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BENEFITS AND RISKS OF SMALLHOLDER LIVESTOCK PRODUCTION ON CHILD NUTRITION IN LOW- AND MIDDLE- INCOME COUNTRIES

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A food system based on livestock production may improve nutritional outcomes of pregnant women and children by increasing household income, availability of nutrient-dense foods, and women's empowerment. Nevertheless, the relationship is complex, and the nutritional status of children may be impaired by presence of animal wastes that are reservoirs of zoonotic enteric pathogens and are rarely managed. We reviewed the benefits and risks of livestock production on child nutrition. Evidence supports the nutritional benefits of livestock farming through income, production, and women's empowerment. A broad range of enteric pathogens may chronically infect the intestines of children and, in combination with dietary deficits, may cause environmental enteric dysfunction (EED), a chronic inflammation of the gut. Some of the most important pathogens associated with EED are zoonotic in nature with livestock as their main reservoir. Very few studies have aimed to understand which livestock species contribute most to colonization with these pathogens, or how to reduce transmission. Control at the point of exposure has been investigated in a few studies, but much less effort has been spent on improving animal husbandry practices, which may have additional benefits. Implementing a circularity approach to disrupt pathogen contamination cycles through safely harvesting and recycling animal feces may provide useful agricultural inputs and benefit child nutrition and health.

Keywords: Child nutrition, livestock, gut health, zoonotic enteric pathogens, animal waste