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"Can agroecological farming feed the world?
Farmers' and academia's views"

Factors affecting farmer's decisions for delayed planting of rice and wheat in Bihar, India

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Abstract

Rice and wheat crops occupy 70 % of the state's area and feed more than 80 % of the 7 million farmers in the eastern state of Bihar in India (MoSPI 2021). Overall productivity of the rice-wheat cropping system has been declining over time, thereby reducing farm incomes, and putting the state's food security at risk. Late transplanting of the monsoon crop paddy is common in the region which delays paddy harvesting and ultimately the sowing of the following winter crop wheat and is considered as a major reason for the low productivity. The study tries to identify the agro-economic and behavioural reasons for this delay in farm operations. We conduct in-person surveys of 2000 farmers across 10 districts in Bihar covering regions where the problem of delayed paddy planting is widespread. We find that it is not the lack of awareness among farmers that causes a delay, but their inability to access key inputs such as lack of cheap sources of irrigation which exposes them to the perils of erratic rainfall, increasing shortage of labour at peak periods, and lack of key agricultural equipment such as combined harvester which delays harvesting and raises the overall cost of production. We also survey 50 agriculture experts and find a huge gap between expert recommendations and farmers' adoption of technology. We use the best-worst scaling experiment and ask both farmers and experts to rank various alternatives based on their relative importance in timely wheat sowing. Solutions such as zero-tillage wheat and direct seeded rice exist which have a double dividend of consuming lesser inputs without compromising the yields and incomes. However, unlike experts who are more optimistic in the adoption of such agroecological practices, farmers consider them unviable due to rising costs and huge interdependence on practices of neighbouring plot farmers as compared to their western counterparts in Punjab and Haryana. We recommend policy options that provide cheap irrigation, improved water efficiency, and balanced fertiliser use that reduce water and soil pollution, thereby enabling farmers to utilise the full potential and increase crop productivity in the state.

Keywords: Balanced input use , Bihar, cheap irrigation, food security, late transplanting, rice-wheat

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