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Implications of increased dairy production in poor market access areas: An *ex-ante* analysis in Senegal

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Abstract

Access to market is vital for farmer livelihoods, especially for time-sensitive products such as dairy. Interventions that target increased dairy productivity may not translate directly to increased farmer income if market access is poor, even in countries that are net importers of dairy products, such as in Senegal. In this study, we conduct a comparative *ex-ante* scenario analysis on the impacts of increased dairy production in two areas, one that has easy market access and another that has poor market access. We surveyed 119 milk-producing agro-pastoral households in two different clusters, one in the region of Thies that has ready road access and is within one hour on motorized transport to the city of Thies and within two hours to the large urban market of Dakar, and a second in the region of Louga within the sylvo-pastoral zone that averages 40 km from the closest paved road and far from major urban centres. Milk production in both areas is primarily from indigenous breeds, which produce between 1–3 l d⁻¹, with 117% and 185% higher milk productivity for Thies and Louga respectively during the rainy season as compared to dry season, which lasts nine months out of the year. By comparing the milk production, transformation and sales practices of these farming households, we find differing strategies to respond to the seasonal variation, which has implications on household nutrition and incomes. We capture this decision-making structure quantitatively, and conduct analysis by using a dynamic simulation model, considering the entire value chain including access to pasture, costs of additional feed, sales prices, the seasonality, possibilities of processing as well as access to market. Through testing scenarios of production changes and its impact on the value chain, we find that without adequate access to market, households increase gifts to relatives and transform greater quantities to butter oil, a preservable form, but requires significant work and has lower income per litre milk produced and lower demand. This study has important implications on development of the dairy value chain, especially in areas that have poor market access.

Keywords: Access to market, dairy, Senegal, value chain