GENDER ANALYSIS OF AGRICULTURAL LABOR IN THE MID-HILLS OF NEPAL AND THE IMPLICATIONS FOR THE ADOPTION OF CONSERVATION AGRICULTURE

Jacqueline Halbrendt, Brinton Reed, Theodore Radovich, Bir Bahadur Tamang

Department of Natural Resources & Environmental Management
University of Hawaii
Honolulu, Hawaii, USA
Introduction

• Women represent half the population in subsistence farming communities, however, there is a lack of research measuring the labor effects of agricultural interventions on gender

• Household labor capacity can be a limiting factor for changes to agriculture in subsistence communities

• Inability to increase agricultural labor hours can contribute to failure to adopt practices despite potential to increase food security, improve soil, and maintain livelihoods

• Rural women take on a disproportionate workload for both agricultural and household duties

• Labor division is highly localized and contextual, and may depend on culture, education, income, or environmental conditions
Objectives

• To identify the gendered distribution of agricultural labor in three *Chepang* tribal villages of central Nepal

• To estimate the changes in gender labor required by conservation agriculture interventions

• To assess the implications of labor shifts with respect to the potential for adoption of conservation agriculture practices.
Study Area: Central Mid-hills, Nepal

- Agriculture in the central mid-hills supports 44% of Nepal’s population
  - A region of high importance for improving food security
- Three villages in the central mid-hills were studied
  - Village size: 25-42 households
- Communities characterized by:
  - Food insecurity, subsistence farming, limited income generation
  - Marginal agricultural lands, small landholdings (<2 ha land/household)
  - Continuous cultivation, terracing, and mono-cropping in a maize-based agricultural system
Methodology

• June 2012, households were surveyed in three Chepang tribal communities in the central mid-hills of Nepal to conduct an activities analysis by gender
• Male and female heads of household surveyed separately to assess gender participation in agricultural activities
• Survey analysis measured labor hours required for the farmer’s cultivation approach, representing a complete cropping season: (T1) maize followed by legumes
• CA plots on 8 farmer fields in each village
• Labor activities recorded by gender for two treatments:
  – (T2) Maize followed by intercropped millet/cowpea
  – (T3) Minimum tillage maize followed by intercropped millet/cowpea
Results: Labor distribution (%) with Conventional and Conservation Practices

T1: Conventional Maize + Legume
- Female: 53%
- Male: 47%

T2: Intercrop Maize/Legume + Millet
- Female: 55%
- Male: 45%

T3: Min Till Intercrop Maize/Legume + Millet
- Female: 54%
- Male: 46%

Women perform 53-55% of total labor hours for both farmer’s practice and conservation agriculture.
Results: Changes in (%) Gender Labor by Activity

a. Maize/Legume to IC Maize/Legume + Millet

- Plowing
- Fert App
- Sow/Trans
- Weeding
- Harvesting
- Total Change

- Male
- Female

b. Maize/Legume to Min Till IC Maize/Legume + Millet

- Plowing
- Fert App
- Sow/Trans
- Weeding
- Harvesting
- Total Change

- Male
- Female
Results: Comparison of Systems

- Increases in land preparation, sowing, harvesting with CA
- Overall decreases observed in fertilizer application, weeding
- Drivers for the shift in labor are increased harvesting for women, with some increases in land preparation
Conclusions & Implications

• The introduced CA practices have been shown to increase agricultural labor for women

• Increased demands for harvesting are the driving force for this shift in labor
  – Indicates potential for greater food security and income generation
  – Greater demands for processing and marketing will be required

• However, limited household labor availability and seasonal demands may be prohibitive for the adoption of these CA practices

• Reduced demands for fertilizer application and weeding may allow for diversification of agricultural or off-farm activities
Future Research

• Conduct further research to explore the driving forces behind the gender-based labor shifts and decision-making
• Determine the opportunity costs of increased agricultural labor as compared with other wage earning, community, or education opportunities
• Assess the agricultural labor demands within the scope of total household and community time commitments labor and seasonal time demands
THANK YOU!

Acknowledgements:
USAID/FtF Food Security Innovation Lab: Collaborative Research on Sustainable Agriculture and Natural Resource Management
University of Hawaii
Local Initiatives for Biodiversity Research and Development (Li-Bird)
Institute for Agriculture and Animal Science, Tribhuvan University