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Smallholder dairy producers in transition: Dairy market participation and sales in post-Soviet Tajikistan

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Abstract

The increasing demand for livestock products, as seen in many developing countries, is catalyzing substantial transformations in agri-food value chains and production systems, underscoring the importance of agricultural commercialisation. This transformation is particularly pronounced in post-Soviet Tajikistan, where it intersects with the ongoing transition from a socialist planned and collectivized system to a more market-oriented approach. In this context, smallholder producers, who possess over 93% of the national cattle stock, dominate milk production, which is a crucial daily income source for the majority of the rural population living in prevalent poverty. Despite rapidly growing demand for dairy products and the dairy industry's excessive reliance on imports, not all smallholder dairy producers participate in dairy marketing. Furthermore, among those who do participate in market, there exists a spectrum of participation levels, indicating the necessity for nuanced analysis. Recognizing the crucial role of market integration in stimulating economic growth and reducing poverty, it is essential to investigate the market participation of smallholder producers in Tajikistan. Despite its significance for policy formulation and developmental strategies, particularly amidst Tajikistan's transition towards a market economy, this aspect remains largely unexplored in existing literature. This study examines the key factors driving smallholder producers' decision to participate in dairy marketing and the factors influencing the extent of their participation in terms of sales volume. Data were collected from 302 smallholder dairy producers in Northern Tajikistan using a two-stage random sampling technique, supplemented by qualitative insights from interviews and focus groups. A Heckman two-step regression model was used for analysis. Findings revealed that 67% of smallholder dairy producers participated in dairy marketing. Key factors influencing market participation included access to pasture, investment in pedigree stock and machinery, cropland area, agricultural education, and herd size. The sales volume was affected by marketing contracts, refrigeration facilities, market proximity, and price considerations. The study suggests policy interventions such as improving smallholders' pasture access, providing long-term low-interest credit for intensification investment, facilitating enforceable contracts to strengthen market relations, and improving cold chain and transportation infrastructure to reduce transaction costs.

Keywords: Dairy market participation, Heckman two-step selection model, northern Tajikistan, smallholder producers