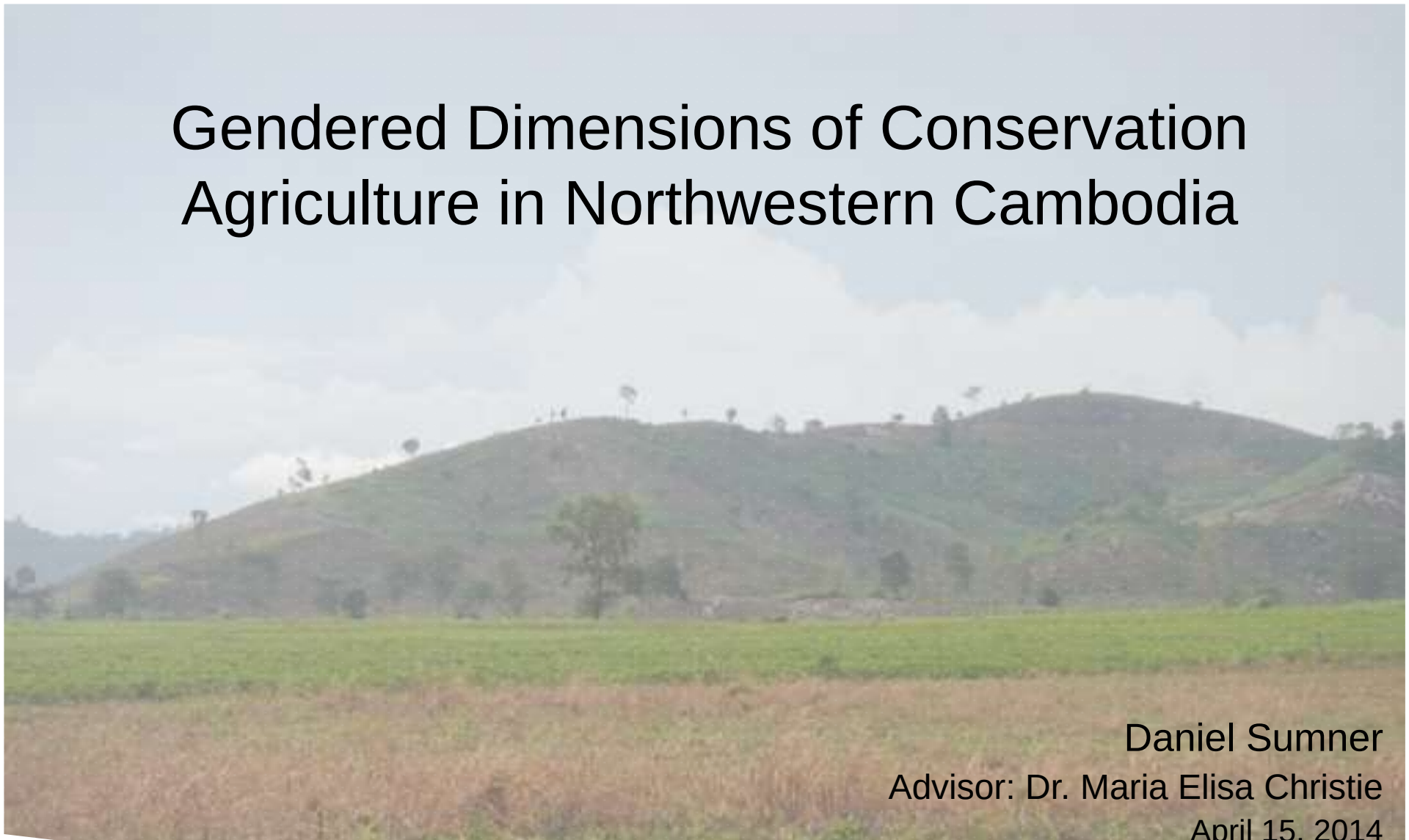
Gendered Dimensions of Conservation Agriculture in Northwestern Cambodia



Daniel Sumner
Advisor: Dr. Maria Elisa Christie
April 15, 2014
Thesis Defense for Masters of Science in Geography
Virginia Tech

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Land degradation, food insecurity, and smallholder agricultural production

- Despite crop yield gains over the past 50 years (FAO 2012), food insecurity and poverty remain widespread throughout the developing world

