Alternative Agriculture and Food Security: Understanding the Shifting Dynamics of Gender and Labour within System of Rice Intensification (SRI) in Bihar in Eastern India

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Research Overview

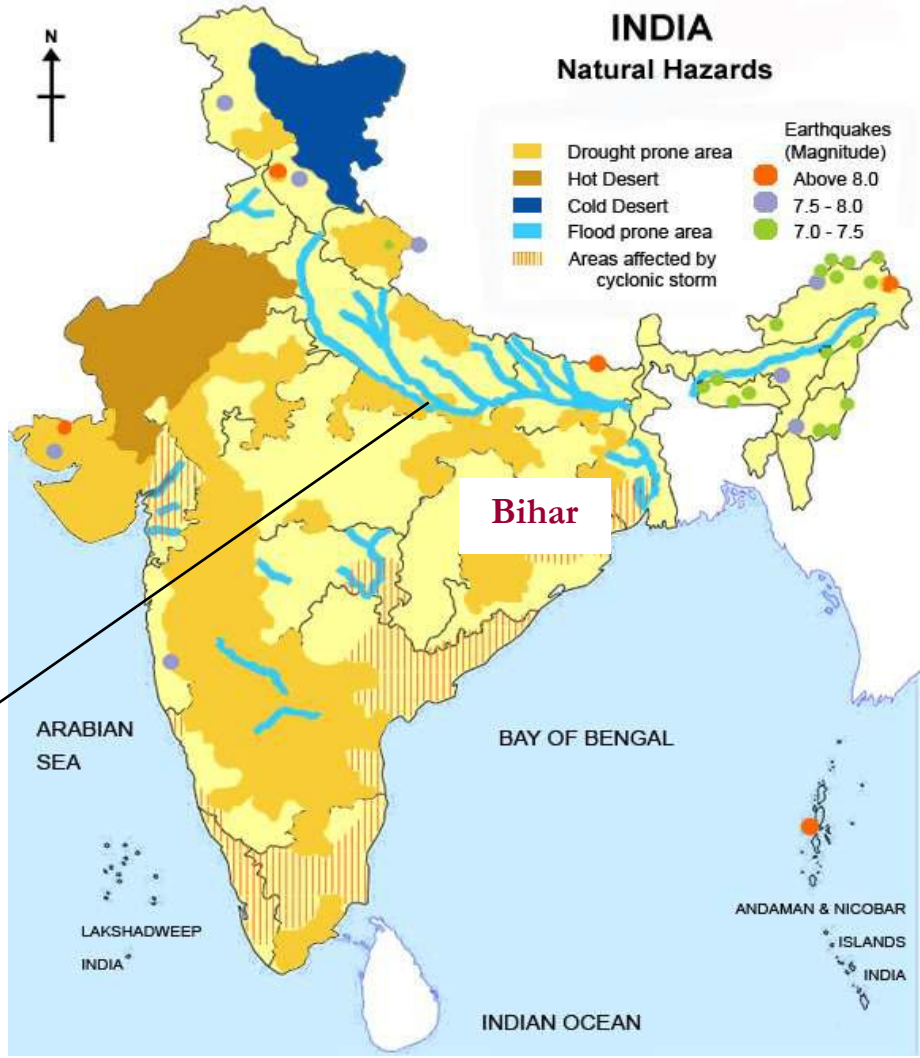
Research location within the broader context

- Growing concerns around food security
- Small farmers in the developing countries as most food-insecure
- Rice as a staple food-grain

Study site

- Bihar – a deficit state in terms of food-grain production
- Food Security Atlas of Bihar (2010) – Bottom 5, 1/3rd of the poor covered
- Linkages between access and entitlement to food (PDS) with food-grain production
- 'Rainbow revolution' – diverse, inclusive, sustainable agro-ecological principles

Research site – BIHAR,
Bodhgaya (Gaya)



State : Bihar (Eastern India)
District : Gaya (drought-prone and dalit presence)
Block : Bodhgaya (the first block to adopt SRI in Bihar)
Village : Shekhwara (the first village in Bodhgaya block to adopt SRI)

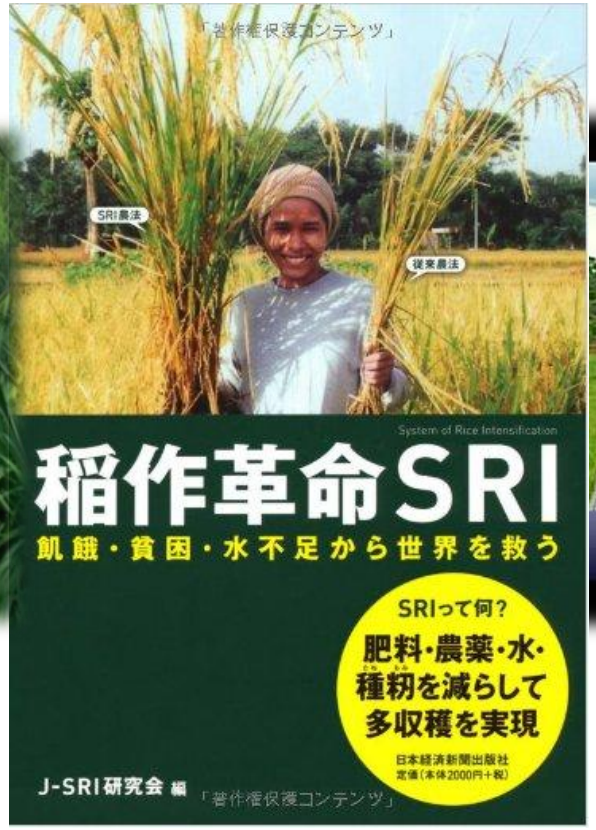
What is System of Rice Intensification (SRI)?

