

Understanding dynamics of labour in System of Rice Intensification (SRI): Insights from grassroots experiences in Odisha, India



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Presentation focus

- **Introduction**
 - Motivation, Knowledge Gap
 - Challenge of weed and weeding
 - Objectives and research questions
 - Materials and Methods
- **Findings**
- **Conclusion**

Globally, around a **billion people** – engaged in rice-farming.

50-80% labour - by **women** – often
less/unpaid, unrecognized

They use their **bodies** to feed us – so we survive

Half a billion and more - A **significant** population –
to impact and be impacted by any technology

Hence the issues of gender and body deserves attention

Mainstream agricultural technology evaluation studies – Missing?

**Gender and Bodily experiences from labourers’
perspective**

SRI is no exception

**Mainstream discussions on weed , weeding and weeder
in SRI literature focus:**

Discipline	Focus
Innovation history	Constraints in weeding
Ergonomics	Human energy expenditure / assessment of weeder models
Agronomy / weed science	Effect of weeding practices on yield
Economics	Time and expenditure

Challenge of weeds and weeding in SRI

- Conducive environment for faster weed growth (Planting of younger seedlings at wider spacing in non-flooded condition)
- Weed many times at specified intervals using new tool
- Climate change – consequences on weed growth – pressure on weed management due to changing weed ecology and water regime – pressure mainly on women
- Availability of required water level when needed (social, natural)
- Need to accommodate the new task with existing schedules