- Smallholder farmers are particularly at risk because of degrading agricultural landscapes and susceptibility to market shocks

Principles of conservation agriculture

- Permanent organic soil cover
- Minimized soil disturbance from tillage
- Diverse crop rotations, sequences, and associations (Kassam et al. 2009)

The dissemination of conservation agriculture (CA) and SANREM IL

- **Purpose of SANREM IL**

  Increase the agricultural productivity and food security of smallholder farmers through promoting sustainable Conservation Agriculture Production Systems (CAPS)

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Costs and benefits associated with CA

- **Benefits & Opportunities**
  - Enhanced soil production potential
  - Increased and/or stabilized crop yields
  - Greater resilience to climate change
  - Reduced labor burdens and production costs
- **Costs & Constraints**
  - Access to agrochemical inputs and specialized no-till equipment
  - Increased weed pressure
  - Land tenure security
  - Resilient mindsets

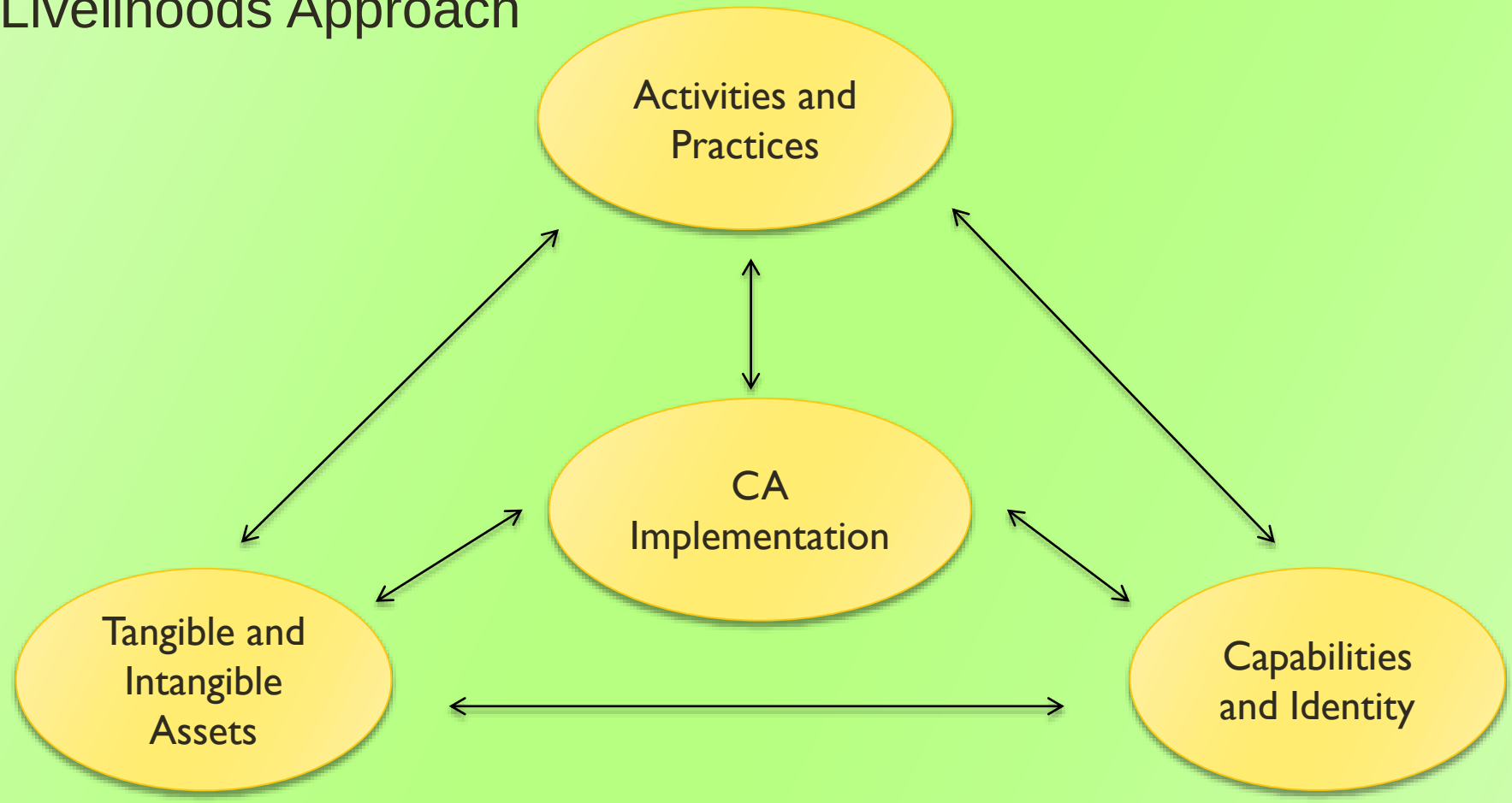
The gendered components of CA implementation

