

UNDERSTANDING DRUDGERY IN RICE FARMING USING AN INNOVATIVE AND PARTICIPATORY TOOL: RAPID COMPARATIVE PAIN ASSESSMENT (RACOPA)

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INTRODUCTION

Agriculture continues to engage the largest segment of the population in India till today. Among all, the rice-field-workers, especially women, work mostly in wet environments for longer hours who fail to escape from the vicious circle of poverty, malnutrition and drudgery.



But historically drudgery assessment is often not integrated in mainstream technology impact assessment studies exclusion of which resulted in not developing appropriate mechanisms to address the health issues of a large vulnerable labouring group. On the other hand, social scientists, by and large, face the challenge of selecting recommended scientific methods or tools for drudgery and pain assessment that involve use of sophisticated and expensive instruments by skilled persons during the actual work in the rice field. In this context, it is extremely essential to design and use a participatory and innovative tool that can be employed by a large section of scientists studying technological impacts, designing extension strategies and appropriate tools friendly to workers.



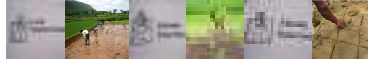
OBJECTIVES

The major objectives are to:

- Identify, map and compare gender-wise pain and drudgery experienced by the rice-field-workers in different rice growing systems using a participatory tool
- And to test the tool in different agro-ecological and social settings where people grow rice differently.

METHODOLOGY

As a part of the research project, it was attempted to understand the implications of System of Rice Intensification (SRI) of rice-field-workers in which drudgery issue has drawn attention. To comprehend this, gender-wise focussed group discussions were conducted with 20-25 randomly selected rice-field-workers in each group aged above eighteen in 3 purposively selected villages located in 3 districts, i.e., Ganjam, Koraput and Kandhamal in Odisha. First, gender-wise activities mostly done under different types of rice cultivation technologies were identified. Simple drawings of farmer like men and women were done on separate papers.



On both sides of a body, activities were drawn in simple line drawings in sequence as they mentioned. Then the participants had to join the activities with body parts by lines where they experience pain induced by that activity. During the process, the participants were actually involved in discussions and then finalising their decisions. This innovative and participatory pain assessment tool was named as RaCoPA. Later, the pain maps were converted into tabular and graphical formats.



Men and Women Busy in RaCoPA Exercise

RESULT:

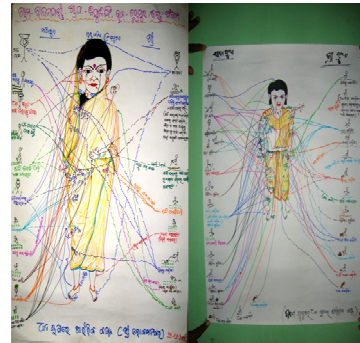
The exercise enabled to:

- understand the way people cultivate rice using diverse technologies in the same village,
 - gender-wise work pattern under different technologies, and
 - and also the way men and women connect their activities with health and perceive and articulate drudgery and pain.
- Women, who participated in the RaCoPA exercise in all 3 villages, mentioned that their body pain is considerably less in SRI compared to conventional transplanting method in the areas like nursery raising, uprooting seedlings and transporting to main field, transplantation and weeding as these activities are done differently.



Women explaining points of drudgery during RaCoPA exercise

Activities and Points of Pain as Articulated by Rice-Field-Workers



Physical Pain Experienced by Women Rice-Field-Workers in Rajnampali Village, Ganjam District

Activity	Body parts affected	
	Conventional Transplanting, Line Transplanting	SRI
Carrying compost and spreading	Head, Neck, Chest, Shoulders	Head, Neck, Chest, Shoulders
Cleaning weeds from the nursery plot	Hand, Waist	-
Nursery Bed Preparation	-	Little pain in hands and Legs
Watering the nursery if there is no rain	-	(Left hand, Left) side of Waist
Carrying the rice seeds to the nursery	Eyes, Nose, Mouth, Skin	-
Weeding from the nursery	Neck, Stomach, Waist	-
Uprooting seedlings, Cleaning, Making bundles	Neck, Hand, Waist, Knee	-
Uprooting seedlings and transporting	-	Waist, Wrist
Transporting seedling bundles and spreading in field	Neck, Shoulders, Hand, Waist, Leg	-
Transplanting	Knee, Thighs, Waist, Shoulders, Stomach, Feet, Area under hangles, Area between fingers of hands and legs	-
Marking and Transplanting	-	Lower leg
Weeding	Knee, Thighs, Waist, Shoulders, Stomach, Feet, Area under hangles, Area between fingers of hands and fingers of legs	-
Weeding using Mandva Weeder and Manual weeding	-	Shoulder, Chest, Hands, Legs, Waist
Harvesting (cutting the rice plants)	Knee, Back, Waist, Palm, Shoulders, Stomach, Eyes and Skin	Knee, Back, Waist, Palm, Shoulders, Stomach, Eyes and Skin

