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promoting climate resilient futures”

Indigenous farmers’ reflections on livelihood sustainability under monocropping, mixed, and hangadi practices

JAYESH JOSHI, DEEPAK SHARMA, PRAMOD ROKADIA

VAAGDHARA, Civil Society Organisation, India

Abstract

Background

The increasing climate change conditions are affecting the stability of small and marginal indigenous farmers in the tribal region of Western Central India, which affects crop productivity, food security, and livelihood sustainability of farmers.

In this context of climate variability, the study titled “An analysis of farmers reflection on livelihood sustainability performance of prevailing monocropping, mixed-cropping, and Hangadi within climate change induced weather variability during Kharif 2025” examined the performance of monocropping, mixed cropping, and traditional “Hangadi” practices, which is a combination of more than five food group crops, under climate induced weather variability during the Kharif or monsoon 2025 season.

Methods

The study was conducted across the tribal tri-junction region of Gujarat, Madhya Pradesh, and Rajasthan using a participatory research approach grounded in agro-ecological principles. The primary data were collected through focus group discussion in 26 villages, involving 626 small and marginal farmers, practicing traditional farming. The farmers involved assessed the performance of these cropping practices in line with various parameters such as sowing conditions, crop establishment, input costs, pest incidence, yield outcomes, food availability, and market dependency.

Findings

The findings of the study revealed that diversified, agro-ecology based practices help increases the resilience under climate stress. Under conditions of delayed sowing and erratic rainfall, 52 % of farmers, practicing ‘Hangadi farming’ identified this practice as a reliable due to its crop diversity ensuring that even if some crops fail, others continue to survive.

As shared by 73 % of farmers, this traditional farming practice led to improved soil fertility and reduced input dependency. In terms of food availability, Hangadi practice ranked highest (58 %), followed by mixed cropping (30.8 %). In contrary, monocropping of soyabean was the most vulnerable, as 78 % of farmers reported significant losses due to prolonged dry spells, while 54 % of farmers reported negative income impacts, due to higher input costs.

Conclusion

- Traditional diversified farming practices such as Hangadi farming enhance multifunctional agro-ecosystem performance, improving food and nutrition security while reducing climatic and market risks.
- In contrast, monocropping practice with high market dependency show greater vulnerability and limited long-term sustainability.

Keywords: Agroecology, climate variability, cropping systems, Hangadi, indigenous farming, Kharif 2025, livelihood sustainability, West Central India