- Gender is an integral component in defining:
  - Household division of labor
  - Access to and control over productive assets, resources, and information
  - Power in intra-household decision-making

"Efforts to promote CA are not always gender neutral in terms of labor requirements, empowerment, or economic benefits and costs"
(Milder et al. 2001)

Addressing gender relations in the context of international development

Livelihoods Approach



Adapted from Chambers and Conway 1991; Radel 2012

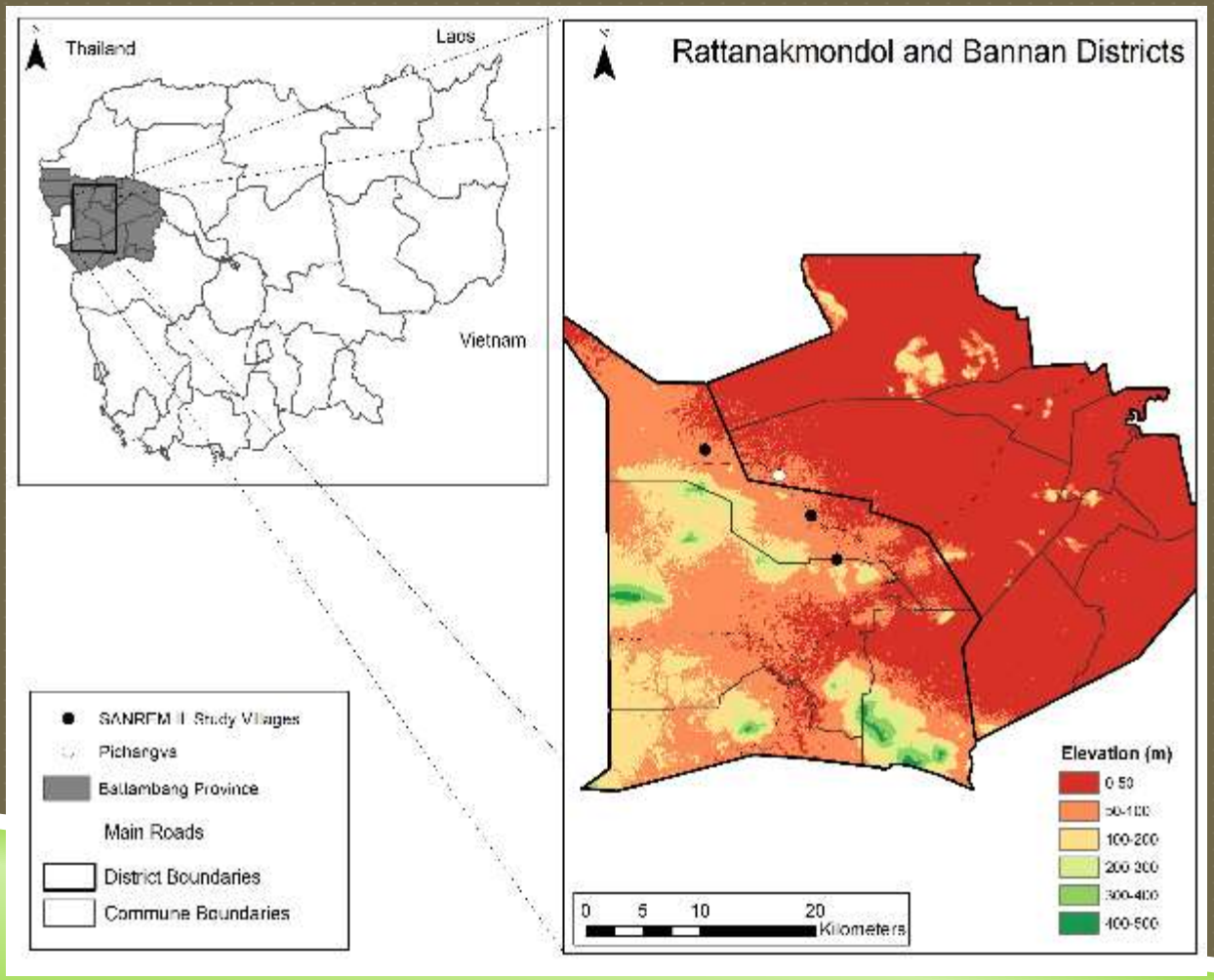
Theorizing the connections between gender, agriculture, and international development