Physical Pain Experienced by Women Rice-Field-Workers in Gunjgaon Village, Kandhamal District

Methods of Rice Cultivation	Body parts affected	
	Conventional Transplanting, Line Transplanting	SRI
Carrying compost to the main field and spreading	Head, Shoulders, Back, Neck, Rib, Waist, Knees, Lower leg, Feet, Eyes, none	Head, Shoulders, Neck, Back, Waist, Knees, Lower leg, Feet, Eyes,
Carrying the seeds	Neck	-
Nursery Preparation	Neck, Shoulder, Hand, Waist, Palm, Thighs	-
Nursery bed preparation	-	Very little pain in hands
Uprooting seedlings, Cleaning, Making bundles, Transporting	Neck, Hand, Palm, Elbow, Waist, Thighs, Knees, Feet, wrist, Nails	-
Uprooting seedlings from nursery and transporting to main field	-	-
Transplanting	Neck, Palm, Back, Elbow, Waist, Thighs, Knees, Feet, wrist, Nails	-
Marking and Transplanting	-	Arms, Hands, Lower legs
Manual Weeding only	Hand, Palm, Back, Elbow, Waist, Thighs, Knees, Feet, Nails	-
Weeding using (Mandva) Weeder	-	Shoulders, Arm, Hand, Palm
Harvesting (cutting the rice plants)	Waist	-
Transporting the panicles	Head, Neck, Hands, Lower legs	Head, Neck, Hands, Lower legs
Cutting the straw	Waist, Hand	-

•However, the pain experienced during weeding using a weeder depends very much on the type of weeder used by them. Cono weeder is completely discarded by both men and women as it induced more pain whereas appropriately designed Mandva weeder has reduced the pain.



- Further, in SRI, participation of men in the activities that used to be women's domain like transplanting and weeding is reflected in the pain map of men that contribute to reduction of pain of women.
- However, tasks like ploughing, land levelling is still done by men for both methods which were considered being painful.
- Men experience additional pain in land levelling, channel making activities and weeding using a weeder, but got rid of the painful tasks of nursery raising, uprooting the seedlings and transporting that to main fields.

Physical Pain Experienced by Male Rice-Field-Workers in Rajnampali Village, Ganjam District

Activity	Body parts affected	
	Conventional Transplanting	SRI
Ploughing	Shoulder, Arms, Wrist, Palms, Thighs, Knees, Lower leg, Feet	Shoulder, Arms, Wrist, Palms, Thighs, Knees, Lower leg, Feet
Carrying compost to the main field	Head, Neck, Hands, Waist	Head, Neck, Hands, Waist
Ploughing of nursery plot	Shoulder, Arms, Wrist, Palms, Thighs, Knees, Lower leg, Feet	-
Nursery bed preparation	-	Very little pain in waist, hands, and palms
Carrying the seed to the nursery plot	-Head, Neck, hands, Lower leg	-
Levelling	-Face, Eyes, Ear, Mouth	-
Seed sowing	Wrist, Legs	Wrist, Legs
Channel making	Shoulders, Hands	-
Watering to the nursery area if there is no rain	Hands, Thigh, Waist	-
Fertiliser application	Shoulder, Hands	-
Ploughing, Puddling, Cleaning of bunds, Levelling, Fertiliser application	Hands, Shoulders, Neck, Chest, Hands, Wrist, Stomach, Waist, Thighs, Legs	Hands, Shoulders, Neck, Chest, Hands, Wrist, Stomach, Waist, Thighs, Legs
Transporting of seedlings and spreading the bundles	Head, Neck, Chest, Hands, Legs	-
Marking using rope marker and transplanting	-	Not much pain except in waist
Fertiliser application	Shoulders, Hands, Lower legs	Shoulders, Hands, Lower legs
Weeding using weeder	-	Hands, Chest, Waist, Shoulders, Legs
Water provisioning / Irrigation	Hands, Waist, Thighs	Hands, Waist, Thighs
Fertiliser application	Shoulders, Legs	-

