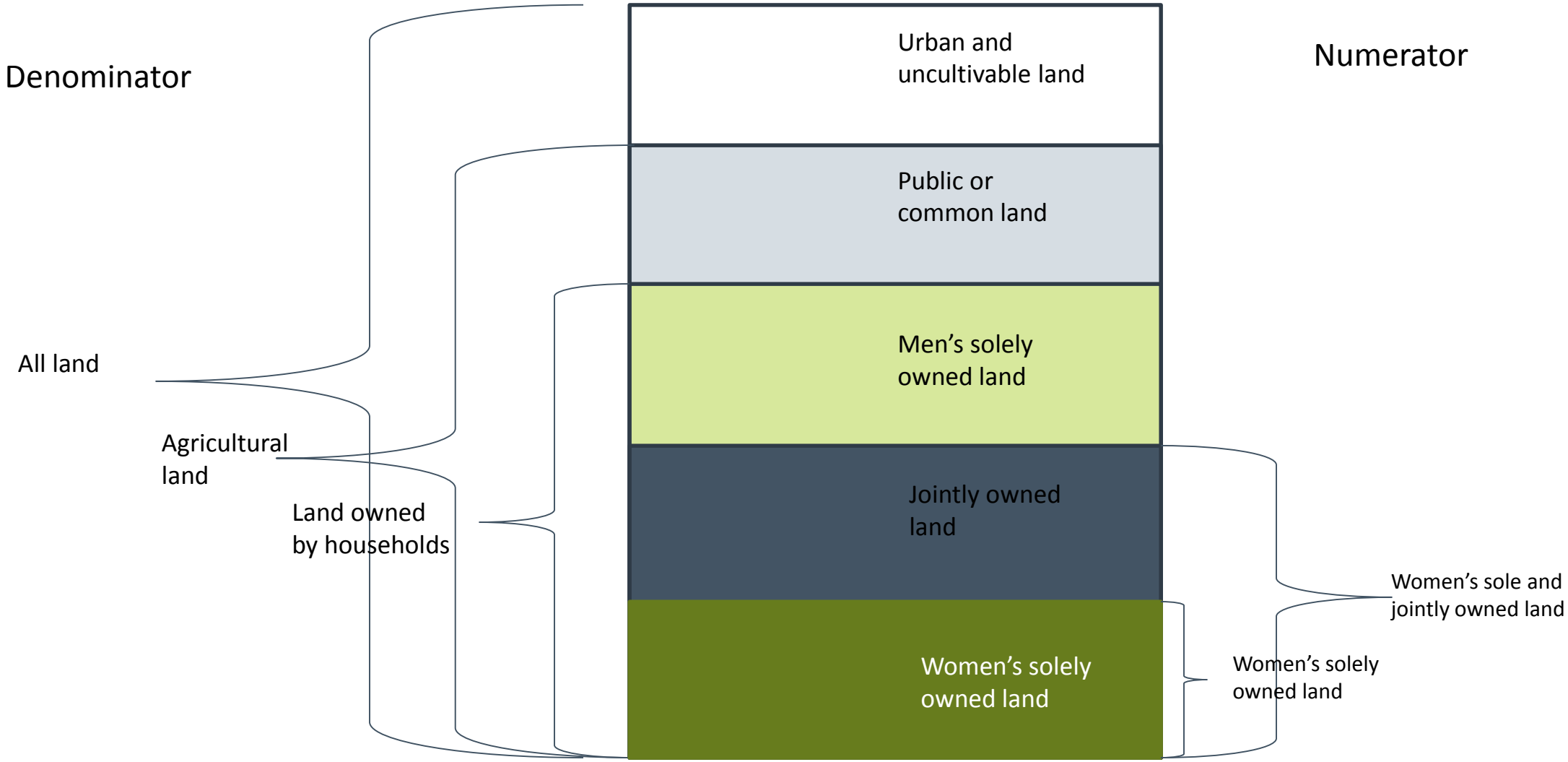
- **Kernel of truth:** patriarchal gender norms prohibit or make it difficult for women to purchase, inherit, or defend ownership of land