- **Labor allocation**
  (Schroeder 1993; Carney 2004)
- **Gendered and local knowledge**
  (Rocheleau et al. 1996b; Harman Parks et al. 2014)
- **Access to productive assets and natural resources**
  (Bebbington 1999; Rocheleau et al. 1996a; Valdivia and Giles 2001)
- **Intra-household decision-making**
  (Rocheleau and Edmunds 1997; Basset 2002 ;Doss 2013)
- **Gendered space**
  (Rocheleau 1995; Nightingale 2006)

Research questions (RQs)

- **RQ1:** *How do men and women **access agricultural support services** and **information about CA**?*
- RQ2: *How are **gendered livelihood practices** linked to men's and women's participation in **intra-household decision-making** and the implementation of CA?*
- RQ3**:** *How could gender-based differences in **access to and control over land, agricultural machinery, and credit** impact the dissemination of CA?*
- RQ4**:** *How does CA implementation affect men's and women's **allocation of labor** to different productive, reproductive, and community activities?*

Pichangva, Rattanakmondol, Battambang, Kingdom Of Cambodia



(Map by author)

Research participants

	Men	Women	**Total**
Focus Group Discussions	7	8	15
Household Visits	22	25	47
Key Informant Interviews	2	2	4
Total	31	35	66

Data collection: Focus Group Discussions (FGDs)

Two FGDs, one with men and one with women

- Men's and women's participation in agricultural and domestic livelihood activities
- Timeline of changes in agricultural production and gender dynamics
- Practices of a good farmer and perceptions of CA

Data collection: Household visits

26 households

- 3 female-headed
- 21 dual-headed interviewing both men and women
- 2 dual-headed with only one household member available for interview

- Semi-structured interviews
- Household survey
- Participatory mapping

Data analysis: quantitative & qualitative

- Quantitative
  - Descriptive statistics
  - Two-tailed N-1 two-proportion test (Campbell 2007)
  - 5% significance level to determine significance
- Qualitative
  - Content analysis
  - Inductive coding (with Atlas.ti)
  - Data categorized to identify gender-based constraints and opportunities

RQ1: *How do men and women* ***access agricultural support services and information about CA****?*

Gender differences in group membership: Information and support services

	Yes		No		No knowledge of group	
	Men	Women	Men	Women	Men	Women
Farmer Association/producer group	45%	36%	55%	64%	-	-
SANREM IL producer group	60%	56%	41%	44%	-	-

