

Making smallholder resilient agriculture work for women farmers : The case of system of rice intensification (SRI) in India

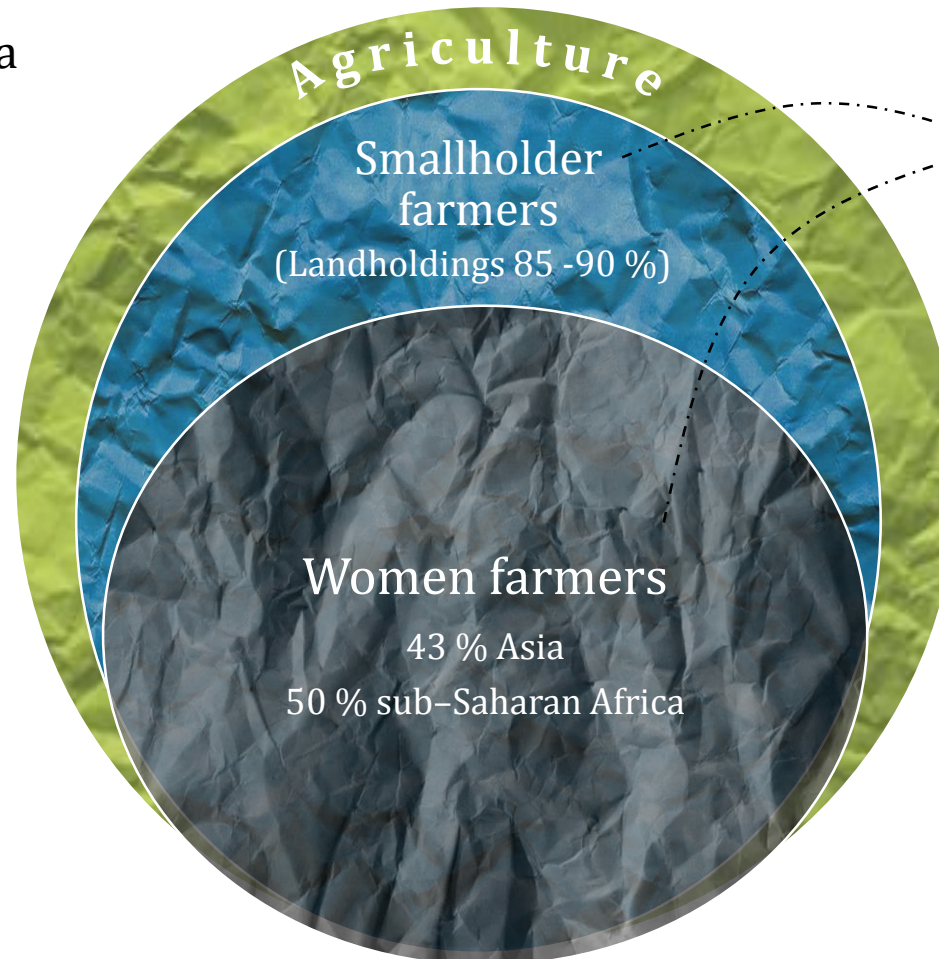
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The case for smallholder agriculture, and women farmers

- Population – 500 million
- Produce – 80% of food consumed in Asia and sub-Saharan Africa
- Support – 2 billion people
- Standard model – ‘yield ceiling’ issues, apart from others