- **Issues with this assertion:**

1. How do you define ownership?
2. No data to support this figure



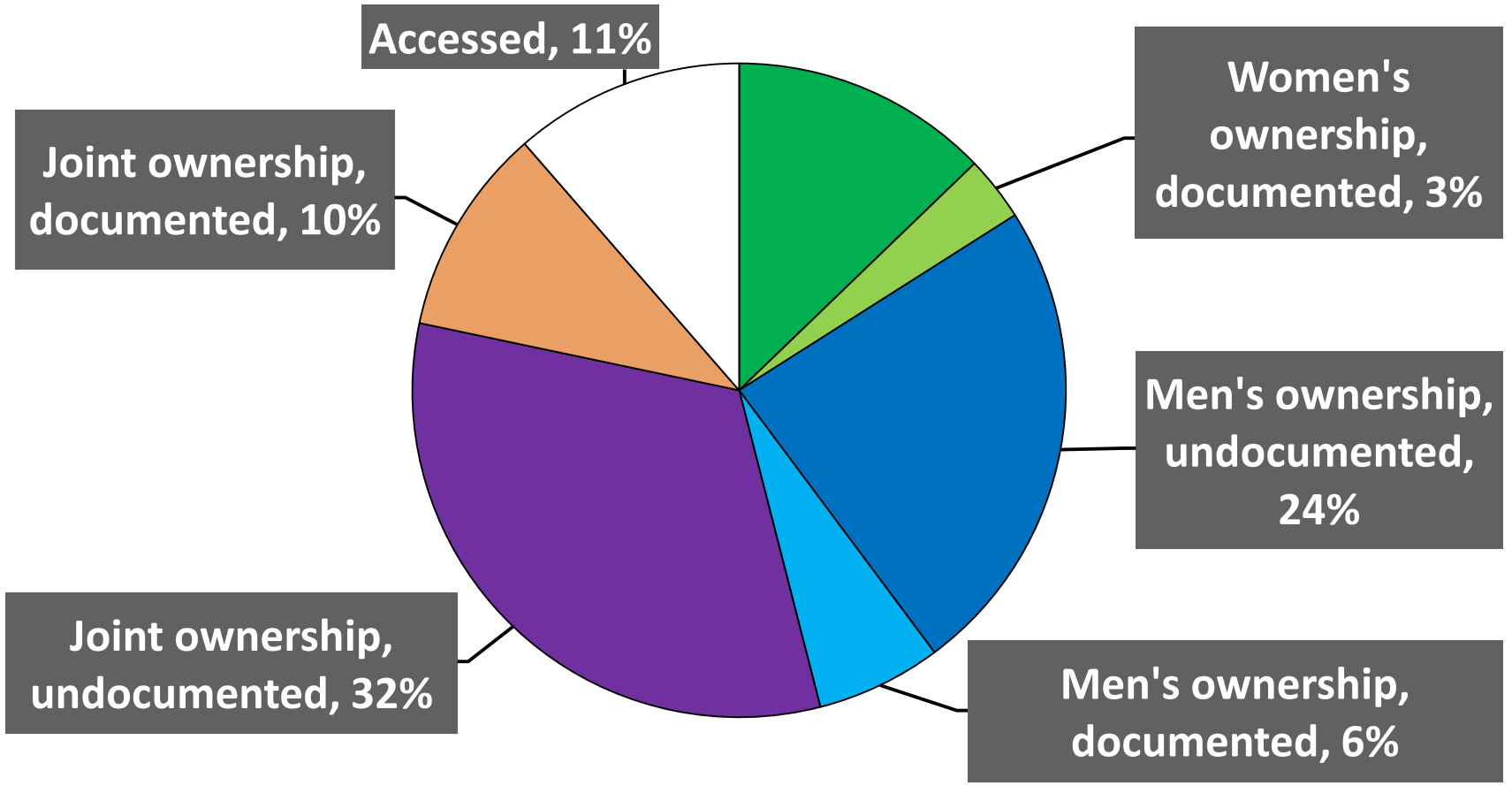
What do we mean by % land owned by women?