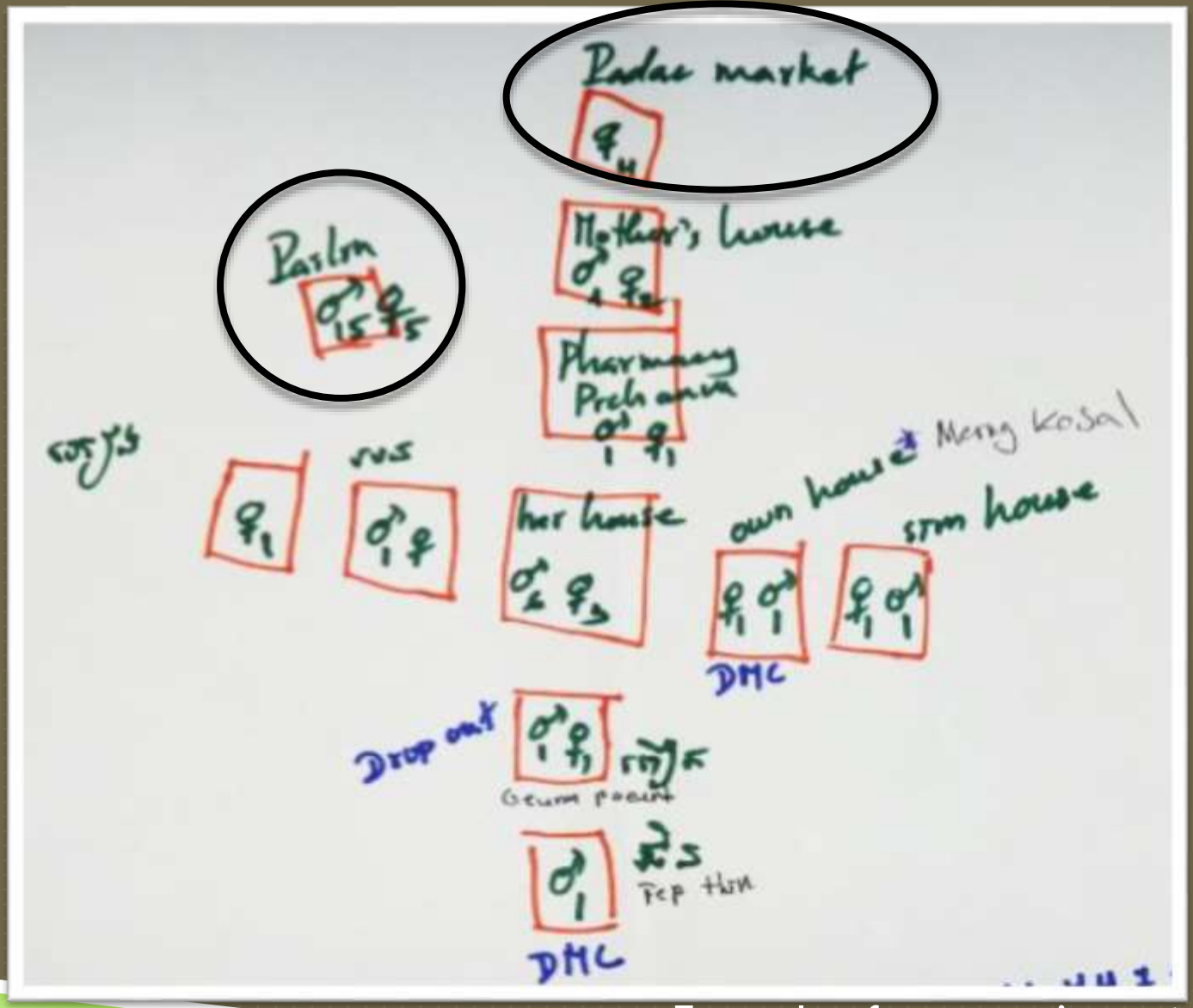
Gendered space and access to information about CA

- Men discuss CA with other men when they are working on their plot or visiting a neighbor's plot.
- Women discuss CA in a greater variety of spaces including household gardens, pagodas, and markets.

"I share mostly with men because men control the upland cultivation and have the information and know about the supplies that are needed"
(Male farmer)

"I talk about CAPS mostly with women because it is mostly women at the Padak market"
(Female farmer)

Example of a man's participatory map



Example of a woman's participatory map

*RQ2: How are **gendered livelihood practices** linked to men's and women's participation in **intra-household decision-making** and the implementation of CA?*