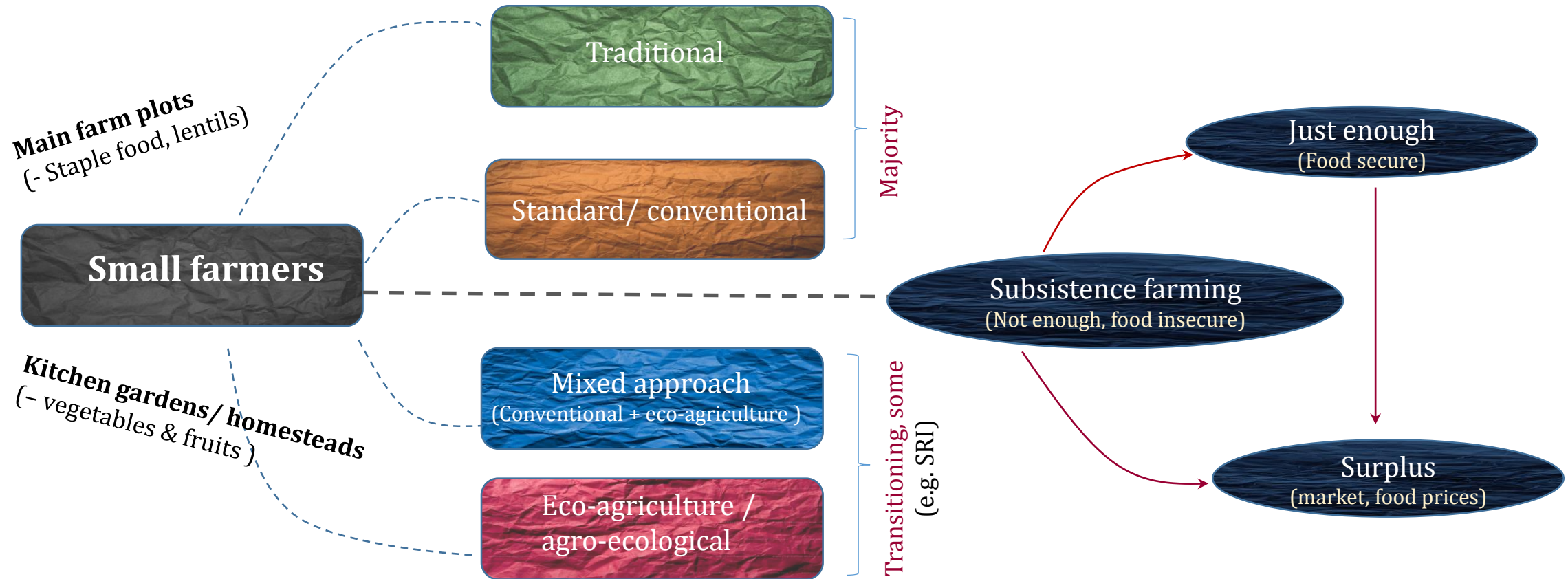
(IFAD 2013, FAO’s SOFA Report 2014)



