

Information Network For Animal Productivity and Health **(INAPH)**

Introduction

Dairying is an important sector in our country. We are the highest milk producer in the world, but productivities of our animals are low. To be competitive, we will have to increase productivity and efficiency of resource use. Besides building an infrastructure for making available quality semen, cattle feed, fodder seeds, vaccines etc. to farmers for improving the productivity and health of their animals, the modern tools of information technology and telecommunications will have to be welded with these services to provide reliable, easy-to-access and timely information to farmers, service providing organizations and policy makers for informed decision making at all levels.

Improving productivity of animals requires building of infrastructure for producing quality bulls through genetic improvement programmes, producing semen from high quality bulls and making it available to farmers at their doorstep so that their animals are bred with high quality semen, building of infrastructure for producing cattle feed, feed supplements, fodder seed etc. so that it provides balanced nutrition to their animals, and building of infrastructure for creating facilities for veterinary treatment, disease diagnosis, vaccination, de-worming etc. so that it protects their animal against prevalent diseases. Besides building infrastructure for producing quality products and providing quality productivity enhancement services, building an infrastructure for reliable, on time, easy-to-access information to farmers, organizations producing products and providing services, practicing veterinarians, farm consultants, policy makers etc. is equally important.

NDDB in collaboration with the dairy cooperatives in the country has been investing in building the necessary infrastructure for producing quality bulls, semen, cattle feed, feed supplements, fodder seeds, vaccines as well as for providing high quality artificial insemination, ration balancing and animal health services to farmers in the country. It has also been investing in building infrastructure for making available information.

Keeping in view the urgent need NDDB has developed **an Information Network for Animal Productivity & Health (INAPH)**, a Desktop/ Netbook / Windows Phone based Field IT Application that facilitates the capturing of real time reliable data on **Breeding, Nutrition and Health Service** delivered at Farmer's Doorstep. The Platform provides a tool for farmer, field functionaries, Union, Federation, NDDB to assess and monitor the progress of the projects in near real time basis.

INAPH has the following major functionalities

Breeding Services

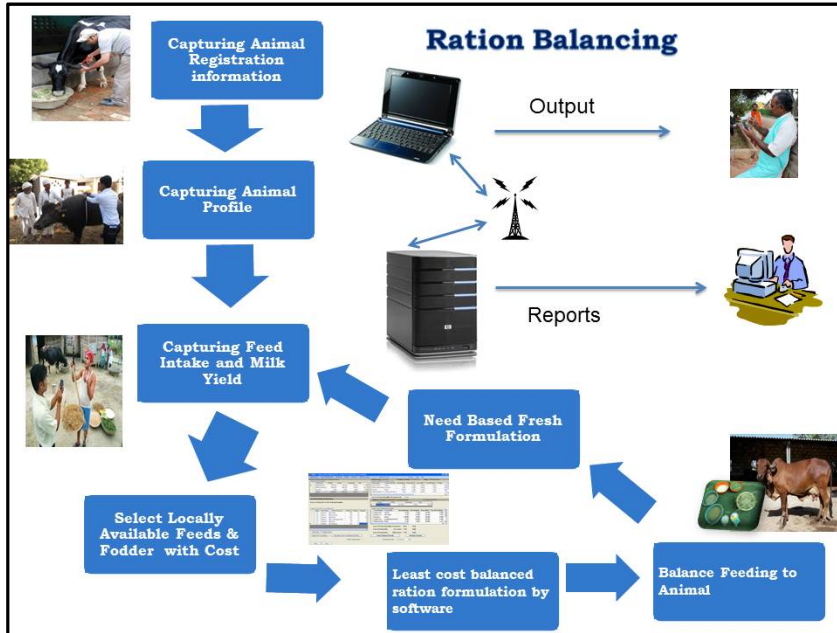
The Breeding Services primarily focus on monitoring of the Artificial Insemination delivery system targeted to improve/asses conception rate of different species/breed/AI Technicians as well as minimize the inter-calving period of the animal by accurately estimating the heat cycle of the Animal. The Breeding Services covers Artificial Insemination Activity, Pregnancy Diagnosis Activity, Calving and Calf Registration Activity. In Progeny Testing/ Pedigree Selection areas, the breeding services also includes the Milk Recording activity at



regular intervals to estimate the lactation yield of the animals and calculate Breeding Values of the Bulls based on the production performance of their Daughters. The AI technicians employed by the identified service providing organizations collect and capture the relevant data at the time of registration of new animals which are uniquely identified with ear tags. This data is transmitted to the central server. The AI technicians collect relevant data on AI, pregnancy diagnosis and calving and transmit it to the central database. The milk recorders collect data on individual animal milk yield on a monthly basis and also a milk sample at the time of every milk recording and arrange to send it to the milk component laboratory for milk component analysis – fat, protein, lactose, somatic cell count and milk urea nitrogen.