Despite challenges defining ownership, there are major gender gaps in land tenure

- Ownership can be defined differently, and means different things in different contexts.
  - Does it entail formalization, documentation (e.g. name on title), right to sell, use rights (e.g. what is grown)?
  - If you ask for self-identified ownership, whom should you ask?
- In both Sub-Saharan Africa and Asia, nationally representative data sets show that across multiple measures (reported landownership, documentation of ownership, operation, management, and decision making), **women own less land, and have less secure land tenure, than men** (Doss et al. 2015; Kieran et al. 2015)
- This data also shows that, while women may have claims to land under customary law, their documented land rights are much weaker
- Yet no data is available that justifies the 2% figure

Distribution of Land Area – Uganda (LSMS-ISA)



- Strengthening women's land rights is not enough: women also need to be **aware of their rights** and be **able to enforce them**
- Community-based legal aid programs can help fill the gender gap in land-rights knowledge

Photo: Valerie Mueller, Lucy Billings

4. Women are intrinsically better stewards of the environment

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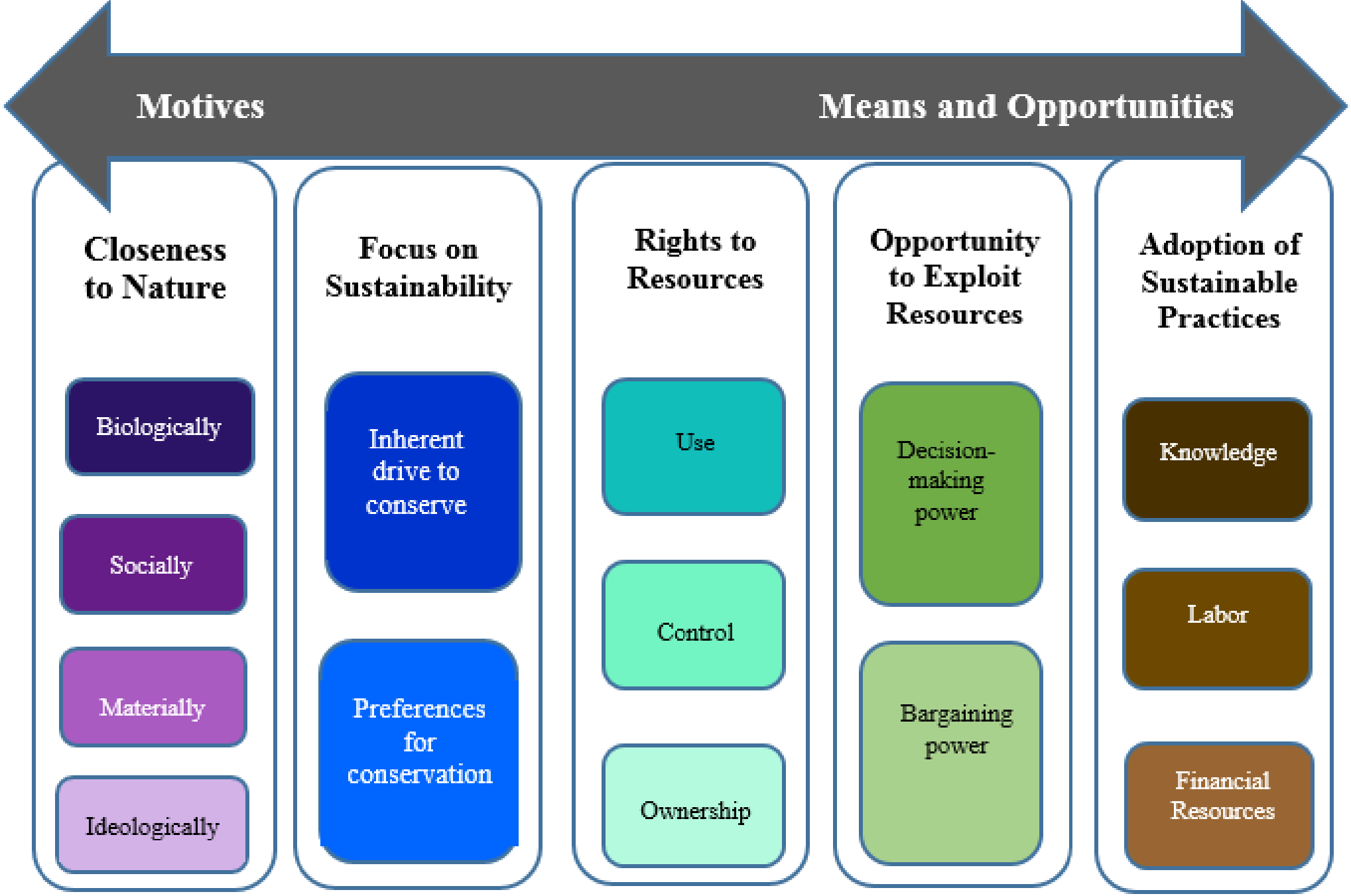
- **Kernel of truth:** Because of women's traditional roles gathering firewood, collecting water, and managing agriculture, they are greatly affected by resource depletion and climate change, and therefore have incentives to conserve resources
- **Problems with this assertion:**