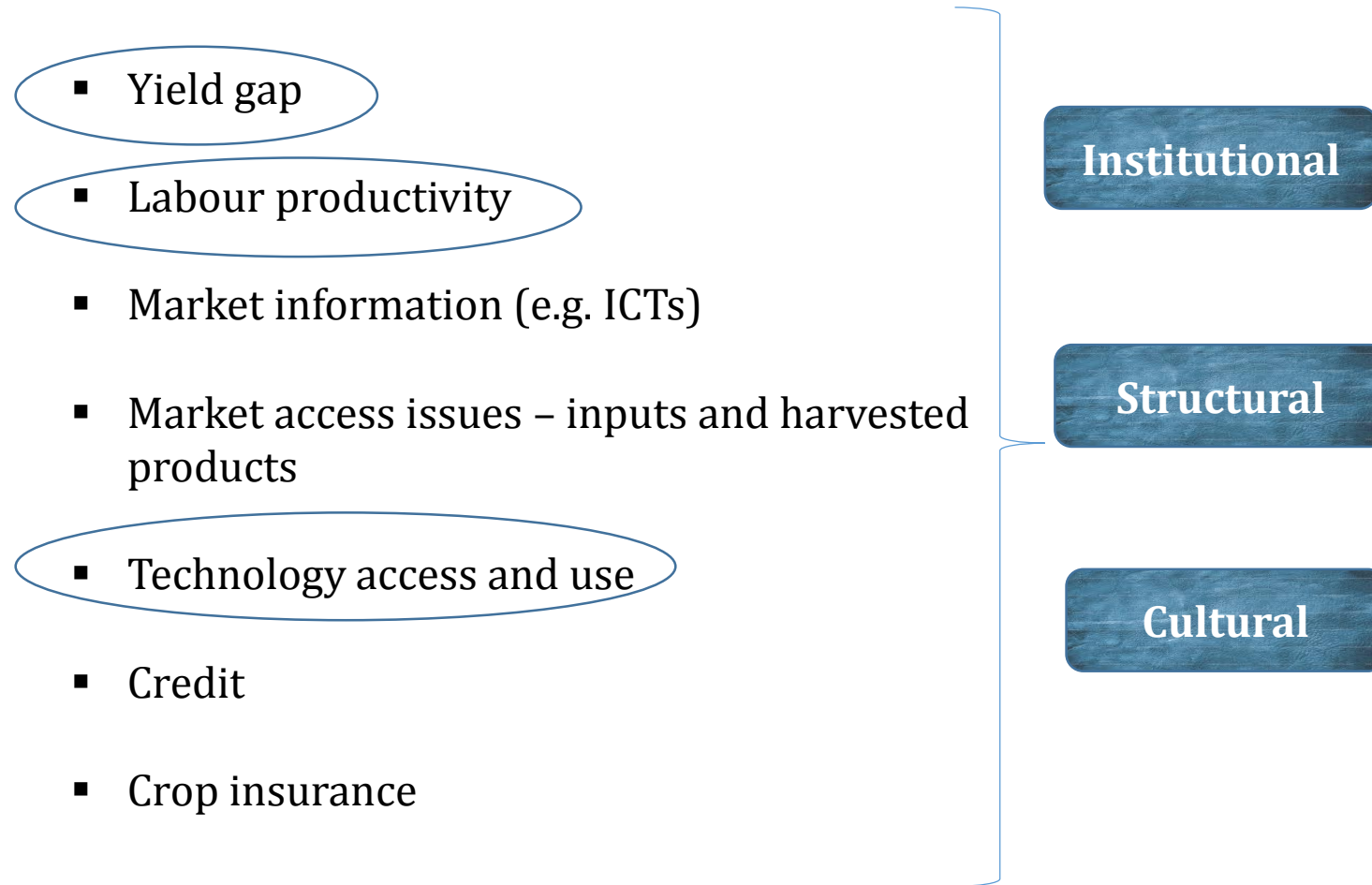
Smallholders & women farmers

- Potential role in food security
- Women farmers, key to food and nutrition security, ‘agents of change’