A grassroots innovation of rice cultivation which is yield-increasing and environment and small farmer-friendly

A set of agro-ecological practices (spacing, aeration, water and weed management) **that aims to establish healthy root-soil relationship around 6 core principles**

1. **Seed treatment** *(None)*
2. **Early sowing seedlings 8-12 days** *(30-35 days)*
3. **Single seedling line sowing with wide spacing, 10"x10"** *(random, 5-6 seedlings in a clump)*
4. **Water use for irrigation-moderate** *(continuously flooded)*
5. **Weeding- mechanical, using weeders** *(manual-hand weeding)*
6. **Emphasis on farm yard manure/compost** *(agro-chemicals)*

As a result ……



Claim of benefits –

Yield enhancement:	20%-100%
Reduction in seed usage:	up to 90%
Reduction in water use:	40% - 50%
Other interesting aspect:	GHG reducing potential, suitable for all kinds of seeds and farming systems

USP – "Grow more with less"

SRI and its links with Global Food Security

Predominant focus in literature

- Agronomic issues & contested claims on production and yield advantage
- Labour-intensiveness, suitability as an agriculture of the future
- Discussion around politics of knowledge

Gap: Gender and labour questions ??

My Research

- Change in practice and shifting dynamics of gender and labour
- Implications on wage, employment and social relations of production
- New modes of organising labour
- Implications on food security

Theoretical framework - Feminist political ecology

Key Findings

1. SRI-induced change in rice cultivation technique is leading to a **'visible' shift in gender and labour dynamics** for different categories of farmers

2. Change in technique in SRI (**transplanting and weeding**), in particular **introduction of technology (weeder) makes the practice both labour-intensive and labour saving at the same time**

1. **Food security** outcomes through SRI cultivation is **largely favourable for most farmers, but for some it has unfavourable** consequences.

Key change in practice….

Conventional Method

Transplantation

SRI

Random sowing, 5-6 saplings in a clump

Single sapling, sowing in a line/square pattern

Key change in practice….