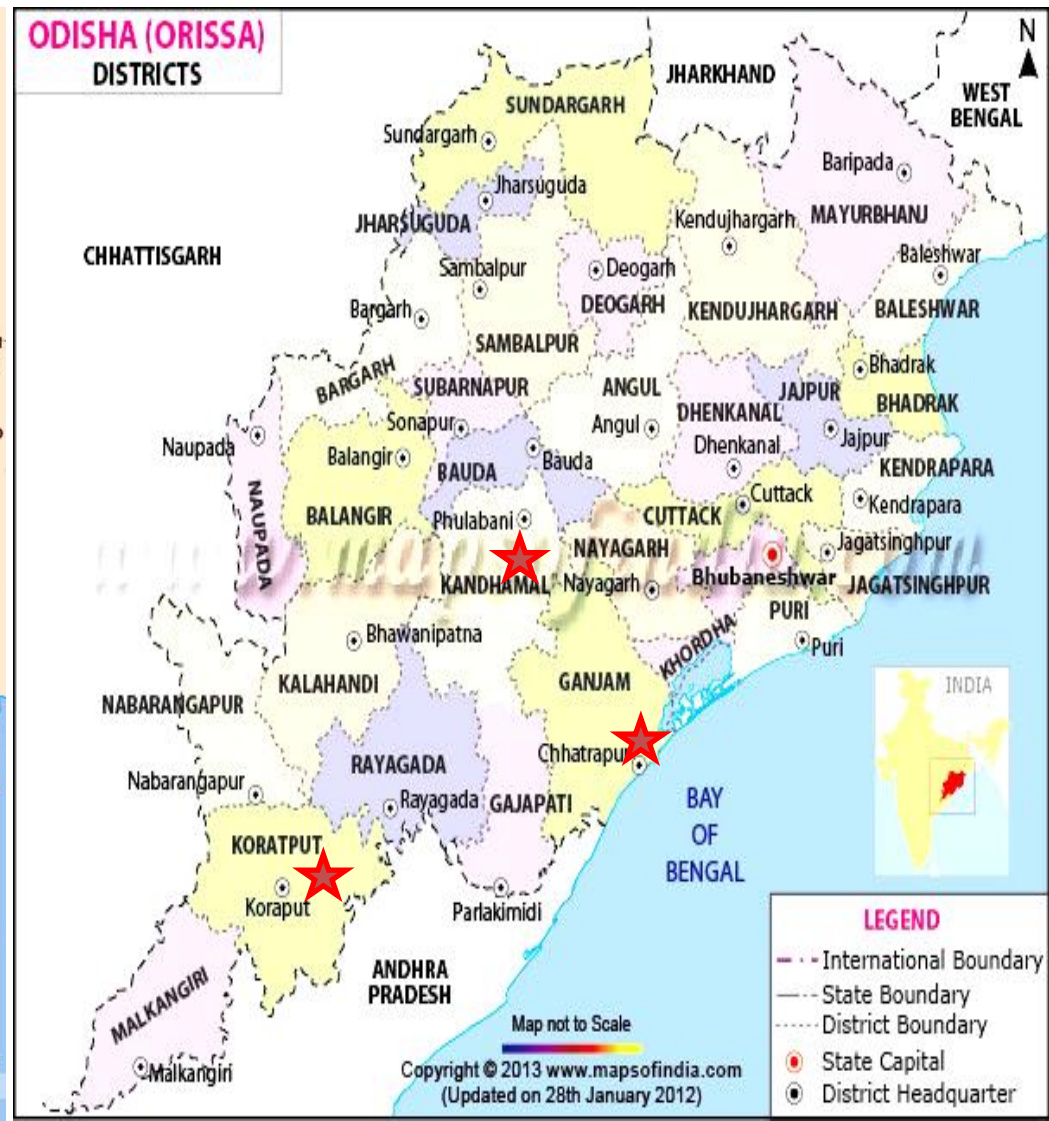
Objective

How SRI and labourers mutually shape each other?

Research questions

1. How the introduction of weeders for timely weeding as a part of SRI recommendation contribute to restructuring of gender division of labour and gender relations?
2. What happens to the bodies of labourers with the initiation of SRI with special reference to weeding?
3. How changes in gender relations and bodily experiences shape weeding tools and schedules?

Research sites



Materials and Methods

Materials:

- Purposive selection – 3 villages in 3 districts of Odisha, India having diverse agro-ecology, ethnic groups, rice cultivation practices, labour characteristics, and institutional interventions.
- General observation of agricultural operations - 2011-12,
- Focused on randomly selected 20 sample SRI farming families x 3 villages (having 545 rice plots) - in 2012

Materials and Methods

Methods:

- Multiple Parallel Case Study Design ;
- Exploratory in nature;
- Ethnographic approach

Primary sources:

- Focus Group Discussion
- Participant observation of tasks and measuring technology-specific materials and distances
- Individual interviews
- Story telling
- RaCoPA – Pain mapping tool

Participation of men and women in mechanical weeding - gender image of tool and task demystified

Tools are not only for men



Men relieved women or comfortable with posture and tool?