Smallholder typology and development pathways



Smallholders: Key issues and challenges



Investment in smallholders

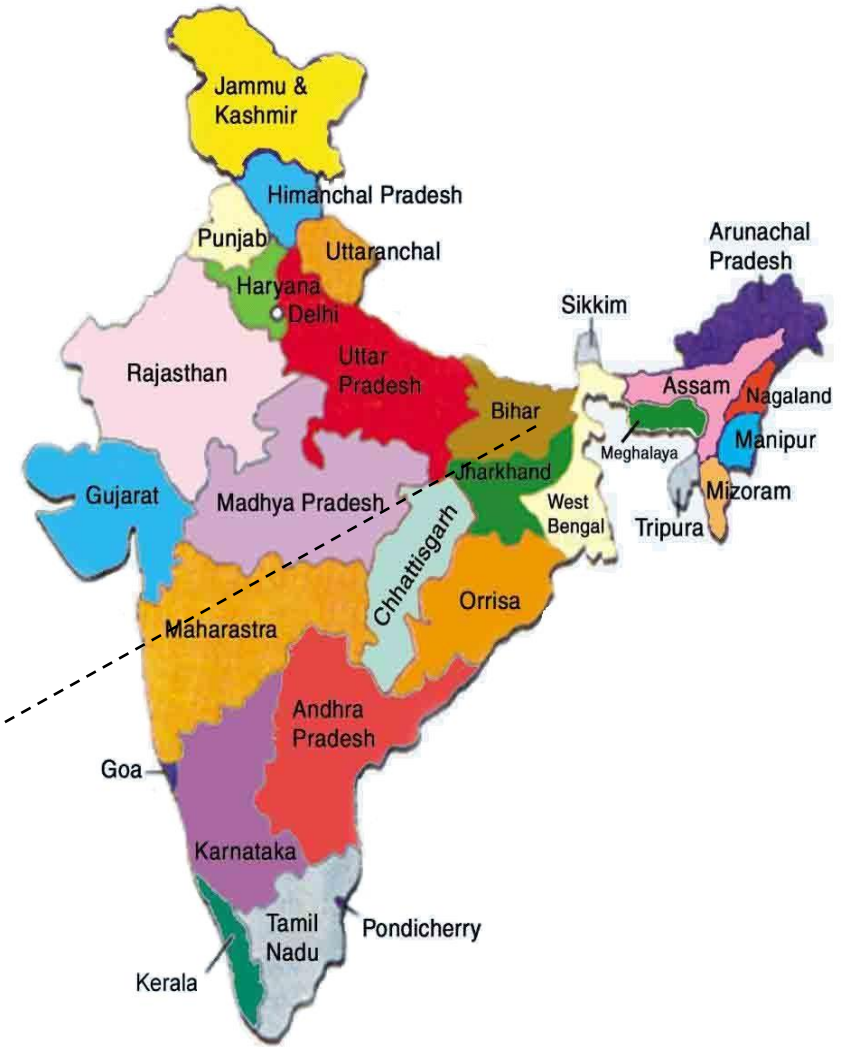
(e.g) The World Bank, FAO, IFAD, Bill Gates Foundation & others

