African lady with smartphone . Photo crediyt: Shutterstock

ILRI project rolls out mobile app for tracking dairy productivity

By Murimi Gitari

THE International Livestock Research Institute (ILRI) and the Centre for Tropical Livestock Genetics and Health (CTLGH) have introduced a mobile app that allows real-time monitoring of dairy cattle productivity.

The new app launched under the African Asian Dairy Genetics Gains Project (AADGG) enables collection of data on livestock health, feed management, and artificial insemination —capabilities previously unavailable with the commonly used Open Data Kit (ODK) system. The ODK data-gathering system accessed via a tablet or laptop was not accessible to farmers and difficult to retrieve data collected.

The AADGG-Dairy Data App aims to change livestock management for smallholder farmers across sub-Saharan Africa and Asia. The app makes it easier to register farms, farmers and their livestock, enabling the recording of household information, health, breeding, and productivity data on individual cattle by farmers, researchers, and AADGG collaborators. With improved visibility and data quality through this mobile app, efforts to select adaptable, high-yielding dairy genetics for smallholder dairy farmers in Africa and Asia will be significantly strengthened.

The AADGG-Dairy Data App runs on Android smartphones and was rolled out in four African countries, namely, Ethiopia, Kenya, Tanzania, and Uganda and in Nepal between the months of September and October 2024 by a multi-national team.

The new app users begin by registering farms, herds, animals, cooperatives and less formal groups. The app is initially available for use by extension personnel who interact regularly with livestock keepers to support monitoring of the performance of their animals, and use the information generated to guide management decisions in dairy productivity.

According to Raphael Mrode, ILRI Principal Scientist and researcher at CTLGH, the app is a game-changer, providing a long-term sustainability path for data collection. It gives many more opportunities for data capture and of higher accuracy.

Unlike previous ODK tools, users can now query the data entered and receive instant feedback on basic productivity parameters. They can track each dairy animal's performance, including calving, milking, health, weight, synchronisation and insemination, pregnancy diagnosis, animal exits and disposals from a farm, and genetic sampling. Farm-specific details recorded include household demographics, primary economic activities on the farm, land use, livestock feed, water and housing conditions, and access to extension services and training.

The app has advanced modules to track pedigree, milk output, farm size, animal traits, and more, offering comprehensive insights. It also provides farmers with visibility into past records, enhancing decision-making, and has a user-friendly design.

In a region where smartphone adoption is on the rise—Kenya alone boasts over 34.5 million smartphone users—this app represents an opportunity to bridge the gap in digital tools for agriculture.

"The app's interface and real-time feedback solve key challenges faced by farmers, enabling them to better manage their livestock for improved productivity," said Jennifer Volk, Senior Information and Data Systems Lead at CTLGH.
The app was developed in partnership with Unmiti, a Hyderabad-based software company specialising in agricultural digital tools. With its versatile data-collection modules, it provides invaluable insights into herd health, breeding trends, and farm economics, paving the way for sustainable farming practices.

The app was initially tested and used by performance recording agents, or data collectors, who travel through rural areas to gather critical farming information. While it is not yet available directly to farmers, future plans include translation into local languages to increase accessibility. The app features specialised modules to collect a range of data types, including breeding and insemination data, herd health records, and other productivity metrics, making it a versatile tool for comprehensive livestock management.

"Once the data starts flowing and the accuracy of the data is verified, we can roll out the app to farmers," said Raphael Mrode, principal scientist in quantitative dairy cattle genetics at the International Livestock Research. "The cost of collecting the data will also be lower because recording agents won't have to go out to villages and speak to individual farmers. The farmers will record their own information."

The AADGG Dairy Data App is designed with user convenience in mind. It allows users to take photos and embed them in data records, add GPS location, and view and import specific farm data. Designed to work even in areas with low connectivity, the app ensures that farmers can easily access its benefits, making it a valuable tool for dairy management in rural settings.

The new app launched under the African Asian Dairy Genetics Gains Project (AADGG) enables collection of data on livestock health, feed management, and artificial insemination. Photo Credit: ILRI