Ignores other issues that influence conservation, like:

i. Tenure security
ii. Access to information
iii. Complementary resources (cash, force) needed



Source: Meinzen-Dick, Quisumbing, & Kovarik 2015

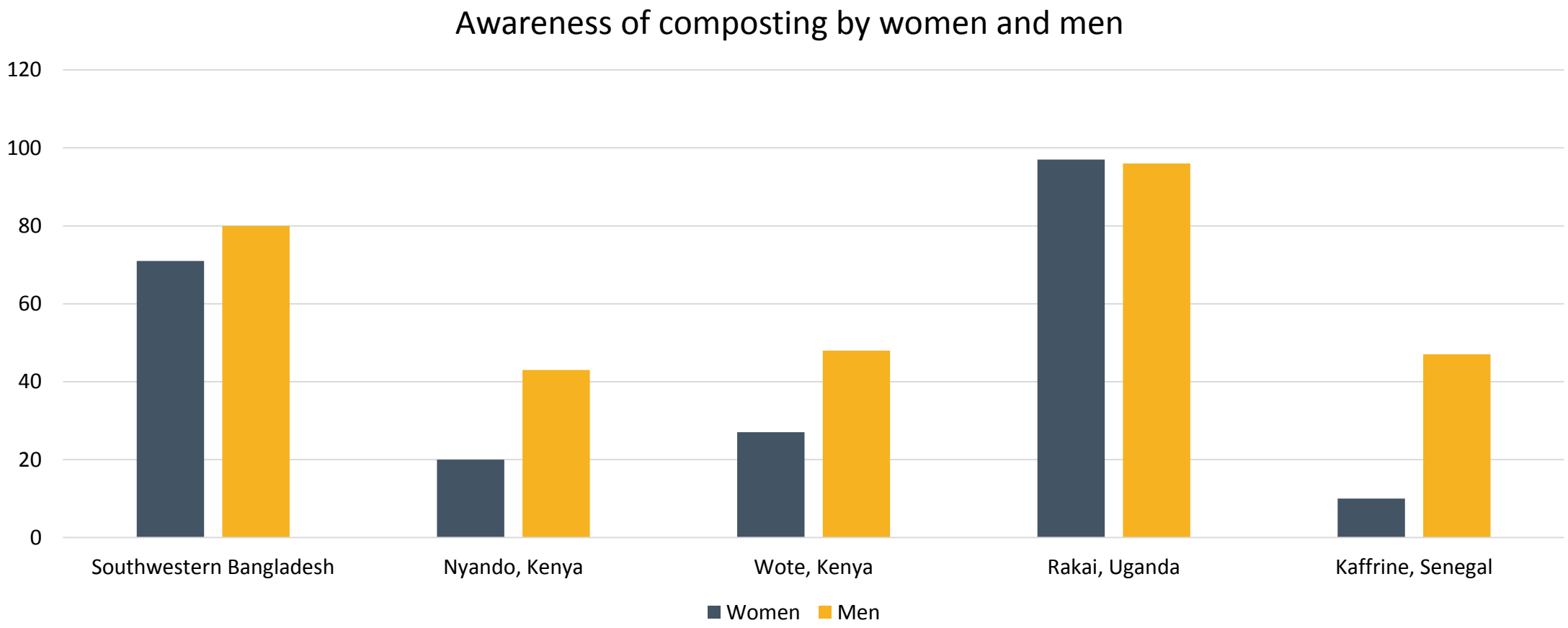
i. Tenure security and incentives to conserve resources

