

Animal recording and decision support system, the LoCaBreed 2.0-Dtreo integration

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The LoCaBreed 2.0-Dtreo Integration initiative is a performance data recording and decision support structure developed to support enhancing smallholder livestock production in Burkina Faso. The Dtreo platform, a key component of this initiative, aims to address the data gap in livestock performance recording and provide valuable insights for evidence-based decision-making in breeding, management, and policy formulation. The Dtreo solution has been successfully deployed, providing a structured approach to data collection, processing, and analytics for smallholder farmers, enumerators, and researchers. The platform facilitates real-time analytics and report generation, supporting the selection of breeding stock, monitoring growth performance, and informing R&D priorities.

Despite its potential, challenges remain in ensuring routine and large-scale on-farm data recording. The initial dataset includes records from cattle and goats across 19 villages, with parameters such as live weight, breed characteristics, and household ownership. The initial data reveals variability in recording practices, and the challenges to ensure routine recording of newborn animals, sequential weight records, and fate reasons, limiting the ability to generate useful information.

Considering the existing data on live weights, it was possible to predict preliminary growth curves and their implications for livestock management. The statistical analysis highlights non-linear growth patterns, where animals experience an initial phase of rapid weight gain, followed by a deceleration or plateau. Some villages exhibit linear growth trends, suggesting consistent feeding regimes and better management practices. However, the lack of continuous weight records in many locations presents a key challenge, limiting the full potential of data-driven decision-making. Additionally, outlier evaluation indicates inconsistencies in birth weights and later age records, emphasizing the need for data validation and quality control.

The impact of LoCaBreed 2.0 on the livestock industry in Burkina Faso is significant. By integrating data-driven approaches, the initiative will further impact on genetic improvement, sustainable farming practices, and socio-economic development. Improved data collection and analytics enable farmers to optimize breeding strategies, enhance productivity, and preserve genetic diversity, particularly in adapting to local environmental conditions. Moving forward, increasing farmer engagement, ensuring data accuracy, and expanding the recording framework will be critical in maximizing the benefits of the system. While LoCaBreed 2.0 has laid the groundwork for a data-driven transformation of the small ruminant industry, ongoing efforts in data completeness, farmer training, and system integration are essential for long-term success.

Keywords: LoCaBreed, Dtreo platform, Performance data recording, decision-making.