Case study: System of rice intensification (SRI) in India

Technology

Gender

Labour



SRI ?

An alternative rice growing technique, ecologically sensitive, less-capital intensive, small-farmer friendly and hinges on maintaining healthy soil-plant relationship

Differences between conventional method of rice cultivation and SRI

Agricultural activities	Conventional Method	SRI
1. Seed treatment	None	Yes
2. Age of seedlings at sowing	30-35 days	8-12 days
3. Transplantation	Random, 5-6 seedlings in a clump	Single seedling, line sowing with wide spacing, 10"x10"
4. Irrigation	Continuously flooded	Water use for irrigation – moderate, alternate wetting and drying
5. Weeding	Manual - hand weeding	Weeding - mechanical weeders
6. Fertiliser application	Agro-chemicals	Emphasis on farm yard manure/compost

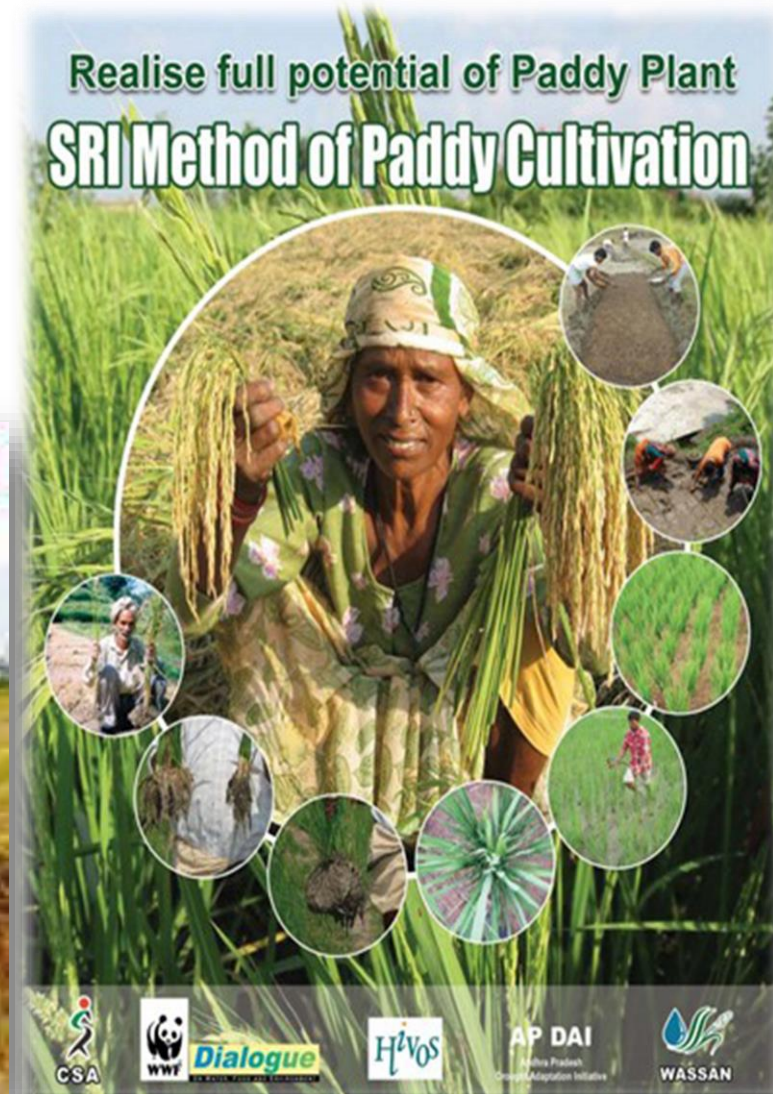
Source: Norman Uphoff 2002

Claims

Yield enhancement:	20%-100%
Reduction in seed usage:	up to 90%
Reduction in water use:	40% - 50%
Others:	GHG reducing potential (CH ₄), suitable for all kinds of seeds and farming systems, increased soil microbiota

Labour and gender question ?

USP – “Grow more with less”, climate resilient



The technology, and the issue?

Wider spacing of single, young seedlings under non-flooded field condition creates a conducive environment for excessive weed growth in SRI rice fields. **(Impact on productivity and grain quality)**

Conventional weed management method in rice

- Chemical (herbicides)
- Non-chemical (water management - flooded water conditions)
- Manual (hand weeding, women)

SRI's small technological solution & claims

- Frequent weeding, through the weeder (a small-handheld device) to control excessive weed problem
- Saves labour cost and enhances labour productivity
- Ergonomic design of the weeder - potential for drudgery reduction of women farmers



An SRI rice field



The weeder



My research findings

1) Re-orientation of workspaces, with men displacing women farm workers

Conventional Method



SRI



Gendered impacts on employment and wage pattern

*Pre-harvesting operations (in person days/ha)**

Size class	Labour saved (men) (A)			Labour saved (women) (B)		
	Conventional	SRI	Difference	Conventional	SRI	Difference
Small Farmer	63	60	- 3	114.1	87.4	- 26.7
SmML Farmers	74.4	90.0	+ 15.6	123.7	91	- 32.7

