Gender Dimensions of Agricultural Innovation Awareness and Adoption

Workshop on "BioSight/SustainableFutures" Project
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Overview

- Project background and rationale
- Why do a "Gender Study"
- The relevance of this study to BioSight
- The survey & how these data were collected
- Some illustrative descriptive statistics
- Preliminary conclusions
- The way forward

Project Background

- Study is part of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

- Little existing research on <u>intrahousehold</u> differences in climate change effects, adaptation strategies

- Follows and builds on a previous study (Impact Lite) conducted in 2011-2012, which collected parcel-level data on production systems

- Subsequently added Gender Study to examine gender-differentiated impacts of climate change
  - Ownership & control over assets
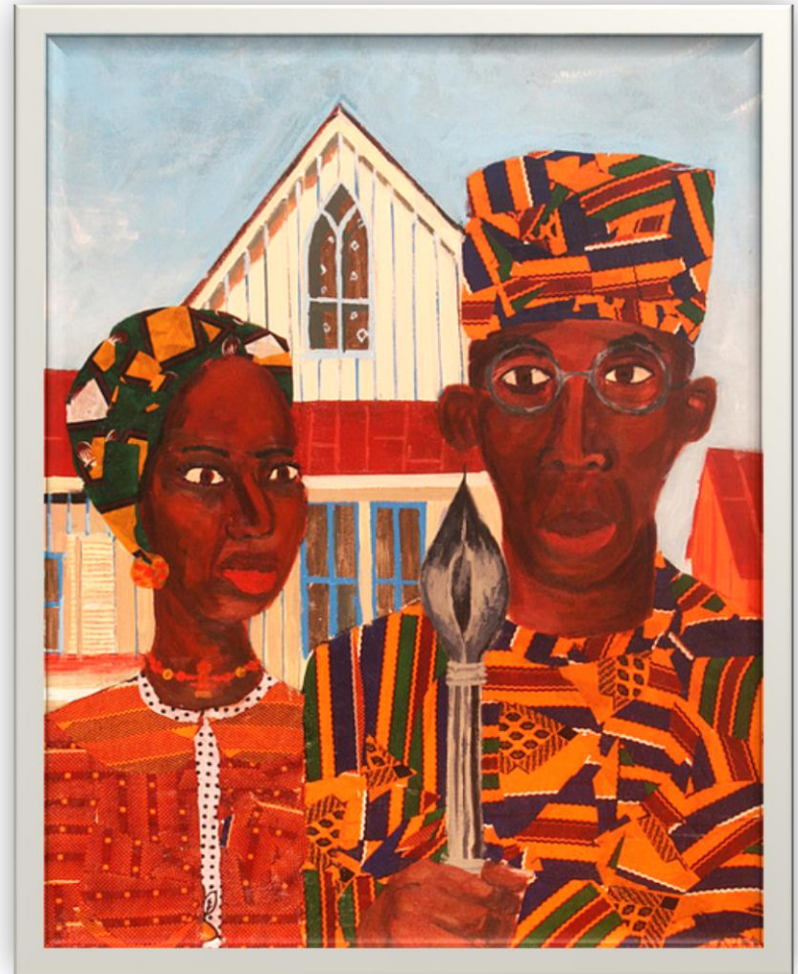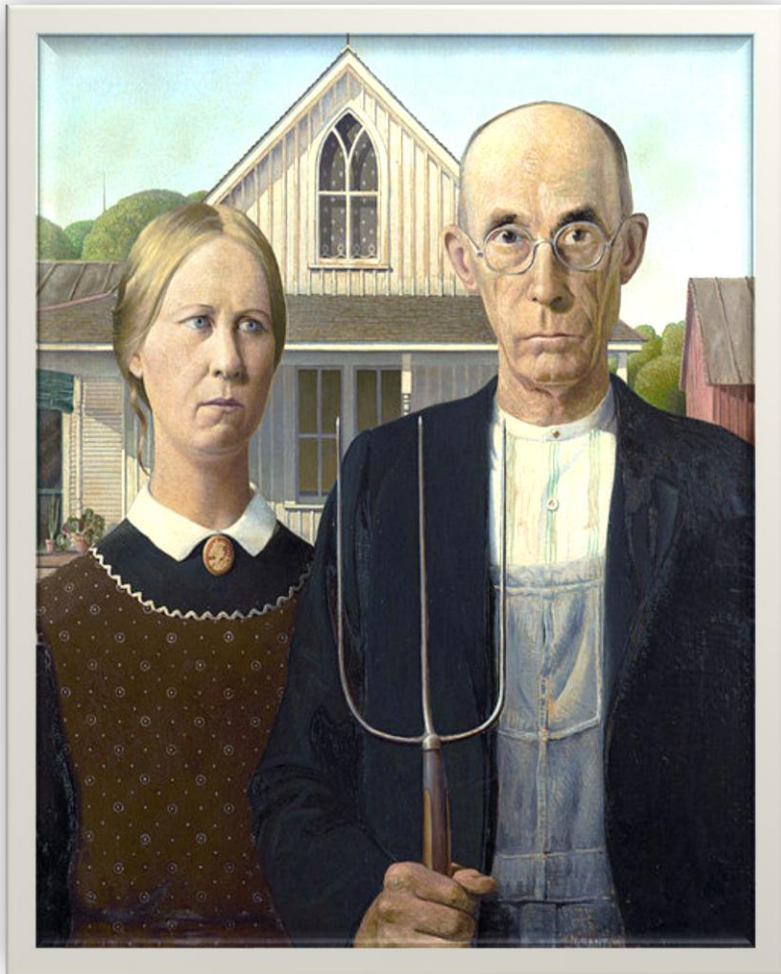 - Agricultural decision-making
  - Division of labor