Livelihood practices and participation: Gendered division of labor

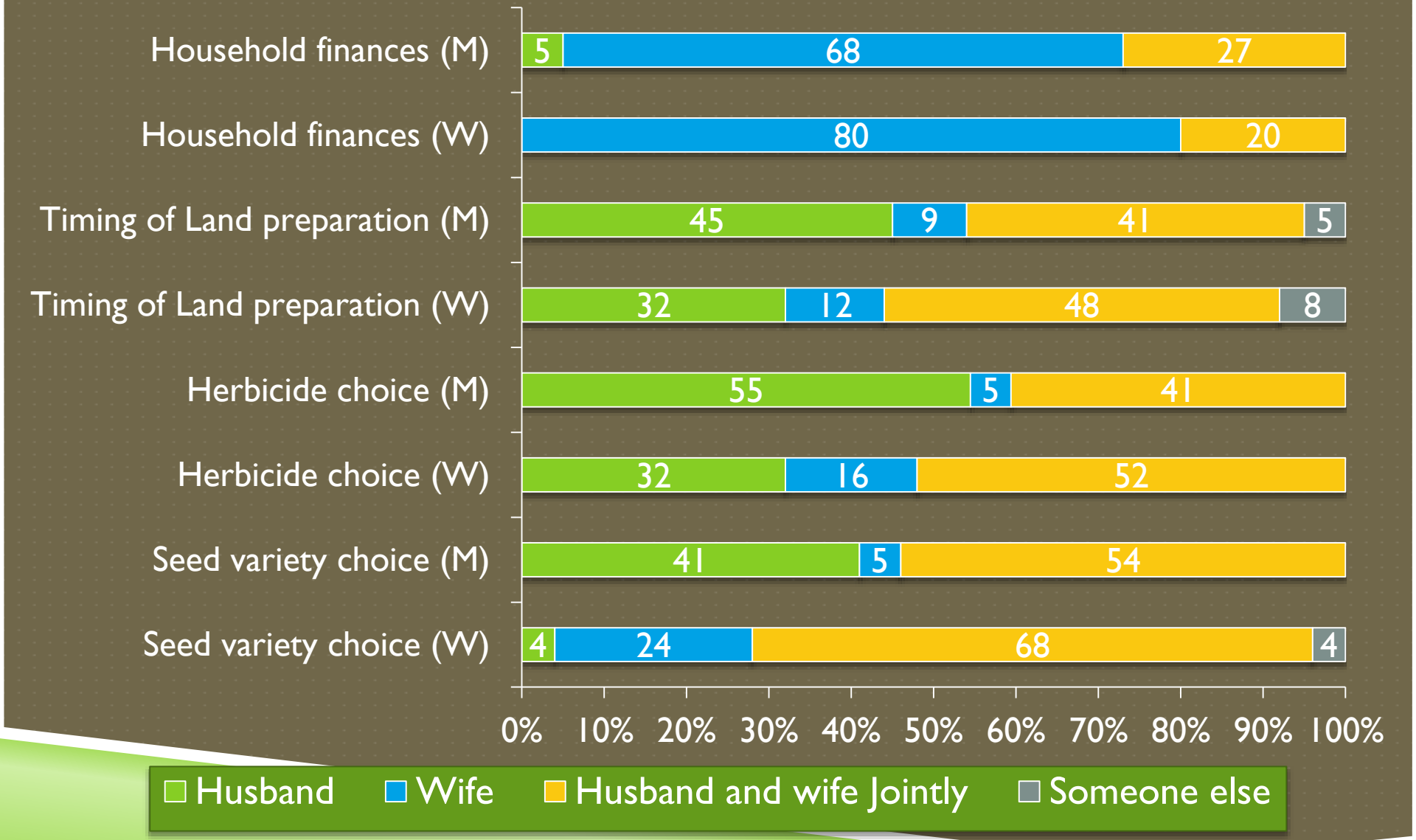
Men work primarily on the farm

- Land preparation
  - Plowing, disking, & furrowing
- Herbicide application
- Forest clearance