Weeding – 1/3rd labour

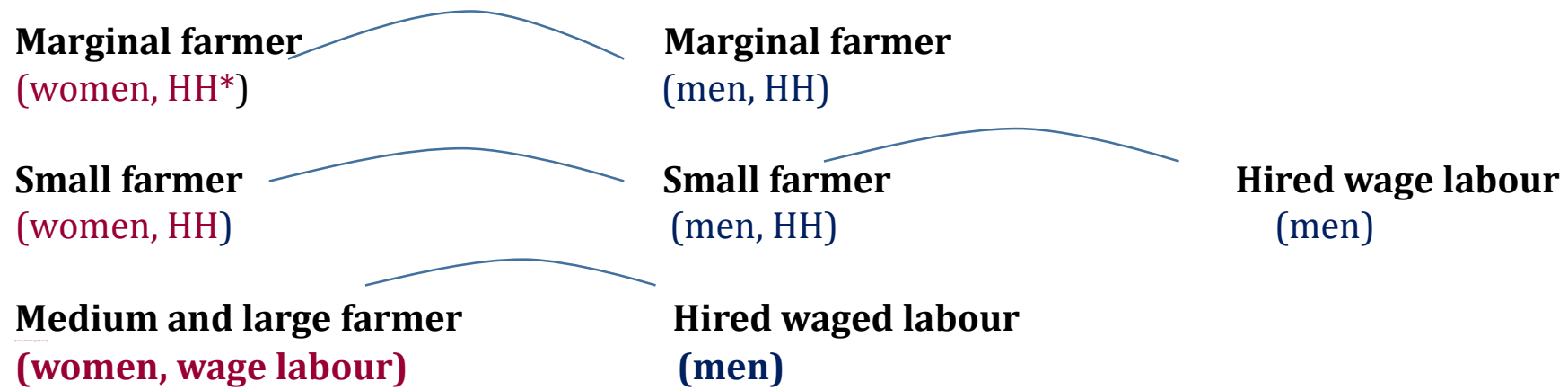
Source: Authors research

SmML Farmers: Semi-medium, medium and large farmers

+ sign increase in labour requirement, - sign decrease in labour requirement

* Farmers with more than 3 years of SRI adoption

Pattern of displacement from within and outside the household



* HH - Household

Logics of displacement ?

*"...It is not that women cannot operate the weeder. But the fact it is slightly **heavy work** that's why it is usually the men who operate the weeder in the village..."*

- A male VRP in one of the studied village

Light and heavy work, cultural norms of appropriateness based on caste and gender, efficiency arguments

Self withdrawal by women

(solitary work requirement and vulnerability; gender, work and pay disparity, happy to see their men help in the farm work)



Light work ?



Logic of displacement, fair ?

Weeding practices in the research site *(in person days/ha)**

Recommended practice:
3 weedings with the weeder

Weeding	No of person days	Wages paid (in Kg. rice)	Additional incentives	Total costs (in INR)
Actual practice (SRI)				
2 weedings with weeders (men) + 1 manual hand weeding (women)	56.25	303.75 (3.0 quintals)	Piyaki [#]	6525
Gender-friendly (SRI)				
3 weedings with the weeders (women)	50.63	202.5 (2.0 quintals)	None	4050

Source: Authors research

[#] *Piyaki* is the extra Rs. 20/- that is paid to men only for alcohol

Wage (women) - @ 4 kilograms of rice/day; **Wage (men)** - @ 5 kilograms of rice/day

* Farmers with more than 3 years of SRI adoption

2) Current access mechanisms of the weeders, an issue

- Subsidised and distributed to small farmers as part of '**SRI Kit**' *only* during State events [*Kharif Mahotsav, Kisan Mela* (Farmers Fair)]
- Evidences of elite capture of schemes, few households, expanding collection of weeders by few HH
- NGOs distributing 8-10 weeders to the Village Resource Persons (VRPs)

Creating new or exacerbating old power equations

How can it be addressed ?

- Bridge the accessibility issues, tap the women SHG groups, instead of just the VRP
- Create spaces to train women farmers to operate the weeder, cultural norms are not fixed
- Incentivise local production of the weeders
- Encourage women agricultural labourers to own the asset (the weeder as a necessary tool of employment)
- GENDER BUDGETING in agriculture

ATMA 'ropanhaar training', Bodhgaya



Why not in technology use (e.g. the weeder) ??

Gender budgets of Bihar

Years	Total Outlays for women (in crores)	Total outlays for the related departments	Percentage change
2009-2010	3356.9	20354.4 <i>(47446.3)</i>	16.5 <i>(7.1)</i>
2010-2011	4658.6	21652.7 <i>(53758.6)</i>	21.5 <i>(8.7)</i>
2011-2012	6088.1	27841.6 <i>(65325.9)</i>	21.9 <i>(9.3)</i>
2012-2013	7835.6	34615.4 <i>(78686.8)</i>	22.7 <i>(10.0)</i>
2013-2014	9602.4	40217.4 <i>(92087.9)</i>	23.9 <i>(10.4)</i>

Source: Author compiled (Economic survey of Bihar, various years)

[13/31 departments (e.g. Education, Health, Rural Development, Urban Development and Housing, Panchayati Raj, Labour, Social Welfare, Scheduled Caste and Scheduled Tribes Welfare, Public Health Engineering and Minority Welfare)]

AGRICULTURE ???

Discourse and practice – Mismatch/partial visibilisation ?

