

Adapting Agriculture in
Semi-Arid India to a
Global Temperature Rise of **1.5°C**



Changes in ecosystem services in semi-arid areas & impact on gender roles

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(Under publication...)



With changes in land use over a 20 year period...

What has changed?*

How are gender roles affected?

- Increased cropping intensity
- Change in cropping pattern
- Expanding settlements
- Change in availability and quality of ground and surface water
- Livestock pattern and fodder demands

A. Roles and responsibilities

B. Drudgery

C. Decision making power

D. Household income

*Duraisamy, V., Bendapudi, R., & Jadhav, A. (2018). Identifying hotspots in land use land cover change and the drivers in a semi-arid region of India. *Environmental monitoring and assessment*, 190(9), 535.

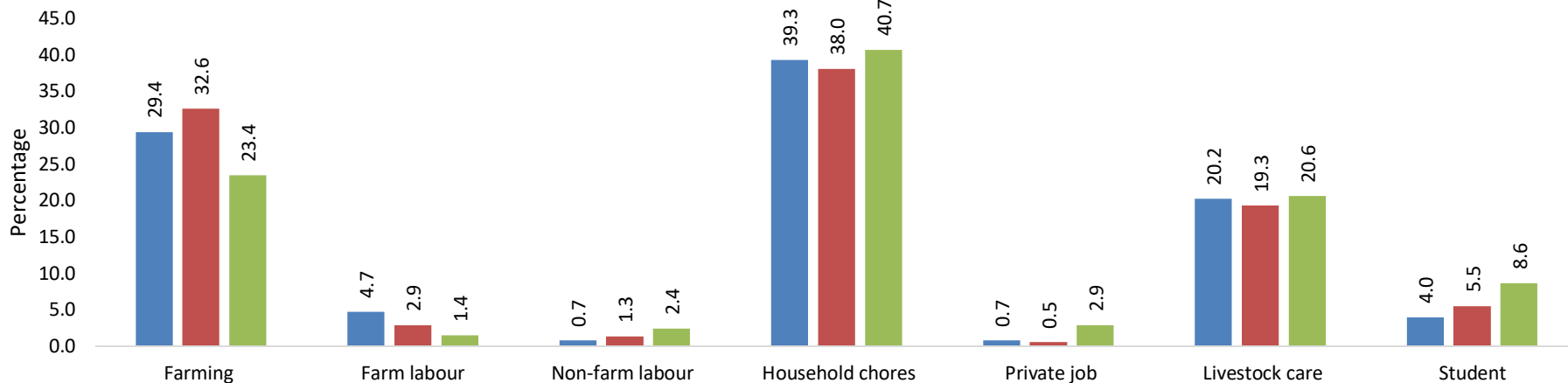
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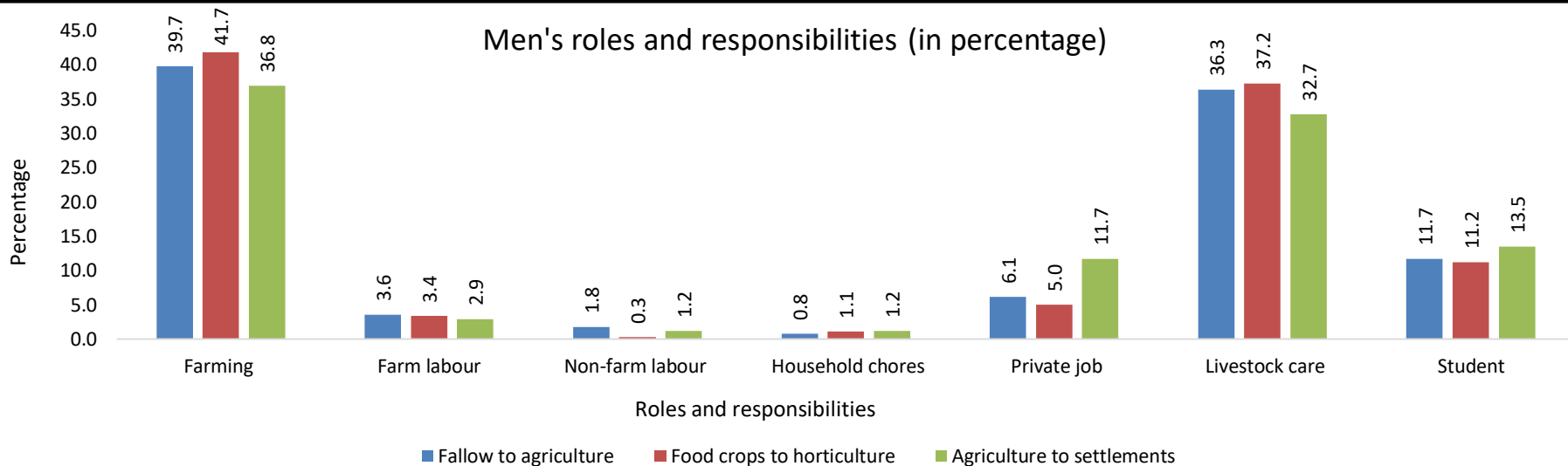
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A. ROLES AND RESPONSIBILITIES