- In Ghana
  - Women with less secure tenure secure are less like to leave land fallow to restore soil fertility (Goldstein and Udry 2008)
  - Women with more secure tenure are more likely to plant trees (Quisumbing et al. 2001)
- In Ethiopia
  - Women plot managers with more secure tenure are more likely to plant trees and adopt climate-smart agricultural practices (Quisumbing and Kumar 2014)
- Women are less likely to have secure tenure, so weaker incentives to practice conservation agriculture

ii. Access to information

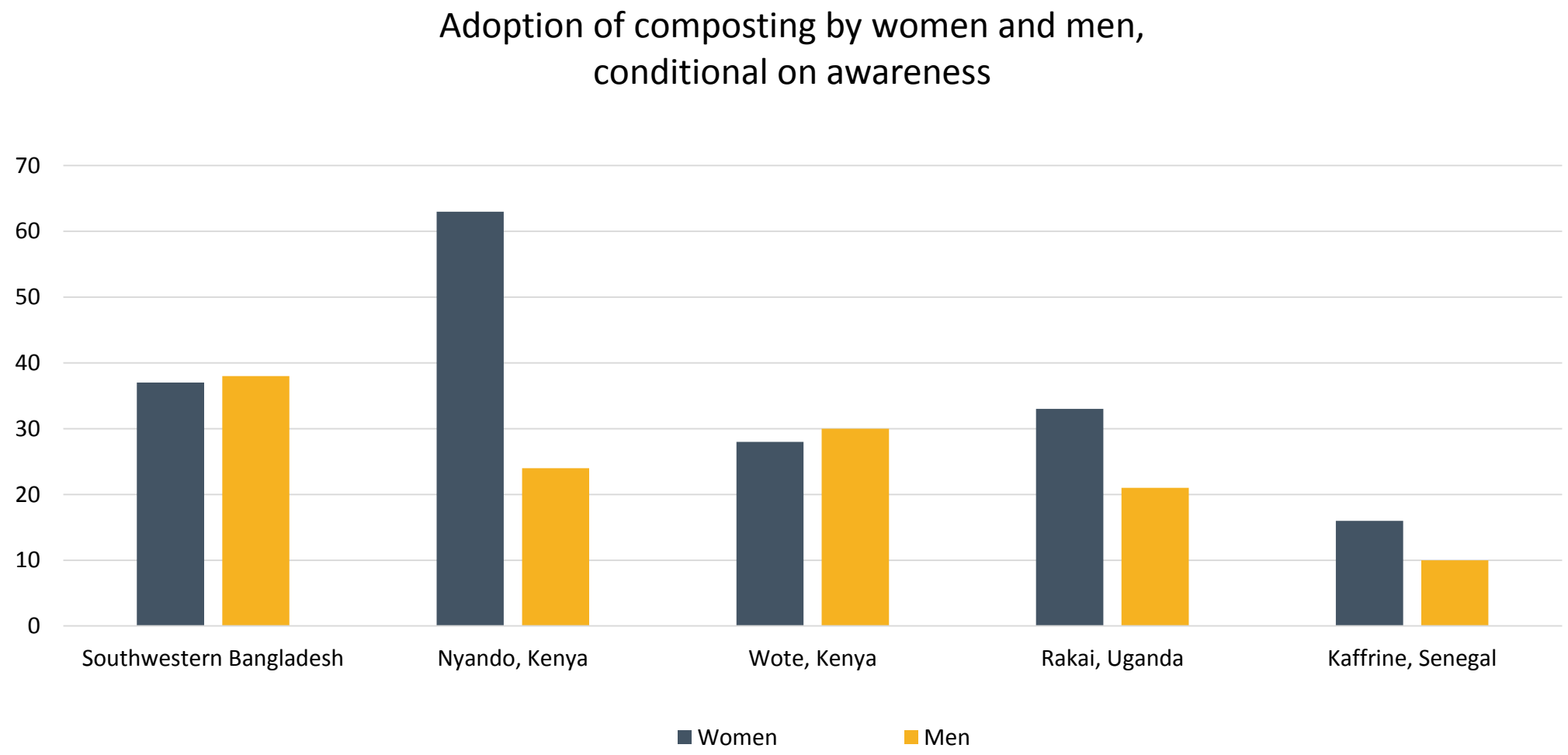
- Access to information influences uptake of conservation practices, but if women have limited access to information due to constraints on mobility, group participation, literacy, social networks, etc, will be less likely to adopt conservation practices