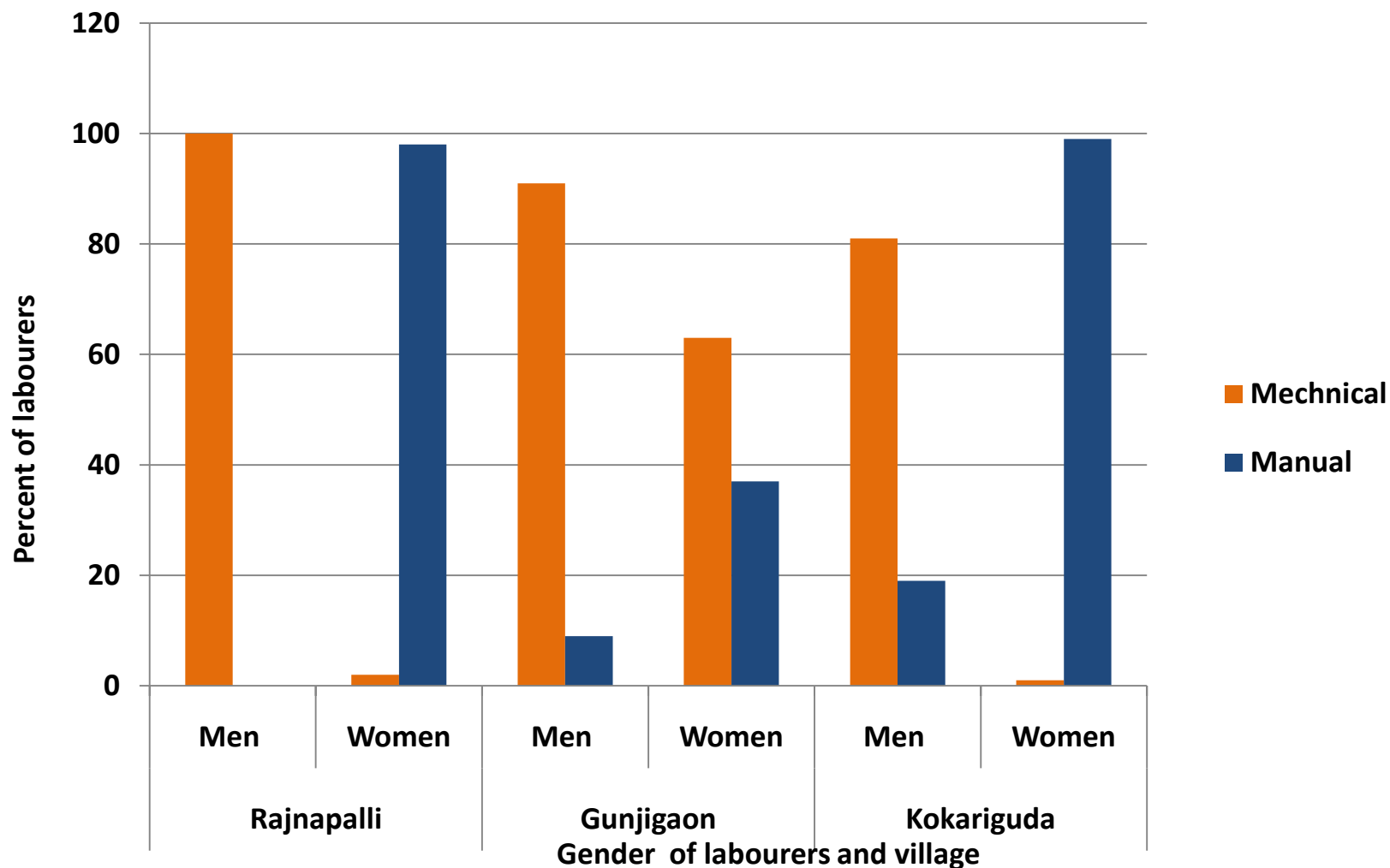
Reinforced gender image of tool?



Manual weeding: Continues to be women's job



Percent of men and women engaged in all weeding in 2012 *Kharif* season



Source: Field observation records, Kharif 2012
N=645

Gender of labourers – determinants

- **Environmental dynamics**
(weed growth and type, water regime, soil type)
- **Household dynamics , social dynamics**
(negotiation among household members, customary gender role in weeding, household gender roles, institutional membership, livelihood strategies)
- **Training / extension dynamics**
(provisioning of tool - availability, adequacy, accessibility, ownership , management, clientele of training)
- **Design of weeders**

Where women participated actively

- Ownership, management of weeders
- Acquisition of new knowledge, skill
- Sharing of knowledge



- New identity
- Feeling of empowerment
- Participation in mechanical weeding
- Motivated men folks to participate in weeding
- Share knowledge

Where women's participation not emphasized,

men manage and use weeders, often underestimate women's capacity

Few women started learning mechanical weeding on their own

Change in weeding practice, nature and size of group

Conventional :

- Range: From zero weeding to one manual weeding,
- Bigger size group (1- 7)
- Mostly women family labour and some hired labour, rarely shared labour used

SRI :

- 1-3 weeding
- Mostly 1-2 in mechanical and smaller size group in manual (1-5)
- Mostly family labour, few hired labour in case of manual weeding
- Men and women participate (men do mechanical weeding in 1 village)

Transitional dilemma due to introduction of new tool

Wage is determined by society

Men and women do the same task using same tool

Wage fixation has not yet taken place

Gender asymmetry in wage exists

Farmers doing weeding which they were not doing earlier

Men and women with new skills are not yet hired though demand is there

Task is gendered

Labourers don't own tools and do not hire

Common ownership of weeder - hiring rate is not yet fixed

High use of (women) family labour continues

Task requires different span of time

New tools , new schedules – re-disciplining body

ISSUE OF HANDS AND HANDLES

**Change in material milieu and work
pattern within social norms engage
bodies differently**



Understanding bodily experiences - Parameters

- Gender roles – off farm, on-farm
- Food intake, disease, child bearing and caring
- Embodiment of postures - cultural