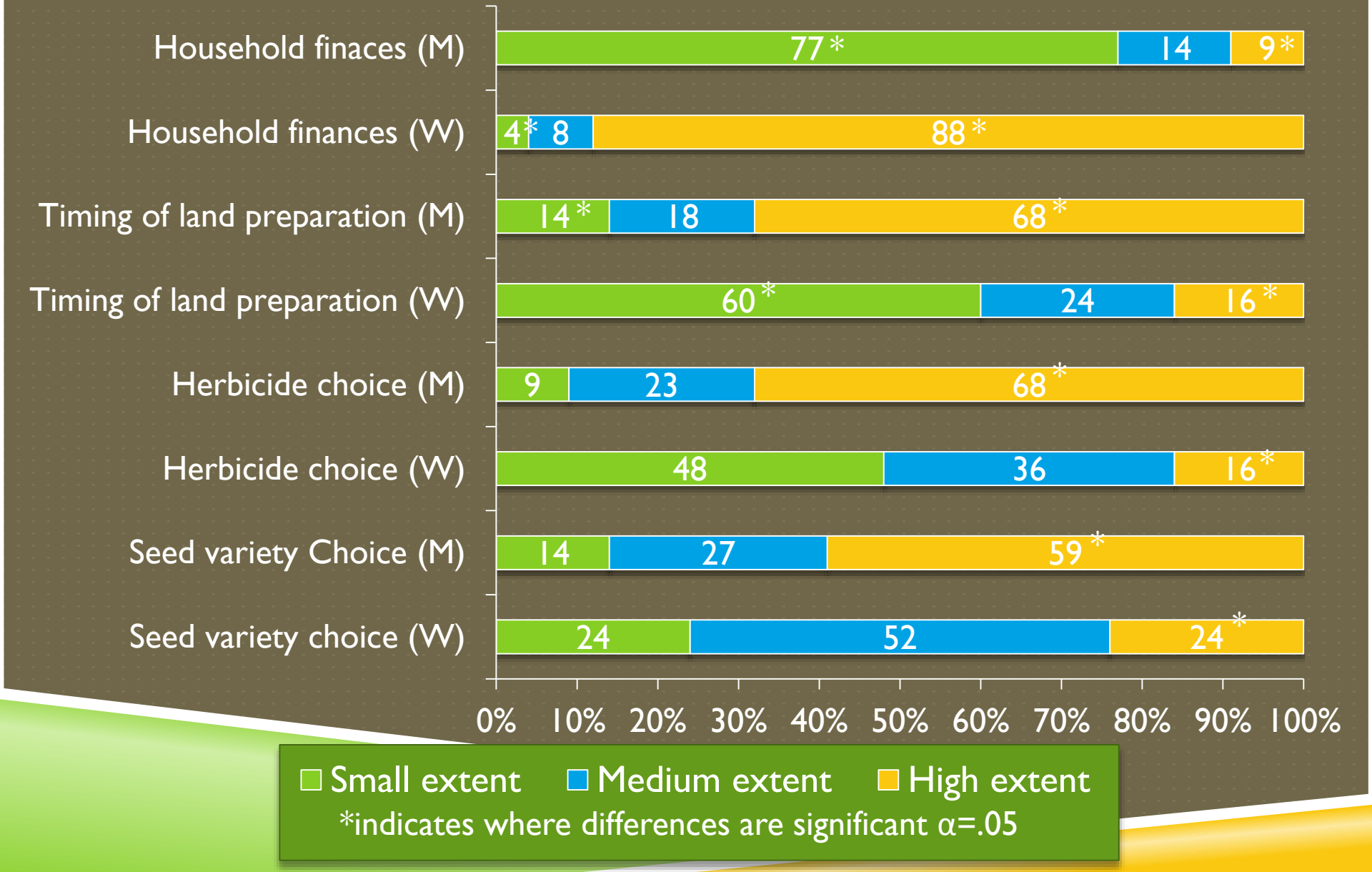
Women work primarily in the house

- Marketing
- Money management
- Domestic chores

"Who makes the decision?": Farm activities



"How much do you participate in decisions": Farm activities



RQ3: *How could gender-based differences in access to and control over land, credit, and agricultural machinery impact the dissemination of CA?*

Men's and women's reported land ownership

	Main male/husband		Main female/wife		Self & partner/spouse jointly		Someone else in the household		Someone outside the household	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Implementing CA	17%	13%	8%	7%	75%	80%	0%	0%	0%	0%
No longer implementing CA	0%	0%	0%	14%	100%	86%	0%	0%	0%	0%
Interested in CA	0%	0%	0%	0%	33%	50%	0%	0%	67%	50%

Women n=25 and Men n=22

Access to credit

- Sources of credit:
  - Micro-finance institutions
  - Local intermediary
  - SANREM IL

"…my husband takes out the loan, but is not concerned with clearing the debt"
(Female farmer)

Access to and control over agricultural machinery

- Increasing mechanization within the study area
- Status symbol and identity
- Access to specialized no-till equipment
  - Availability
  - Lack of capital

RQ4: *How does CA implementation affect men's and women's allocation of labor to different productive, reproductive, and community activities?*

CA implementation and it's effect on labor allocation in land preparation

- 80% of women and 77% men indicated that CA reduced their labor burden in annual cash crop production land preparation and implementation

"When my family was plowing … my whole family had to help during land preparation, but with CA my wife and children no longer have to sow the maize seed or apply the fertilizer." (Male farmer)