Nutrition Services

Nutrition plays a major role in dairy economics. Improperly fed cattle cannot deliver up to their genetic potential. Providing quality nutrition to cattle ensures that farmer



get better returns from dairying. It has been observed that providing balanced ration to cattle help in improving the milk yield for the cattle. The Nutrition (Ration Balancing) module of the application provides the least cost Balanced Ration formulation to the farmers based on the profile of the cattle and available feeds and fodder with the farmer. The system takes into account the various parameters and nutrition

requirement of the cattle in formulating the ration. The laboratory module generates data on milk component analysis, proximate analysis of feed and fodder samples. A Local Resource Persons of service organizations provide ration-balancing service to all farmers of the villages covered under the project using the ration balancing module of INAPH.

Health Services

Health Services to animals are provided by Veterinarians in the field on Individual Animal as well as Group (Herd/Village) basis. The vaccinations, deworming and

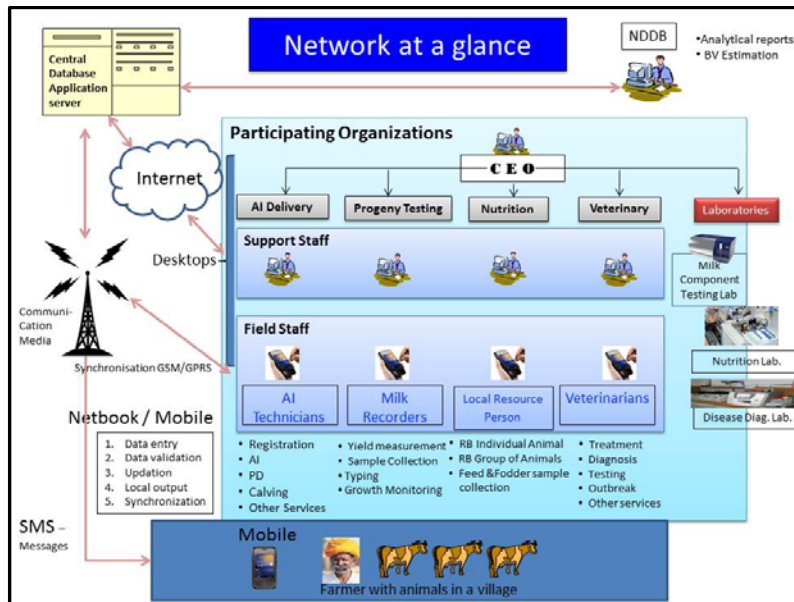


disease testing services are provided to the Animals at regular intervals. These intervals are configured in the system based on parameters like Disease, Age, etc. which alerts the Veterinarians to take appropriate action at appropriate time. The complete case history of the treatment services provided on an animal is also maintained and available to the Veterinarians on finger

tips for better diagnosis/treatment of the animal. First Information Report on Outbreak and its follow-up can also be recorded along with provision to send alerts to the affected areas. Pathological samples sent by veterinarians are tested in disease diagnostic laboratory and the test results are captured in the laboratory module.

Deployment

The system is deployed as Centralized architecture with support for decentralized services.



The services are delivered by Field teams which access the software using a Netbook / Desktop PC or a Windows Phone device which provides requisite functionalities including reports and alerts even in the absence of network availability and also help in synchronization of the data with the central server. The system also provides the SMS alerts to

the various stakeholders to help them take requisite action. The system also delivers web based analytical reports to the managerial team and other decision makers to help them to analyze the past, monitor and control the present and plan for future.

The INAPH is currently being used to provide support to over 15.7 lac animals belonging to over 5.4 lac farmers in more than 6000 villages spread across 10 states. The system is being used by over 2300 field users in the country.

Benefits

The system provides the following major benefits

- An animal is uniquely identified along with the Pedigree and Owner Details.
- Record keeping of Animals - All the activities (Breeding, Health and Nutrition) done on the Animal is maintained.
- Number of AI per conception can be computed very accurately.

- “Conception rate” and “Pregnancy rate” can be calculated more precisely.
- Disease pattern for different species/breed/village/district can be analyzed.
- All the data pertaining to reproduction will be available for individual animal and for a village and for an area very precisely. This will be helpful in planning, accurate targeting and impact study of action taken.
- All the animal husbandry related program can be tracked for individual animal.
- Performance of the each bull in term of fertility rate can be judged.
- Animal management practices become more effective.