Why do a "Gender Study"?

- "Households" are complicated, diverse, non-unitary

Why do a "Gender Study"?

- Households do not pool all resources or make decisions as single unit
- Men and women have differential levels of access to various household resources
- Men and women have different preferences for how household resources are used
- Men and women make different decisions on the allocation of resources among household members

- ***Note that these differences have important implications for both production and consumption decisions***

Relevance to BioSight

- A focus of the study was awareness and adoption of climate-smart agricultural technologies and practices

Climate-Smart Agriculture

Innovations for Sustainable Intensification
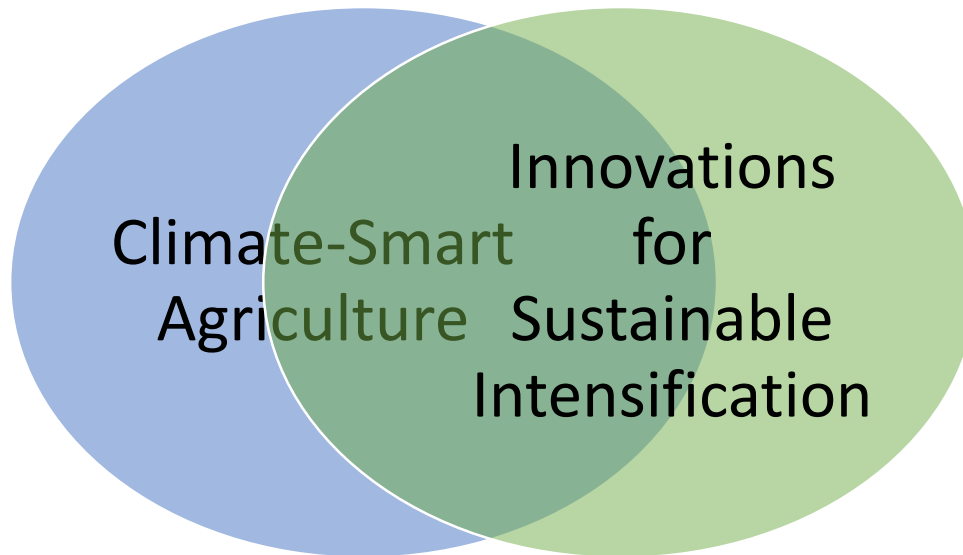
- An important aspect of each is adoption of innovation:
  - New technologies and practices

