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"Competing pathways for equitable food systems transformation: Trade-offs and synergies"

## Are animal breeding technologies shifting gender norms? The case of Tanzanian small-scale dairy farming

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## Abstract

Gender dynamics and norms are crucial for rural livelihoods and achieving food security. While norms related to ownership, management, product distribution, and sales methods are prevalent in dairy production, little research has been conducted in this area. This study hypothesised that innovations introduced without considering gender dynamics and norms may limit the extent of transformative change. Using gender-sensitive mixed methods, this study investigated the implications of introducing technologies for intra-household dynamics and gender norms in dairy-producing communities. The African Asian Dairy Genetic Gains Programme (AADGG) has been introducing improved dairy breeding technologies in smallholder dairy farms in Tanzania. This served as the study case. Intra-household data were collected from 180 smallholder farmers surveys, genderaggregated focus group discussions involving 80 farmers, and six expert interviews. Data were analysed using content analysis, descriptive statistics, and variance analysis. Introducing dairy breeding technologies reduced women's control over milk incomes in two ways. First, improved breeds led to women and men participating in milking, previously carried out solely by women. The increased profitability of the dairy enterprise raised the outlook and status of some chores related to dairy husbandry. This shift, although linked with women's economic empowerment and gender-equal distribution of household responsibility, resulted in the transfer of milk income from women to men in most cases. This demonstrates a marked shift in women's traditional roles away from exclusive contributors to household nutrition to dependents of their husbands to meet household nutritional needs. In most survey responses (99.9%), the study showed that technological improvement led to milk increase. The milk increase did not, however, necessarily correspond to higher income for farmers, as the milk market would easily oversaturate, culminating in low prices. The impact of shifting gender norms and dynamics on household food security and livelihoods can be positive and negative, with its severity varying based on the household type and marital status of the dairy farmer. Therefore, to maximise transformative outcomes, innovative technologies should be customized to meet the requirements of different gender groups while considering societal and gender norms. Furthermore, providing training on further innovations could mitigate any consequences resulting from current advancements.

Keywords: Animal breeding, gender dynamics, gender norms, smallholder dairy

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