Weeding

Conventional method

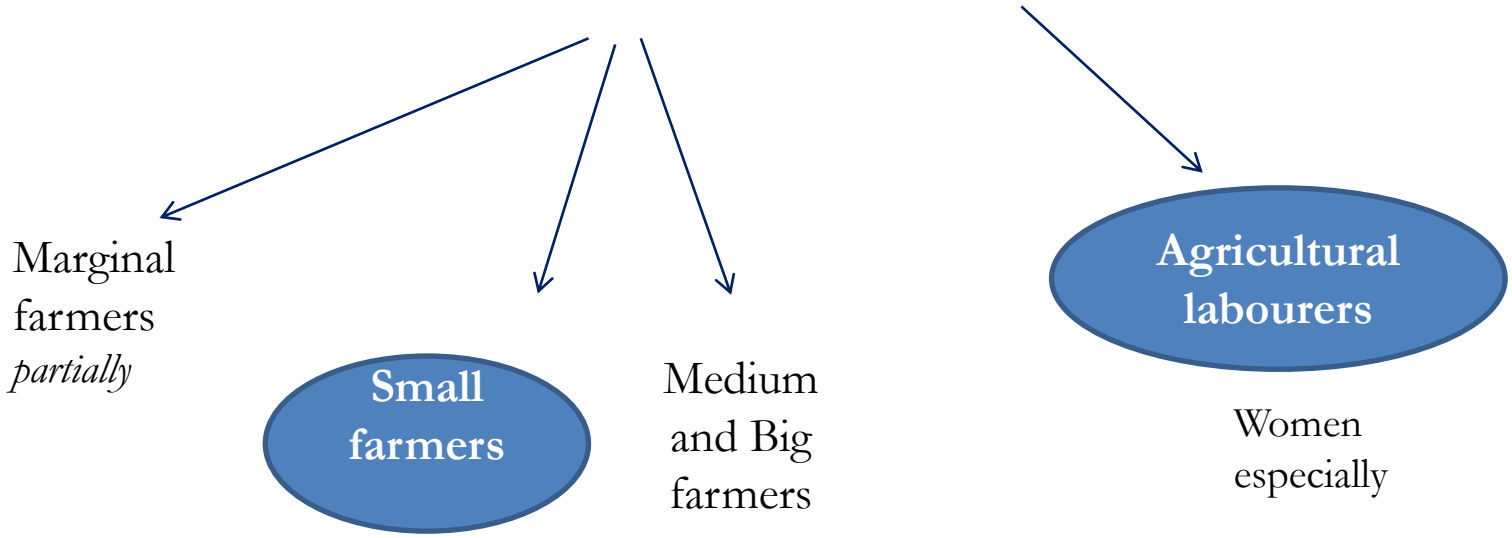
SRI

Table 1: Gender divisions of labour – New, existing and shifting

Agricultural Operations	Conventional Method	SRI Method	Increase/decline in work load in SRI
Pre- Harvesting			
1. Land preparation (main)	Men (W)	No change	No change
2. Nursery bed preparation	Men (HH+W)	No change	**Decreased**
3. Seedling treatment	Not Applicable	Women (HH)	**Increased** (minor)
4. Nursery sowing	Men (HH+W)	Men (HH)	**Decreased**
5. Seedling extraction and transportation to field site	Men (W)	Same	**Decreased**
6. Transplantation	Women (HH+E)	Same + girls	**Increased** (Varies)
7. Fertiliser application (inorganic/compost)	Men (HH)	No change	No change
8. Irrigation	Men (HH)	No change	No change
9. Weeding *(manual)*	Women (HH/W/E)	Not applicable (NA)	NA
10. Weeding *(with weeder)*	Not applicable	**Men** (HH+W)+boys	**Increased*** (↓ labour)

HH – household , W- waged labour, E- exchange labour

SRI - Winners and losers



Different standpoints, 'embodied experience', material realities

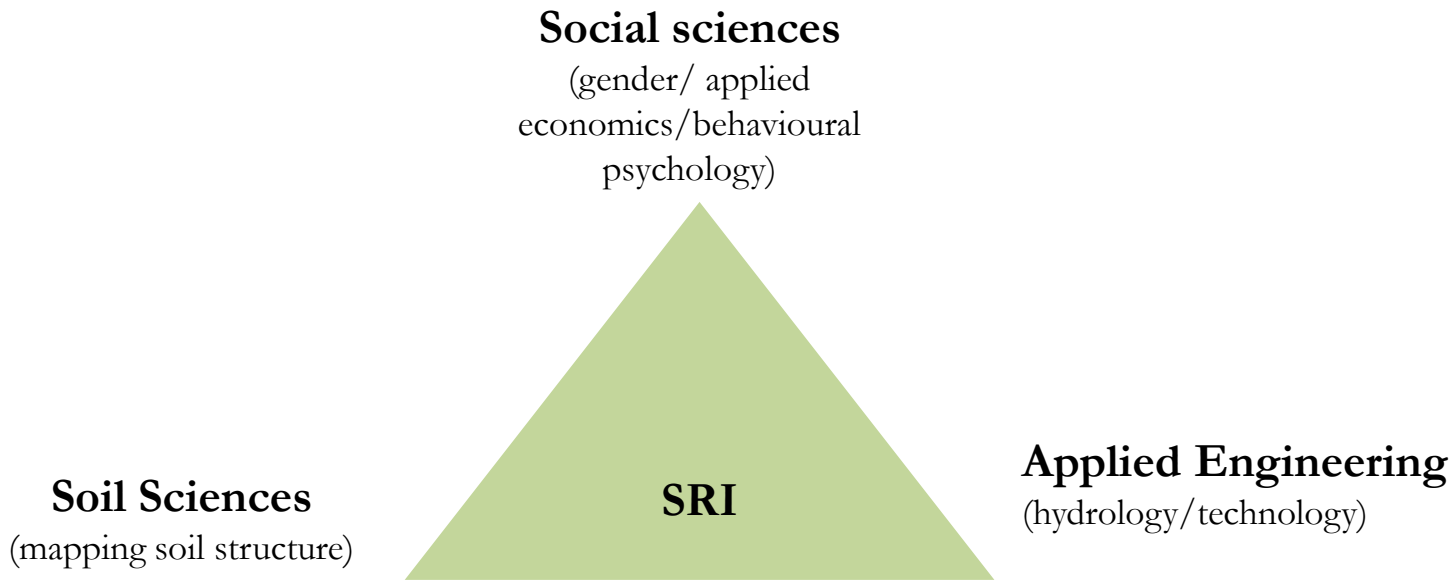
Conclusions

- **Heterogeneity of experience and outcomes, from food security, employability, visibility and mobility angle, some possibly leading to empowering experience while others not.**

- **Marginality and sustainability occurring as a simultaneous process within SRI?**

Scope of Enrichment through Interdisciplinary Research

Making SRI more inclusive ?



1. How might a mapping process of the soil enhance our understanding on soil types and time and labour requirement through mechanical weeding, gender-wise
2. How can hydrological understanding of the study site for water conservation measures through policy initiatives enable the poor to participate more than they are doing currently?
3. Understand ways in which economics and ergonomics can contribute in making technology (weeder) more cost-effective, gender-friendly and widely available in the local market (with follow up on Point 1)