Technology is great!
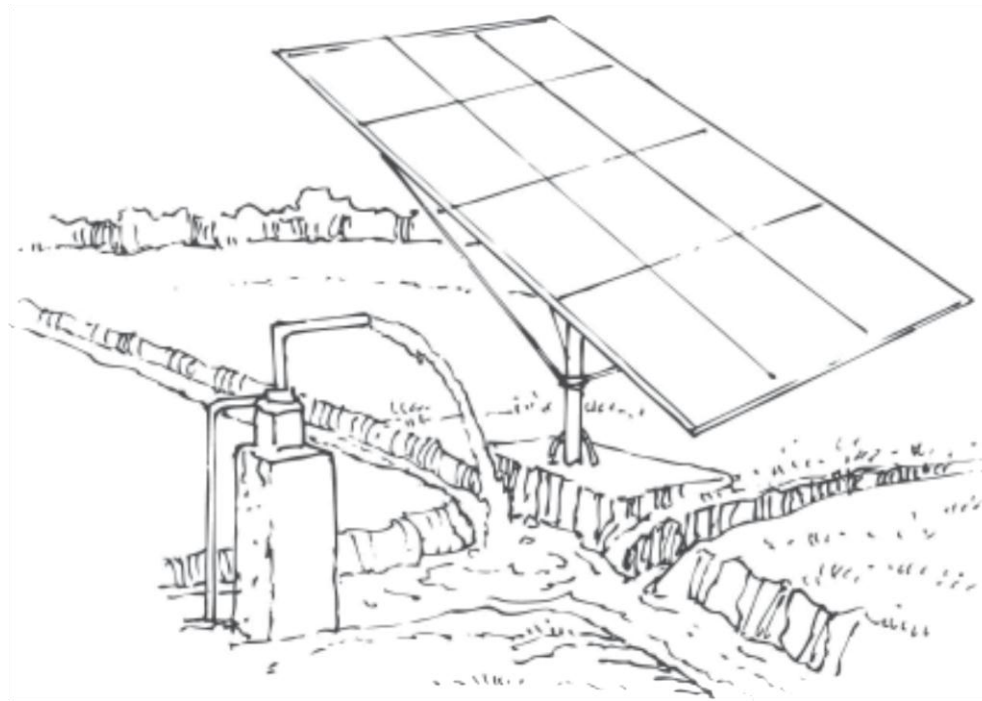
. . . but we can't forget about the <u>people</u>. People must be aware, motivated, and capable of adopting an innovation.

Awareness → Adoption

- We considered a simple, two step sequential process
- Looking at gender differences in both steps
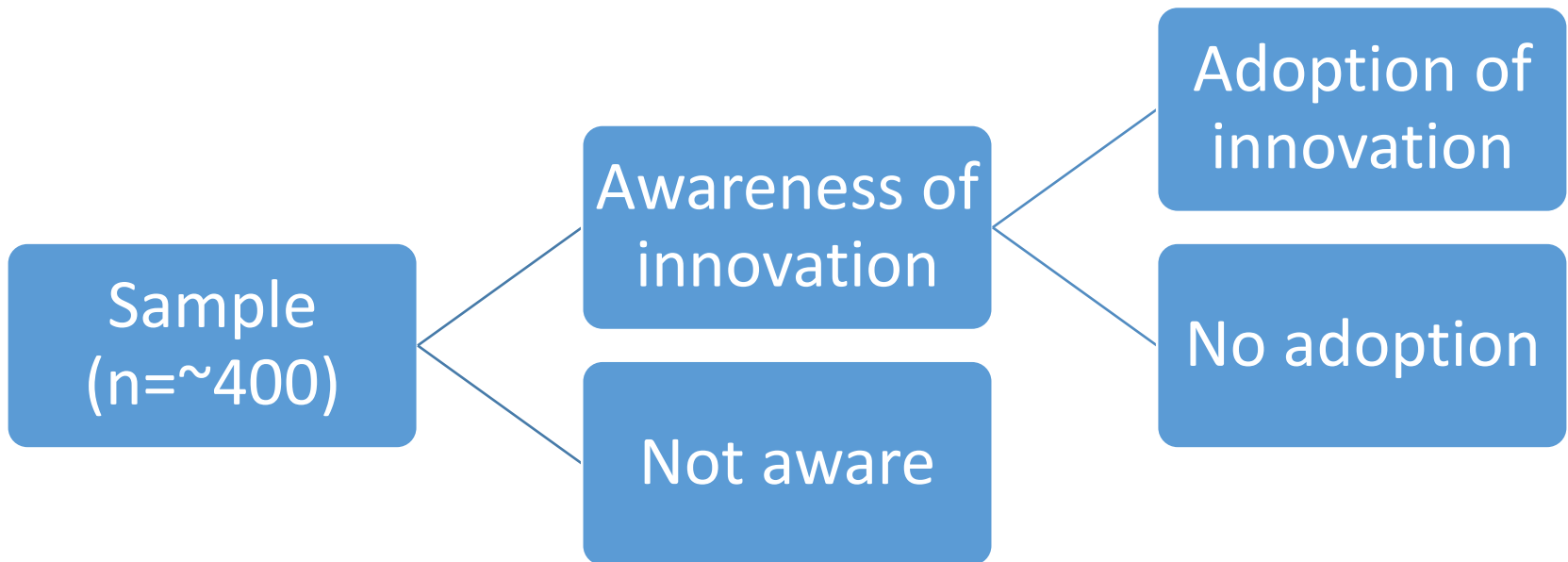
The Survey