‘ ...In Cambodia, Oxfam is also promoting complementary innovations such as a handheld rotary weeder. The innovation not only reduces the need for herbicides, but it enables women to weed crops much more quickly and efficiently. Thus, the weeder is socially empowering and addresses time poverty for women...’ - Oxfam Report, 2014

‘...Women labourers find the ergonomically manufactured weeders more user friendly...’ – Barah, 2009, p. 211



OBC women farmer ‘**exhibiting the ability**’ to use the weeder

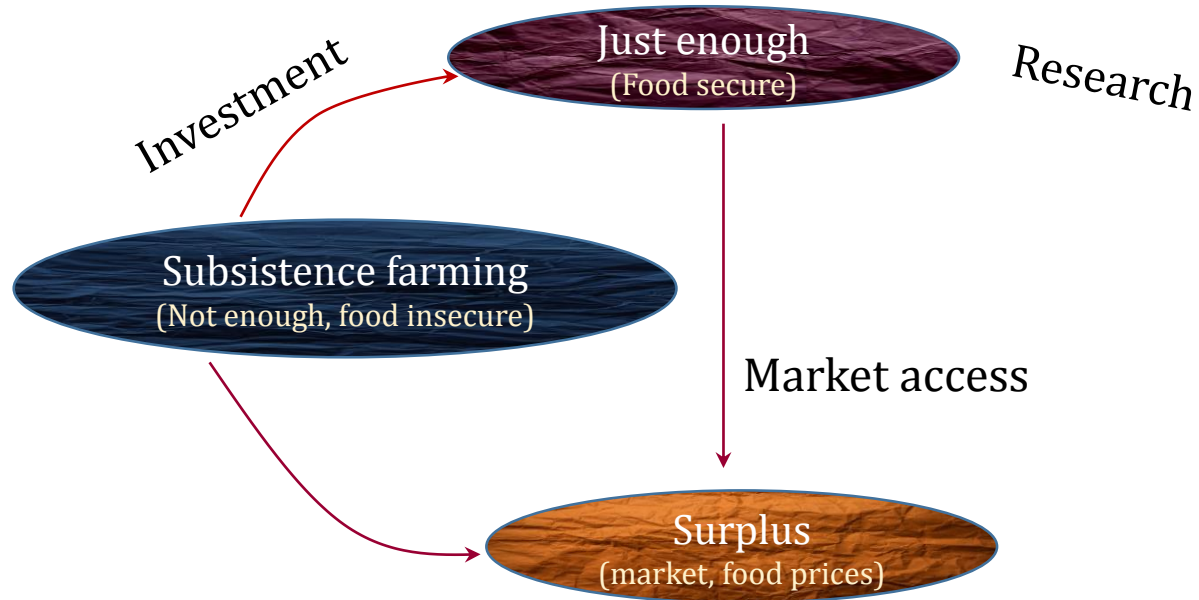


Republic Day celebrations, Gaya



‘ **On ground reality**’

What trajectory ?



Standard industrialised model, in small doses ??

Dependency & staggered debt ?

Autonomy ?

Smallholder characteristics

- Farm and residence in close proximity
- Site of production, is site of consumption
- Embeddedness in social/kinship ties and agrarian relationships locally
- Displacement (gendered) - to go where to ?
- Smallholder farming - last bastion of agro-biodiversity

Conclusions and the way forward ...

- Introduction of technology has certainly reduced labour time, but it is also leading to material outcomes which are highly gendered; in some ways reinforcing the existing gender inequities.
- Sustainable, smallholder agriculture which is likely to be mediated by small technological interventions, outcomes that enhances or reinforces gender inequities to be reduced to the minimum.
- To view labour as 'embodied' beyond numbers, not in gender-neutral terms which is acquirable, replaceable in the 'capital-labour relation' sense.
- 'Agents of change' to '*agents equipped* to bring about the change' (e.g. gender budgeting)
- Recognition ultimate agrarian skills to deal with complex environment rests with this category of farmers, all that is needed is a little catalytic push.
- Constraints to participation to be minimised – structural, institutional, cultural