CA and the "Triple Workload"

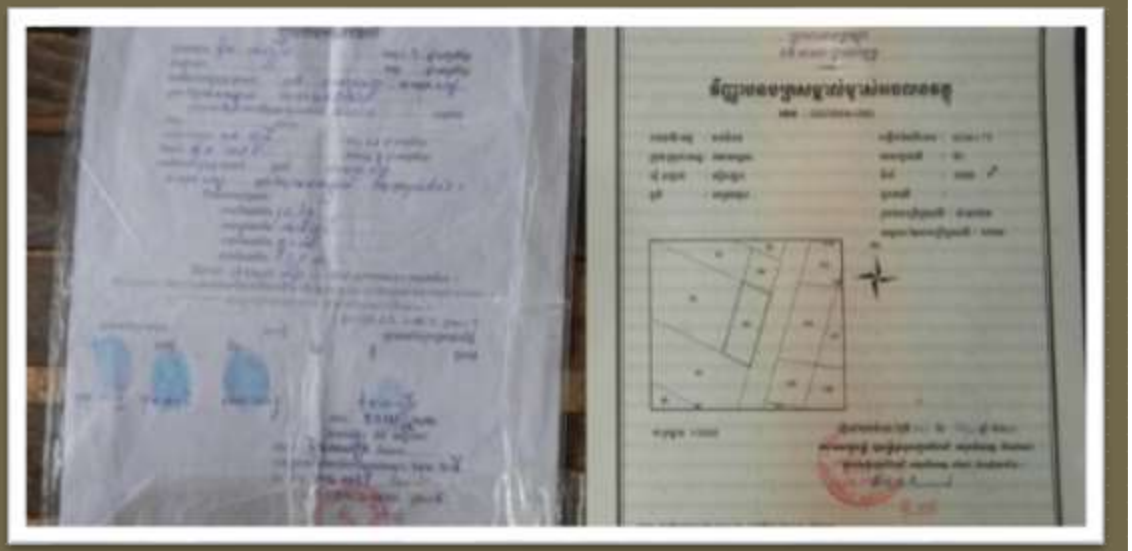
	Agriculture production	Wage & salary employment	Domestic activities	Non-farm activities	Land clearance
Men	72%	5%	14%	8%	23%*
Women	68%	20%	25%	9%	0%*

Women n=25 and Men n=22; *indicates where differences are significant α=.05

- Men and women able to allocate more labor to household cash crop and subsistence agriculture
- Men and women have more "extra" time to reallocate, but there is little change between men's and women's perceived roles and responsibilities

Gender-based constraints to CA

- Continuing issues regarding tenure insecurity
- “Extra time” and women’s triple workload
- Access to agricultural training and support services
- Access to credit
- Importance of tillage



Gender-based opportunities to CA

- Interest in new technologies
- Household decision-making dynamic
- Joint ownership and increasing tenure security

Recommendations

- Identify who within the household makes what kinds of decisions and, if decisions are made jointly, ensure that men's and women's concerns and interests are addressed
- Build upon existing information pathways by ensuring men and women both have access to agricultural training and support services. Incorporate information beyond the technical components of CA applied in the field for instance to include decisions made in the home that affect field practices

Livelihoods embedded in ecological change and gendered space

Landscape modification and environmental change

Livelihoods embedded in ecological change and gendered space

Fields perceived as men's space

Livelihoods embedded in ecological change and gendered space

House and house-lot perceived as women's space

Thinking spatially can help conceptualize the interconnectedness of the multiple components of gendered livelihoods

អរគុណ (Arkoun Tran) – thank you

- My committee members: Dr. Lawrence Grossman and Dr. Yang Shao
- Dr. Manuel Reyes at North Carolina A&T and Dr. Stephane Boulakia at CIRAD for their support during my research
- Mr Kong Rada, Ms. Sel Rechaney, Mr. Mao Rambo, and the rest of the SANREM IL for their assistance with data collection
- The farmers who participated in the research

This research was made possible by the generous support of the American people through the U.S. Agency for International Development (USAID) and the United States Feed the Future Innovation Lab for Collaborative Research on Sustainable Agriculture and Natural Resource Management (SANREM IL) under the cooperative agreement number EPP-A-00-04-00013-00 at the Office of International Research, Education and Development at Virginia Tech.

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