- 6 sites in 4 countries:
  - Kenya (2), Uganda (1), Senegal (1), Bangladesh (2)

- Visits same 200 households from earlier survey (Impact Lite), which collected parcel-level data on production systems

- Interview multiple adult decision makers in each household

- Goal: at least 2 adults per household: primary male and female decision makers (more women in polygamous households)

The Survey

- 13 modules, collecting information on:
    - Decision-making over crops & livestock
    - Awareness/adoption of climate-smart practices
    - Group membership
    - Risk management
    - Adaptation strategies/practices
    - Access to credit
    - Preferences and use of agricultural and climate information
    - Perceptions of climate change and impacts (both positive and negative)
    - Personal values and cognitive processes that contribute to climate change decisions

IFPRI Images

The Survey:
Pretesting, Training, & Rollout

- Beginning in early 2013, enumerator training was conducted in all 4 countries
- Survey rolled out between March and May 2013
- Challenges:
  - Gender of enumerators
  - Interviewing multiple people per HH (especially ensuring primary decision makers are present)
  - Ensuring privacy
  - Length of survey
  - Research fatigue
  - Translations
  - Polygamous households
  - Dealing with normative content of some of the questions
  - Dealing with Likert scale questions
  - Matching between two rounds
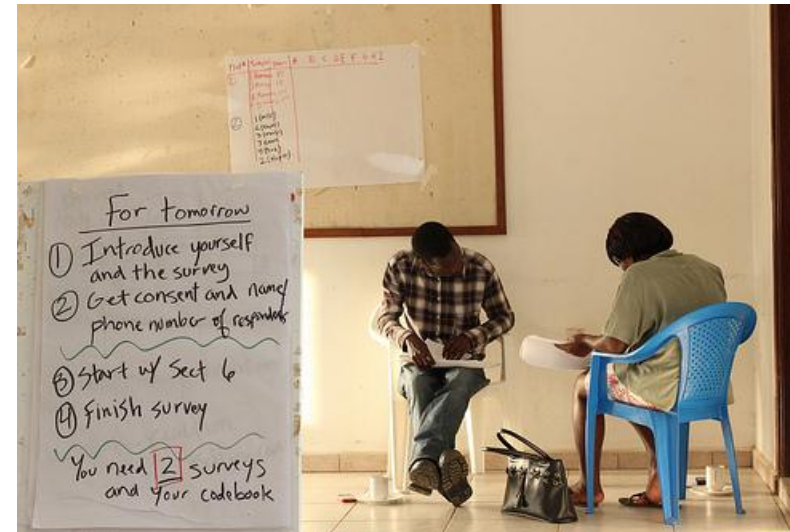
Some Descriptive Statistics

- Still early; most of the analysis is still ahead of us
- To illustrate some of the possibilities of this kind of gender-disaggregated data, we made some tabulations showing differences between men and women in terms of:
  - Contact with extension agents (men and women agents)
  - Reported awareness of climate-smart agricultural practices
  - [only if aware] reported using the practices within past 12 months
  - An example of differences in agricultural decision-making

Contact with Extension Agent

Table 2: Proportion reporting contact with an agricultural extension agent during the past 12 months.								
	Nyando (Kenya)		Wote (Kenya)		Kaffrine (Senegal)		Rakai (Uganda)	
	Men	Women	Men	Women	Men	Women	Men	Women
Contact w/ extension agent	0.566	0.683	0.966	0.938	0.106	0.012	0.641	0.390
Contact w/woman extension agent	0.429	0.579	0.210	0.205	0.005	0.000	0.045	0.027

