

Session 1: Drivers and Challenges for new uptakes of new sources and uses of data recording

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PERFORMANCE RECORDING IN BOVINES UNDER THE SMALLHOLDERS DAIRY PRODUCTION SYSTEM IN INDIA: CHALLENGES AND SUITABLE INTERVENTIONS

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In India, dairying is a major source of livelihood for millions of small and marginal farmers. Low capital investment, a short operating cycle, steady returns, etc. made dairying a preferred supplementary livelihood option for rural households in India. It has been contributing to the farmers in many ways: regular income from milk and milk products, insurance against drought, emergency cash requirements, household nutrition, fuel for cooking, manure for crops, draught power for farming, an avenue for effective utilisation of crop residues, etc. Thus, dairying emerged as a perfect model of the circular economy for millions of dairy farmers.

With a bovine population of 302.7 million, although India ranks first in milk production in the world with an annual production of 221.06 million tonnes, the average productivity of cattle and buffaloes is comparatively lower than that of other developed countries. To improve the productivity of the cattle and buffalo populations, field-level genetic improvement programmes for important dairy breeds were initiated during 2012–2019 under the National Dairy Plan phase I (NDP-I) and subsequently continued under the Rashtriya Gokul Mission (RGM) scheme of the Government of India.

For successful implementation of genetic improvement programmes in the field, establishment of a systematic performance recording system is essential with a facility to pull these data at a central place to generate and transmit information to all stakeholders, including farmers, for their informed decision making and planning. Many challenges encountered during establishment performance recording infrastructure include problems with animal identification, lack of awareness among the farmers about the importance of maintaining records, involvement of multiple agencies, small herd sizes, free trade and transport of animals, extreme climatic conditions, etc. Various interventions that led to overcoming these challenges include special institutional arrangements and the deployment of exclusive manpower to run project activities, developing standard operating procedures, introducing a system of animal identification with 12-digit unique ear tag numbers, introducing the Information Network for Animal Productivity and Health (INAPH), an integrated application for capturing data, introducing GPS enabled smart weighing scale for milk recording; digitizing field supervision reporting system through Geographic Information System (GIS) based “Dairy Surveyor app” and regular payment of incentives to the farmers, etc.

The efforts resulted in the registration of around 258 million animals, and 82.8 million farmers residing in 0.57 million villages. Twenty-three field genetic improvement projects covering 16 cattle and buffalo breeds carried out around 6.4 million inseminations, captured 4.3 million test day milk records from 0.4 million animals and made available around 5000 disease-free genetically superior bulls for distribution to the various semen stations. The huge phenotype database thus generated, emerged as a stepping stone for the successful implementation of genomic selection in India.

Meticulous planning and effective execution led to the development of a successful model for field performance recording under the smallholder production system in India.