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- Manual handling of materials
 - Posture
 - Work environment
 - Distance covered per unit of time / speed
 - Area of work
 - Total hours of work
 - Gender-wise work participation
 - Type of tools and equipments

- Manual handling of materials differ and is less – handling weeder, not grasses in mechanical weeding, no change in manual weeding
- Work time per unit of land is less, speed is more (16-25 hrs / ac), (30-50 mtrs x 18-20 cms/ minute) - in SRI at one time
(Up to 150 hrs / ac), (1 sq mtr max / minute)- in conv.
- Work environment is better and time remaining in that environment is less
- Some men participate in weeding
- Posture changes with use of weeder (model -specific)

BUT

**Recommendations could not be followed by all farmers
due to various reasons**

Hence gender-wise bodily (physical) experiences vary

**Mechanical weeding is
fun for them**



**Very few men or woman above 50
participate in mechanical weeding**



?

Speed or skill deter?

Energy expenditure

Variables	Manual weeding	Mechanical weeding
Sample size , gender	15 , Women	
Method of sample selection	Random	
Period of test	August 2013	
Range of age	18-40	
Range of weight	38-72	
Range of height	4.8 -5.5	
Type of tool	Mandva weeder	
Type of measuring instrument used	Oxymeter	
No. of reading taken	4	
Range of SpO2	93 - 99	92-100
Average SpO2	96	96
Range of PRbpm	75-160	76-184
Average PRbpm	117.5	130

However, Work –rest rhythms, postures, work environment, span of work time differ which have synergetic impact on body than short period energy use expressed in SpO2 and PRbpm .

Gender-wise Cross-technology Pain Experience of Labourers Engaged in Weeding

Gender, Method of cultivation	Conventional	SRI
Men		
Manual	No participation- no pain	Normally No participation- No pain, Sometimes when participate get pain in back, legs, knees
Use of weeder	Not used - no pain	Back, Shoulders, Hand, Palm New – injury by weeders
Women		
Manual	Knee, Thighs, Back Shoulder , Feet, Area under bangles, Area between fingers of hands and legs, Abrasion in skin - Severe	Knee, Thighs, Back, Shoulder, Feet, Abrasion in skin - Less (Weeder use reduced amount of work)
Use of weeder	Not used - no pain	Shoulder, Chest, Hands, Legs, Back New – injury by weeders

- Elderly men/women did not participate – less flexibility of bodies to use weeders
- Some men were reluctant/ did not participate imagining / experiencing additional work - shifted the work to women



Weeder Models

(Below - Left- Cono – 1st weeder - totally rejected , Right – Mandva variant used by men and women)



Conclusion

- Gender division of labour and bodily experiences - product and process in social and material interactions – hence different for men and women – Pattern of outcomes vary according to societies, agro-ecology, technology, extension strategies

(Contextual, Adaptation)

- More collaboration between men and women hh labour, easier to follow schedules, not no. of women members in house

(if environmental condition is appropriate)

- Introduction new tool , schedule – restructured gender division of labour. more in favour of women

- Women's physical workload is less - when men share work and recommendations are followed up to large extent
- Reduction in physical workload - not necessarily appreciated by all age groups
- Bodily experiences – potential contributor acceptance/ rejection of a tool / technology as a whole
- Bodily experiences - potential contributing factors for skilling
- Farmers – labourers are often considered as users of technology / tools, not involved in design development and improvement of tools / extension strategy .

This study draws attention of :

- **Feminist Technology Studies (FTS) scholars** to research agricultural technologies in developing countries which are complex and underrepresented,
- **Scholars evaluating agricultural technologies** to integrate body and gender aspects to understand technologies better, look at health issues in rice farming
- **Extension agencies and scientists** for involving men and women in choice, design/development of tools and application of technologies and extension strategies .

THANK YOU

Your inputs will strengthen my work



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