There are gender gaps in awareness of climate-smart agricultural practices, such as composting



Source: CCAFS gender surveys

Among those who *are* aware, gender gaps in adoption of composting are narrow -- and even reversed



Source: CCAFS gender surveys

iii. Complementary resources

- Does the involvement of women in forest governance groups influence forest resource enhancing behaviors? (Mwangi, Sun, and Meinzen-Dick 2011)
  - Forests in Kenya, Uganda, Mexico and Bolivia
- Literature says women likely to have a positive effect on forest sustainability
  - More dependent on forest resources, spend more time in forest, strong norms of cooperation
- However, higher proportions of women in user groups actually perform less well (c.f. Bina Agarwal *Gender and Green Governance* in India, Nepal)
- Women are limited in their access to technology, labor burden, sanctioning authority
- Mixed groups can make the most of men and women's strengths

- Women do face constraints in participating in natural resource governance (e.g. water user associations)
- We should neither ignore women entirely, nor expect them to be independent drivers for conservation
- Need to work with both men and women, and understand gender roles and dynamics between them

Why do the zombie facts continue to haunt us?

Unsubstantiated statistics undercut our work

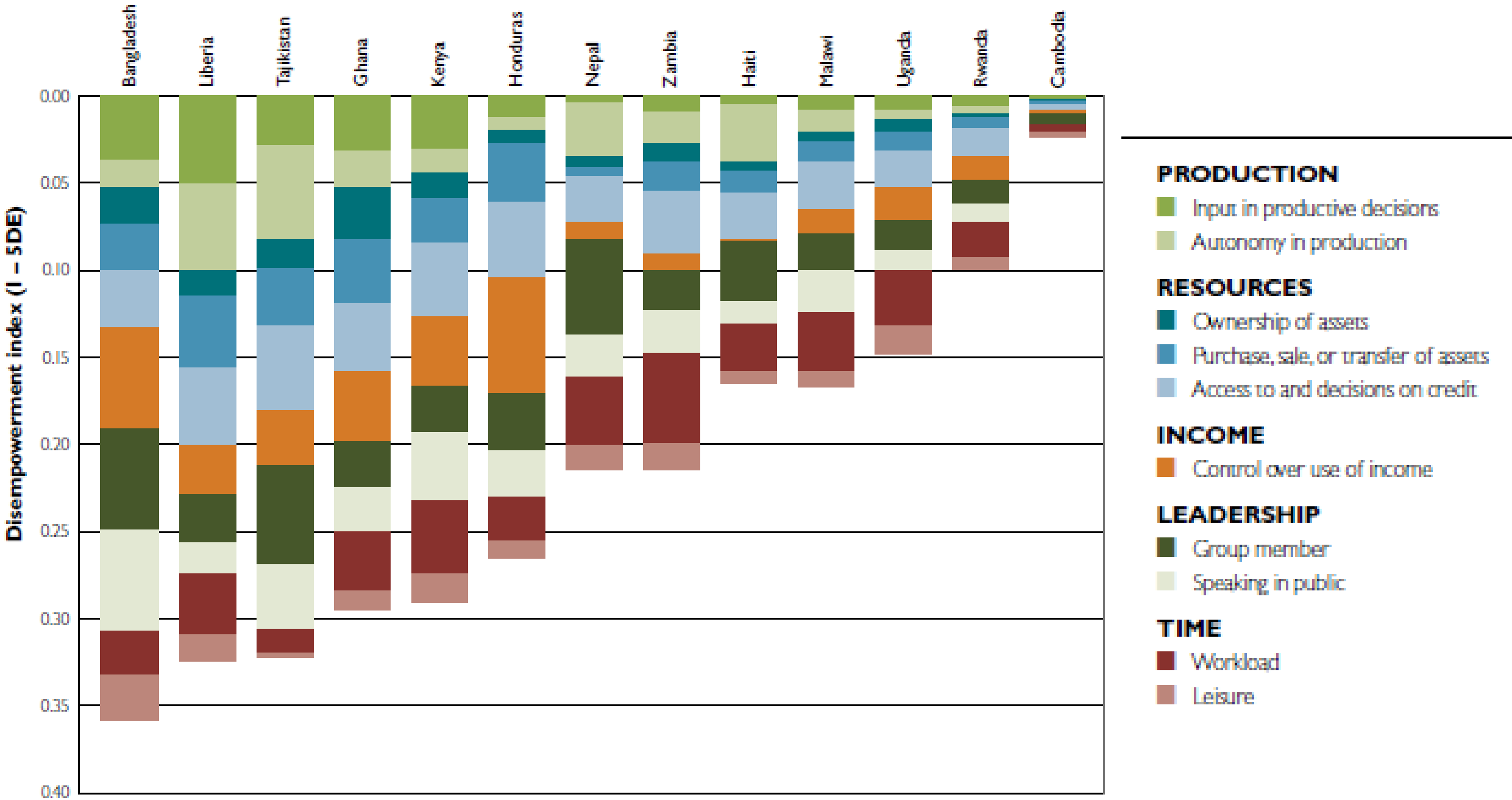
- These zombie facts haunt us in part because:
  - They contain a kernel of truth
  - Better data are currently not available
  - Simpler stories, “killer facts” are more popular than nuanced pictures
- Using zombie facts:
  - Kills credibility
  - Demonizes men and victimizes women
  - Disguises cross-sectional nuance and drivers of change
  - Inhibits ability to measure change over time
  - Misses out on opportunities to build on women’s agency
- But in many cases we *can* collect better data to replace these zombies

- We need to generate better data on gender, agriculture, and the environment, and we can
- We do have the tools to measure these statistics with more accuracy and nuance
- Accurately measuring change is critical to hold governments and other actors accountable

Demonstrate the need for better data, and you can develop better tools

- Women's Empowerment in Agriculture Index (WEAI) captures empowerment across five domains:
  1. Decisions about agricultural production
  2. Access to and decision making power over productive resources
  3. Control over use of income
  4. Leadership in the community
  5. Time allocation
- Baseline studies in 13 countries in 5 regions finds that on average women are twice as disempowered as men
- WEAI is being further refined in the second phase of the GAAP project and being adapted for project-level use