Rates of Awareness of CSA Practices

Table 3: Differences in rates of awareness of agricultural technologies & practices (women minus men)				
	Nyando (Kenya)	Wote (Kenya)	Kaffrine (Senegal)	Rakai (Uganda)
Agroforestry	-0.238	-0.017	-0.026	-0.002
Terraces/bunds	-0.204	0.000	-0.253	0.000
Water harvesting	-0.336	-0.006	-0.191	-0.347
Irrigation	-0.050	-0.063	-0.035	0.000
Zai/Planting pits	-0.023	0.114	-0.025	-0.031
Crop residue mulching	0.062	-0.006	-0.214	0.013
Composting	-0.236	-0.216	-0.371	0.018
Manure management	-0.003	0.080	-0.060	-0.062
Effic. use of fertilizer	-0.089	-0.244	-0.206	-0.331
Improved HYVs	0.230	-0.045	-0.381	-0.018
Improved STVs	0.067	0.000	-0.128	0.126
No/min tillage	-0.153	-0.256	-0.136	0.423
Improved grain storage	0.080	0.000	-0.025	-0.157
Improved stoves	-0.138	-0.080	0.155	0.007
Improved feed management	-0.062	-0.051	-0.159	-0.046
Destocking	-0.016	0.063	-0.092	0.067
Cover cropping	0.154	0.102	-0.104	-0.179
Tolerant livestock	0.048	0.233	-0.122	-0.052
Rangeland management	0.158	0.301	-0.111	-0.233
IPM	0.024	-0.051	-0.051	0.060

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Rates of Adoption of CSA Practices

Table 4: Differences in rates of adoption of agricultural technologies & practices (women minus men)	Nyando (Kenya)	Wote (Kenya)	Kaffrine (Senegal)	Rakai (Uganda)
Agroforestry	0.087	-0.209	0.013	-0.026
Terraces/bunds	0.038	-0.034	0.105	-0.060
Water harvesting	0.155	-0.028	0.043	0.227
Irrigation	0.069	-0.013	-0.006	-0.075
Zai/Planting pits	0.219	-0.006	-0.200	-0.062
Crop residue mulching	0.243	-0.119	0.030	0.045
Composting	0.392	-0.029	0.059	0.115
Manure management	0.221	0.008	0.000	-0.143
Effic. use of fertilizer	0.042	-0.127	0.061	-0.156
Improved HYVs	0.046	-0.085	0.183	-0.345
Improved STVs	0.265	-0.069	0.218	-0.055
No/min tillage	0.298	0.077	0.074	-0.272
Improved grain storage	0.140	0.163	0.027	0.140
Improved stoves	0.028	-0.059	-0.032	0.046
Improved feed management	0.200	0.296	-0.052	0.498
Destocking	0.140	0.149	0.035	0.213
Cover cropping	0.121	0.360	0.198	0.114
Tolerant livestock	-0.025	-0.181	-0.200	-0.108
Rangeland management	0.447	0.077	0.023	0.037
IPM	0.190	-0.778	0.167	0.465

Agricultural Decision-Making (example)

Kaffrine (Senegal)

Participation in Choosing Which Fields to Plant	Men	Women
No	4.55	95.98
Yes	95.45	4.02
	100	100

Rakai (Uganda)

Participation in Choosing Which Fields to Plant	Men	Women
No	1.28	1.60
Yes	98.72	98.40
	100	100

Preliminary Conclusions

- Few generalizations about gender differences in awareness & adoption apply across these 4 sites

- Researchers & modelers should assume this level of diversity/complexity in gender relations from site to site, not draw broad conclusions from specific experience

- Challenge for theorists, modelers, methodologists to develop ways of representing such complexity with validity and consistency

- Gender-disaggregated data is crucial, but it's not cheap or easy. Requires a real commitment of attention, time, effort, and resources

The Way Forward

- Use regression models to better isolate effects of explanatory variables on awareness and decision to adopt
  - 2-stage regression models, instrumental variables, etc

- Linking the disaggregated gender data to the more detailed plot/sub-plot production data in Impact Lite

- More fully exploit the data on decision-making and control over assets, especially joint ownership/authority

- Study areas of discrepancy between men's and women's responses

Thank you!

Any questions?
Please email
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