Eva Goldmann, Tanay Joshi, Amritbir Riar

Tropentag 2020:

Food and nutrition security and its resilience to global crises

Potential of crop diversification of organic cotton-based farming systems in India to increase farmers livelihoods

Background

- Continuous trends towards specialization in cotton-based farming systems in India
- Strong dependency of farmers on cotton production for income generation
- 47% of global organic cotton production stems from India
- > 220 000 ha
- > 140 000 farmers, mostly small-holders (< 2ha) [1]

Aim

To assess the agronomic, environmental and economic benefits of different crop diversification options, through crop rotations and intercropping, for organic-cotton farmers in India to increase their livelihoods

Methods

We applied a mixed methods approach: a situation analysis (problem tree method), a literature review (scientific publication, government data and recommendations, extension service publications), and a strong focus on stakeholder involvement through interviews (>40 participants) and workshops.

Results

- Different crop combinations for a two year crop rotation are suitable for organic cotton-based farming systems:
  - 1. year: Cotton – Legume
  - 2. year: Legume/ Cereal/ Oilseed – Legume/Cereal/ Oilseed

Challenges

- Risk bearing capacity of farmers
- Know-how to manage multi-cropping systems
- Little produce amount – pooling is required to reach marketable quantities
- Infrastructure to link farmers to markets is missing
- Lack of market opportunities for organic produce

Conclusion

- Different suitable crop combinations
- More know-how needed on the management of multi-cropping organic-cotton based systems
- Potential of crop combinations is determined by farm performance and price
- To positively contribute to farmers' livelihoods market access needs to be granted
- Action from all stakeholders is needed

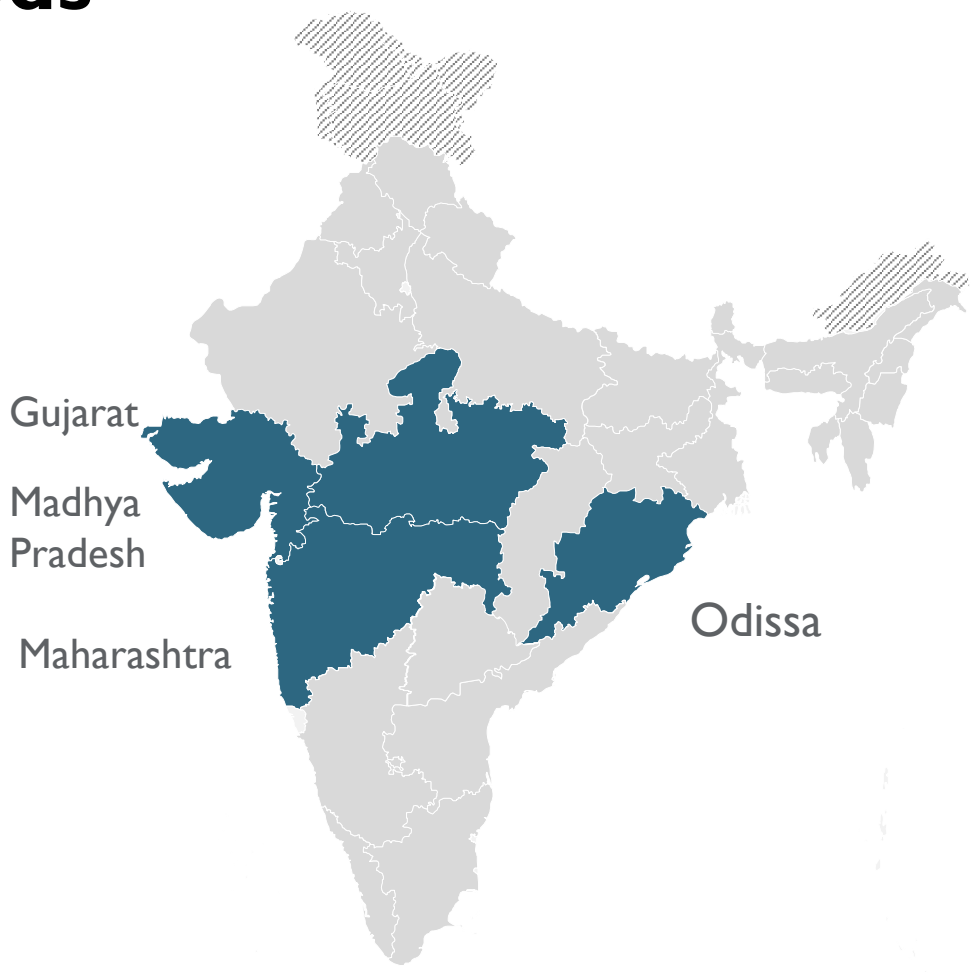
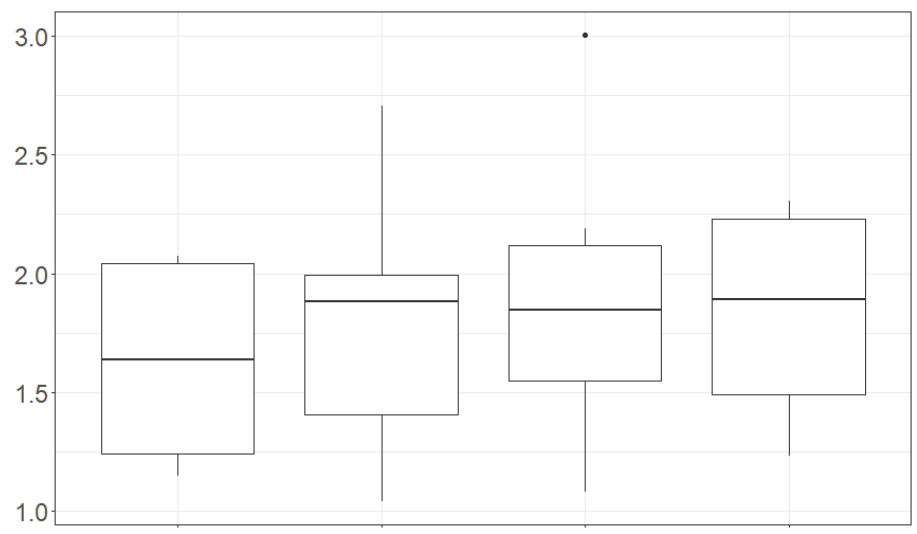


Figure 1: Major organic-cotton producing states in India. Comprising more than 80% of total Indian organic cotton production [1]



Year 1	*Kharif*	**Cotton**	**Cotton**	**Cotton**	**Cotton**
	Rhabi	**Chick pea**	**Chick pea**	**Lentil**	**Lentil**
Year 2	*Kharif*	**Maize**	**Soybean**	**Pearl millet**	**Pigeon pea**
	Rhabi	**Lentil**	**Wheat**	**Canola**	**Wheat**

Figure 2: Benefit cost ratio of different crop rotations suitable for organic cotton-based farming systems [2,3]

Literature

[1] Willer, Helga et al. (Eds.) (2020): The World of Organic Agriculture. Statistics and Emerging Trends 2020. Research Institute of Organic Agriculture (FiBL), Frick, and IFOAM – Organics International, Bonn.

[2] Commission for agricultural costs and prices 2020/2021: Price Policy for Kharif and Rhabi Crops 2017/2018

[3] Systems Comparisons Trial in the Tropics (SysCom) unpublished data

Acknoledgements

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