Women's roles and responsibilities (in percentage)



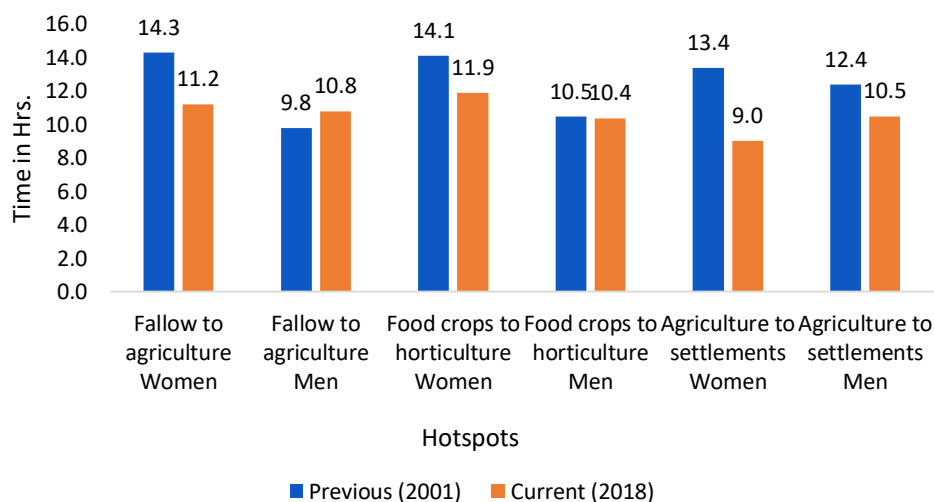
Men's roles and responsibilities (in percentage)



