

Prime Minister's Message

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INFORMATION NETWORK FOR ANIMAL PRODUCTIVITY & HEALTH (INAPH)

The Information Network for Animal Productivity and Health (INAPH) would support the delivery of breeding, nutrition, extension and health services at the doorstep of farmers. The system has multilingual capability and is based on best practices and Standard Operating Procedures (SOPs) recommended by domain experts.

Ear-tagging with a unique 12 digit number is mandatory for each animal registered in the network which enables tracking and monitoring of these animals. NDDB administers and centrally manages the animal identification system in the country.

Animal Breeding

INAPH captures data related to animal registration, artificial insemination (AI), pregnancy diagnosis, calving, milk recording, milk sample collection for component analysis, typing, body measurement for growth rate monitoring and animal movement. Data captured is processed for use in field activities under Progeny Testing and Pedigree Selection programmes. Operational, review and analytical reports, alerts and SMS messages are generated and forwarded to all concerned. INAPH helps in monitoring AI delivery system to assess and improve conception rate and minimise intercalving period. It also helps to evaluate breeding values of bulls as well as identification of elite animals.

Animal Nutrition

INAPH supports the Ration Balancing Programme (RBP). It has a data library on chemical composition of commonly available feed resources in India and the nutrient requirements based on body weight, milk yield/milk fat, pregnancy status etc. Based on the feeding practices, prevailing nutrient status can be seen. As per the availability of feed resources and area specific mineral mixture, a least cost ration is worked out, which is then given to the milk producers in local language, in a format which is easy to understand.

Balanced ration advisory services through INAPH on more than 1.5 lakh cows and buffaloes resulted in increased net daily income of milk producers between Rs. 15-35 per animal, by enhancing daily milk yield/milk fat and/or reduction in cost of feeding per litre of milk.

Animal Health

The Animal Health module of INAPH is designed to capture health related data of animals such as vaccinations, de-worming, disease testing and treatment, outbreak management and fertility camps. The complete health profile of each animal is being maintained by the system, enabling better health management and treatment. Data can also be captured at the village level on most health related interventions. The laboratory module provides analytical inputs in the area of milk, feed & fodder and disease diagnostic services.

SYSTEM ARCHITECTURE & DEPLOYMENT

The system is designed to meet the various information needs of farmers, field technicians, End Implementation Agencies (EIAs) such as Milk Unions/Federations, Producer Companies, analysts and policy makers. The application can be operated through computer/netbook as well as hand-held devices (Windows & Android) with internet connectivity. Data collected in the field is stored in the central database at NDDB. Anand. In the absence of network connection (offline mode), there is a provision for data to be captured and stored for later synchronisation with the central server through the GPRS network. INAPH is equipped to send messages to farmers, providing appropriate advice regarding their animals, when required. Web based reports are available to the managerial team and other decision makers for analysis.

NDDB provides training to trainers for implementation of INAPH. It has set up an INAPH Help Desk, which provides INAPH implementation support to all service providers. Any user can log in and put up its request and track for its resolution.

The INAPH application is currently being used by 85 projects covering 15 states, 158 districts and 19,284 villages. About 1.77 million farmers have been

registered and some 3.75 million animals have been identified and registered. Currently, the application is used by genetic improvement, artificial insemination delivery and ration balancing projects implemented by NDDB.

BENEFITS

- Milch animals will produce milk commensurate with their genetic potential when they are fed a balanced ration.
- Dairy farmers can balance the ration for their animals taking into account nutritional requirements and locally available feed materials to optimise the cost of feeding.
- This approach to feeding has a significant and immediate impact on the productive life of the milch animal.
 It decreases the inter-calving period and the problem of shorter lactation period gets resolved.
- Balanced feeding helps in reducing the occurrence of several metabolic disorders, worm infestation and other infectious diseases. This in turn improves the overall health status and vitality of animals apart from increase in milk yield and fat percentage.
- An additional benefit is reduction in methane emission levels which is a significant contributor to greenhouse gases



VILLAGE BASED LRPS IMPLEMENTING NDDB'S RBP

Dairy animals are usually fed a straw based diet, supplemented with one or two locally available feed ingredients comprising brans, cakes, chunnies etc. This often causes an imbalance of protein, energy and minerals in the ration of the cattle and buffaloes. Hence, it is essential to utilise available feed resources efficiently with value addition. This involves leveraging frontier technologies and developing and implementing models which are appropriate as per the climate and geography.

