



DAIRY ASIA  
SUSTAINABILITY AWARD



# Implementing a Ration Balancing Programme (RBP) in India

## Organization

National Dairy Development Board (NDDB)

## Geographic location

Anand, Gujarat, India

## SUMMARY



The new practice involved providing a balanced ration advisory service with locally available feed resources directly to farmers. The service was provided in local languages through village-based resource personnel, who had been given two weeks of training, through a netbook/android tablet, the software of which could determine the feed requirements needed to meet the appropriate nutrient levels for an animal's physiological status and level of milk production. Each animal

was tagged so that data on balanced feeding could be captured. So far, 2.4 million animals have been covered in more than 30,000 villages. Balanced feeding affects the costs of milk production, daily milk yields, milk fat percentage, lactation yields and nutrients required per litre of milk. It also helps reduce enteric methane emissions by 12-15 percent per litre of milk. Large scale implementation could help improve milk production in developing countries with limited feed resources.

## AREA OF FOCUS

An estimate by the NDDB of India on more than 100,000 field animals revealed that about two thirds of the total number of animals are fed on excess energy and protein. At the same time, about the same proportion of animals are deficient in essential minerals. It was deduced that for enhanced milk production, milk producers would need to be advised on optimizing the usage of existing feed resources in a way that would meet the animals' requirements for milk production and other physiological functions

## CONTRIBUTORS

- National Dairy Development Board (NDDB) of India – Conceived the idea, and developed the programme and software (the Information Network on Animal Productivity and Health) for ration balancing. Trained agency officers and monitored roll-out and implementation.
- Implementing agencies: Provided technical manpower, trained local resource persons (LRP), monitored work, selected villages, conducted village awareness and provided inputs on quality feed, mineral mixtures, etc.
- Village-based LRPs: Provided ration balancing services, tagged animals, entered and monitored data, ensured balanced feeding implementation and visited producers monthly to re-formulate the ration.
- Milk Producers: Provided information to LRPs, ear-tagged animals, helped record data on feed intake and milk production, implemented the RB advisory provided to him/her by LRPs.

## ACTIONS TAKEN

A data library of feed resources used for feeding dairy animals in different parts of the country was generated by testing the samples in a laboratory. By referring to various international and national feeding standards, nutrient requirements for various categories of animals were created. Using this information, user-friendly computer software was developed which could formulate a low-cost and balanced ration for the field animals, taking into consideration their body weight, daily milk yield, milk fat percentage, pregnancy status, etc.

NDDB undertook the formulation, implementation and monitoring of the programme; carried out mid-term reviews to assess corrective measures; interpreted generated data on various breeds of animals; recorded methane emissions; provided necessary inputs in formulating area-specific breeding policies; popularized the programme; and generated extension materials in local languages in the form of pamphlets, posters, videos, etc.

## KEY SUCCESS FACTORS

Usually, proposed interventions lead to increased daily expenses. However, this intervention was able to reduce feeding costs while increasing milk and milk fat percentages. This attracted several milk producers and encouraged them to regularly follow the programme instructions. Benefits also included reduced workloads, improved immunity and conception rates, and improved SNF content.

## OUTCOMES AND EVIDENCE

- Net daily average income of farmers increased by INR 25/animal/day.
- Milk production enhancements helped make extra milk available to families engaged in dairy farming.

- Yearly income of milk producers increased by INR 7,625. Out of 1.8 million milk producers, 26 percent are women. For those providing advisory services, about 6,000 out of 30,000 LRPs are women. The social status of women LRPs improved greatly as their monthly income grew to INR 1,500-3,000.

- The intervention helped make judicious use of feed resources and reduced emissions of methane and nitrous oxide in manure, reducing underground water pollution and increasing the production of milk per unit of dry matter and protein.

- LRPs advise farmers to provide adequate drinking water, well-ventilated housing, neat and clean environments, timely vaccinations, disease reporting, etc.

- Judicious use of available feed resources is conducive to an environmentally friendly dairy production system that meets enhanced requirements of milk and milk products.

### Contact person

V. Sridhar (vsridhar@nddb.coop), GM (Animal Nutrition), NDDB of India

### For further information

1. Youtube: <https://www.youtube.com/watch?v=gzA6WYvRJCg>
2. FAO website: <http://www.fao.org/docrep/016/i3014e/i3014e00.pdf>
3. Book chapter: [https://link.springer.com/chapter/10.1007/978-81-322-2265-1\\_18](https://link.springer.com/chapter/10.1007/978-81-322-2265-1_18)
4. Research papers: <http://www.publish.csiro.au/AN/AN15586>; <http://www.sciencedirect.com/science/article/pii/S0377840112003902>
5. Conference paper: GFFC 2016, Antalya, Turkey, 18-20 April 2016 (<http://gffc2016.com/>) [http://gffc2016.com/wp-content/uploads/2015/08/P5-Abstract-Garg\\_Reduction-in-metabolic-disorders-Turkey2016.pdf](http://gffc2016.com/wp-content/uploads/2015/08/P5-Abstract-Garg_Reduction-in-metabolic-disorders-Turkey2016.pdf)