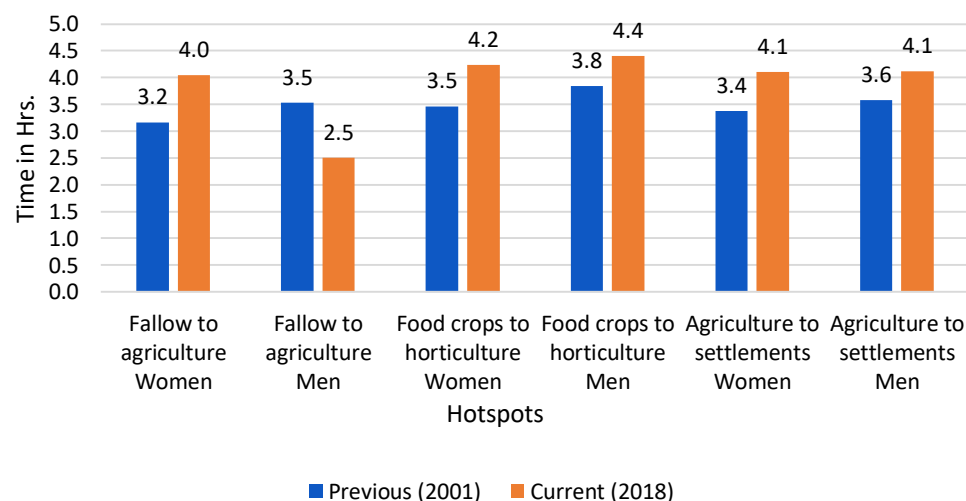


B. IMPACT ON WORKLOAD (DRUDGERY)

Change in average working hours



Change in average leisure time



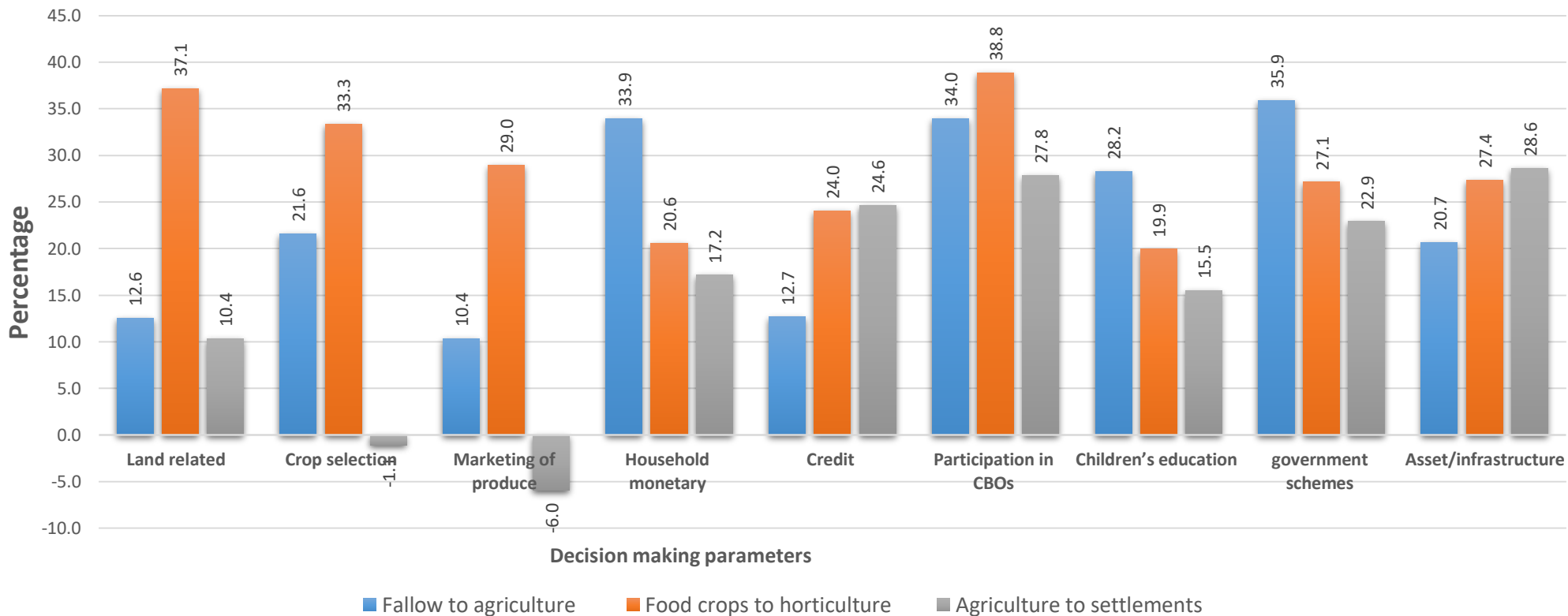
- Women: working hours ↓ + leisure time ↑ = drudgery ↓ (in all three hotspots)
- Men:
 - a. Fallow to agriculture: working hours ↑ + leisure time ↓ = drudgery ↑
 - b. Food crops to horticulture and agriculture to settlements: Working hours ↓ + leisure time ↑ = drudgery ↓
- Unlike the areas studied here, in Bhokardan, the workload is higher for women as compared to men. This can be attributed the continued usage of traditional equipment, among other reasons.*

*D'Souza M. et.al (2018) Towards Resilient Development in Rural Bhokardan Block, Jalna: Some Strategic Recommendations based on Contextual Findings (under publication)



C. IMPACT ON DECISION MAKING

Percentage change in decision making of women



Similarly, in Bhokardan, for all agriculture decisions, the men of the family take decisions for what is finally to be done with regard to choice of commercial crops, credit, crop insurance and market transactions.*

*D'Souza M. et.al (2018) Towards Resilient Development in Rural Bhokardan Block, Jalna: Some Strategic Recommendations based on Contextual Findings (under publication)

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D. CHANGE IN HOUSEHOLD INCOME SOURCE

Income Sources	Period	Fallow to agriculture	Food crops to horticulture	Agriculture to settlements
Agriculture	Earlier	97%	91%	↑ 92%
	Present	98%	95%	↓ 79%
Farm Labour	Earlier	14%	20%	15%
	Present	11%	15%	13%
Non-Farm Labour	Earlier	5%	1%	6%
	Present	↑ 12%	↑ 5%	↑ 12%
Livestock Rearing	Earlier	47%	64%	63%
	Present	↑ 75%	↑ 83%	63%
Micro Business	Earlier	1%	0%	0%
	Present	4%	0%	6%
Govt/Pvt Job	Earlier	3%	3%	10%
	Present	↑ 17%	↑ 10%	↑ 25%

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DRIVERS OF CHANGE IN GENDER ASPECTS

Institutional factors

Govt. policy
Family structure changes
Market access and credit facilities etc.

Technological factors

Tube well technology
Mechanization in agriculture etc.

Natural factors

High rainfall variability (prolonged dry spells, frequent droughts etc.)

Human factors

Increased in education level
Having different skill sets
Desire to luxurious life style etc.



THANK YOU!



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