Physical Pain Experienced by Male Rice-Field-Workers in Gunjgaon Village, Kandhamal District

Method of Rice Cultivation	Body parts affected	
	Conventional Transplanting, Line Transplanting	SRI
Ploughing	Shoulder, Arms, Palms, Thighs, Knees, Feet, Heel	Shoulder, Arms, Palms, Thighs, Knees, Feet, Heel
Bund cleaning, repair	Shoulders, Arms, Waist, Thighs	Shoulders, Arms, Waist, Thighs
Spreading compost	Hands, Legs	Hands, Legs
Nursery making	Neck, Shoulder, Arms, Wrist, Palms, Waist Thighs, Knees, Lower leg, Heels	-
Nursery - Bed preparation	-	Very little pain in hands, and palms
Seed sowing	Shoulders, Hands	-
Ploughing, Puddling, Levelling	Neck, Shoulder, Hands, Palm, Back, Legs	-
Ploughing, Puddling, Levelling, Channel making	-	Neck, Shoulder, Hands, Palm, Back, Thighs, Knees, Legs
Uprooting the seedlings from nursery, Transporting of seedlings and spreading seedlings	Shoulder, Palm, Rib, Waist	-
Marking using rope marker and transplanting (in family farms only)	-	Not much pain except in waist
Transplanting (in family farms only)	Neck, Shoulders, Palms, Elbow, Waist, Thighs, Knees	-
Weeding using weeder	-	Shoulders, Hands, Palm, Waist
Carrying harvested panicles (Without straw)	Head, Neck, Back, Hands, Legs	-
Carrying harvested rice bundles (with straw)	-	Head, Neck, Back, Legs
Threshing, Winnowing, Packing and transporting to home	Neck, Back, Shoulders, Hands, Palms, Waist, Legs, Eyes, Nose	- Neck, Back, Shoulders, Hands, Palms, Waist, Legs, Eyes, Nose

•When the tool was used in different agro-ecological and social settings, it was found that both the researcher and the participants were comfortable with the process.



Women explaining the way they carry the seedlings in conventional farming during RaCoPA exercise

•But a problem that remained unresolved is pointing the skin (which covers the whole body) in the body map where people experience pain.

•RaCoPA can be used in other fields also besides rice cultivation as an auxiliary pain and drudgery diagnostic tool even before taking up ergonomic studies.

CONCLUSION:

Drudgery is part of the package of a specific technological prescription in a given physical environment. When technologies are assessed from experts' perspective, yield and expenditure are often given priority, but once it is assessed from the labourers' perspective, implications of the technology on the labouring bodies will be hard to ignore.

Though pain is a personal experience, it was found that when many people of similar age living in similar environment perform similar tasks while using one specific technology, experience similar type of pain in the same body parts. At the same time the same people also perform different tasks especially to grow rice as rice grows on different terrains in the same village. They have the ability to differentiate between the activities and pain induced by those activities and articulate when they discuss about the activities by seeing the pictures.



Same work of harvesting done differently: cutting the panicles only in standing position and cutting the whole plant at ground level in bending position - Experience of pain differ

Not only gender division of work varies, also the experience of pain varies under different rice growing technologies. With the gender shift in work, drudgery shifts not only from men to women or vice versa, also intensity of pain is changed which is well articulated by men and women. Change in management practices with the introduction of a new technology like SRI brings reconfiguration mostly in women's work and made some works like nursery raising redundant for men. But line transplanting did not bring too much change in drudgery experiences like SRI.

By using RaCoPA, it was found that SRI is friendlier especially to women rice-field-workers in comparison to conventional transplanting method and line transplanting method across agro-ecological zones and social settings.

While conducting the exercise, the participants themselves told that they did not realise that they do so many things and experience so much drudgery as they accepted these as part of their life. Many of them expressed that no one has ever discussed these matters with them. They become aware of their own work and body in relation to rice farming for the first time.

With little training, RaCoPA as a participatory diagnostic pain mapping visual tool, can easily be used by a large number of researchers to assess the implication of different technologies on labouring bodies and it will help in (1) participatory technology development and (2) participatory extension strategy development while promoting and using any technology.

Based on the pain map, further research on health issues can be undertaken in rice farming across technologies.

