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“Reconcile land system changes
with planetary health”

Effect of sustainable integrated farming systems (SIFS) on dietary diversity of smallholder farmers in India

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Abstract

Over the past decade, Welthungerhilfe and Indian partners have further developed and implemented the approach “Sustainable Integrated Farming System (SIFS)” in India, which aims in increasing farm systems productivity by integrating various elements within a farm. This approach is expected to enable farmers to better adapt to and mitigate climate change risks and to improve dietary and income diversity of farmers households. To test this, the research project ‘Sustainable Integrated Farming Systems for Mitigation and Adaptation of Climate Change with Smallholder Farmers in India, between Welthungerhilfe, Forschungszentrum Jülich, University of Calcutta and three regional Indian partner organisations, is conducting participatory research at SIFS (n= 51) and non-SIFS farms (n= 24) across three agroecological regions in India, Rajasthan (foothill region), Jharkhand (semi-plateau region) and West Bengal (semi-coastal region).

The projects’ work package on food production for high quality nutrition applies a mixed methods participatory approach. The system of each farm (n=75), including livestock and crop production diversity, is jointly mapped with farmers. Accompanied data are collected via farmer diaries, surveys and interviews that also include livestock feeding practice. Information on household and individual level are collected for diet diversity, frequency and quantity by standard surveys and methods (Dietary Quality Questionnaire (DQQ)), 24-hour recalls, and individual open recalls for woman in reproductive age).

Preliminary findings of the first year’s project data, show that SIFS farms grow a more diverse set of crops than non-SIFS farms, while livestock diversity is rather similar. Depending on the location, the farm subsystems (SIFS > non-SIFS) can be seasonal such as crop, tree, livestock, poultry, aquaculture, composting unit, beekeeping. In the case of Rajasthan, food groups like meat, fish and poultry are less common in the diet compared to West Bengal and Jharkhand for both SIFS and non-SIFS farms. Across three regions, food groups like grains and pulses are sourced from their own farms, while more differences

exist among SIFS and non-SIFS farms in production and consumption of leafy vegetables, white root and other vegetables. Current data collection and analysis are ongoing and additional first results on diet diversity and food sources are expected during June 2025.

Keywords: Dietary diversity, food consumption, sustainable Integrated Farming Systems