FIGURE 1. CONTRIBUTION OF EACH INDICATOR TO WOMEN'S DISEMPOWERMENT

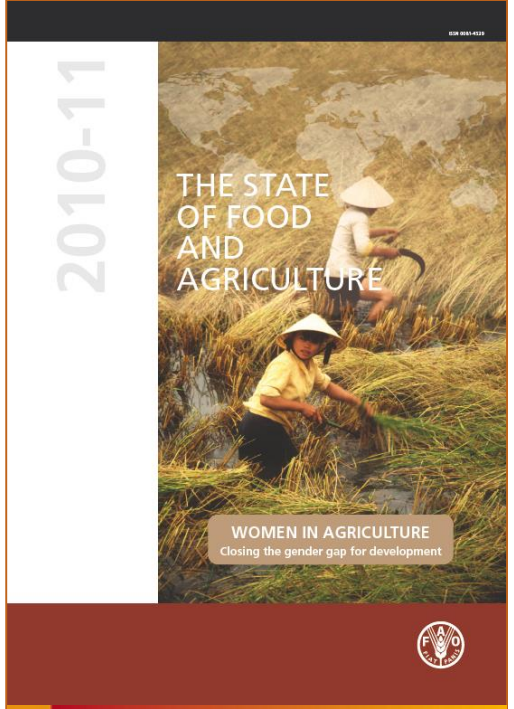


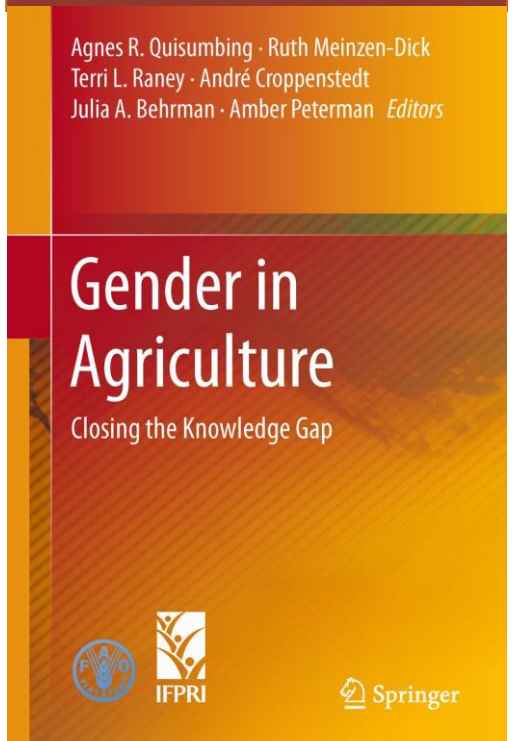
Recognize and defeat zombie statistics

Recognize and defeat zombie statistics

Related Resources

- Gender, Agriculture, and Assets Project (GAAP) website
- IFPRI Gender Website
- Women's Empowerment in Agriculture Index (WEAI) Resource Center
- Blogs:
  - Killer factcheck: 'Women own 2% of land' = not true. What do we really know about women and land?
  - The zombie statistic about women's share of income and property
  - Gender and sustainability: a matter of balance
  - Four Fast Facts to Debunk Myths About Rural Women
  - Ten essential reads on gender and land tenure
  - Takeaways from twenty years of gender and rural development research at IFPRI





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  - The Feminization of Agriculture: Economic Restructuring in Rural Latin America Deere (2005)
  - Feminization of Agriculture: Trends and Driving Forces Lastarria-Cornhiel (2006)
  - The Feminization of Poverty: Claims, Facts, and Data Needs Marcaux (1998)
  - Gender, Assets, and Agricultural Development: A Conceptual Framework Meinzen-Dick et al. (2011)
- Women's contributions to agriculture:
  - The Role of Women in Agriculture. SOFA team and Cheryl Doss (2011)
  - How does women's time in reproductive work and agriculture affect maternal and child nutrition? Evidence from Bangladesh, Cambodia, Ghana, Mozambique, and Nepal Komatsu, Malapit, & Theis (2015)
  - If women hold up half the sky, how much of the world's food do they produce? Doss (2011)
- Women and land tenure:
  - Gender inequalities in ownership and control of land in Africa: myth and reality Doss, et al. (2015)
  - Examining gender inequalities in land rights indicators in Asia Kieran et al. (2015)
  - Filling the legal void? Experimental evidence from a community-based legal aid program for gender-equal land rights in Tanzania Mueller et al. (2015)
- Women as environmental stewards:
  - The profits of power: land rights and agricultural investment in Ghana Goldstein and Udry (2008)
  - Gender and Sustainability Meinzen-Dick, Quisumbing, & Kovarik (2015)
  - Gender and Sustainable Forest Management in East Africa and Latin America Mwangi, Meinzen-Dick, & Sun (2011)
  - Land rights knowledge and conservation in rural Ethiopia: Mind the gender gap Quisumbing and Kumar (2014)
  - Women's land rights in the transition to individualized ownership: implications for tree-resource management in Western Ghana Quisumbing et al. (2001)