NDDB has introduced a Ration Balancing Programme (RBP) to balance the ration of milch animals. The key factor governing the successful implementation of the programme is the positioning of trained manpower for the execution of projects in the field. Keeping this in view, the dairy cooperatives are encouraged to select village based resource persons (minimum class 8th pass) for implementing

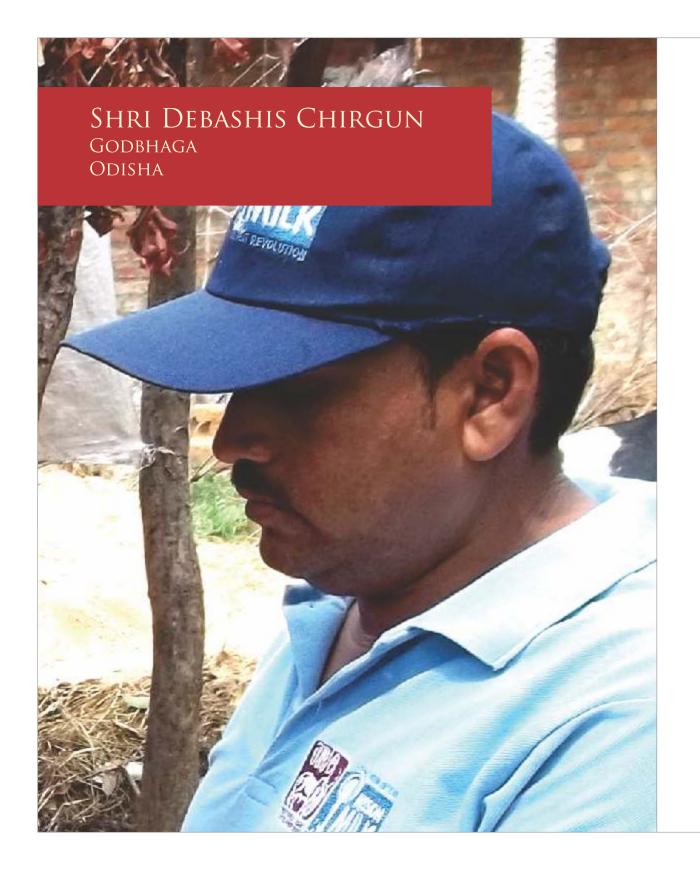
RBP at the village level. With a family background in agriculture, these committed Local Resource Persons (LRPs) are good communicators. They are trained by NDDB on the technical aspects of RBP including handling INAPH software through a netbook. Presently, trained LRPs are successfully communicating with the farmers and providing ration balancing advisory services at their doorstep. All the animals covered under the programme are ear-tagged and registered in INAPH. Details relating to the milch animal's weight and health are captured by the LRPs on their netbooks and transmitted real-time to the central server at NDDB, Anand. The diet advisory for each animal is generated using NDDB's INAPH.

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Ordinary people Extraordinary achievements

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fter completing his 12th from the village,
Debashish took a job in Jaipur. Long
working hours and meagre salary forced
him to quit this job. He then started working with
his school friend who had setup his own business.
Unfortunately, the business did not take off and
Debashish was left unemployed and broke. His
only option was to go back home and find a way to
earn a living. It was not a decision he made
willingly, but one he is happy about now.

Upon his return, he started working at the local diary. This is where he learned about the Ration Balancing Programme. After attending a 10-day training at the Samaleswari Milk Union's training centre, he was inducted in the corresponding operational area with kits. This was the first step of a new beginning for Debashish.

Initially, farmers refused to ear tag their animals. Debashish had tasted failure before, but this time he had no intention of failing. So he took it as a challenge and continued his efforts.

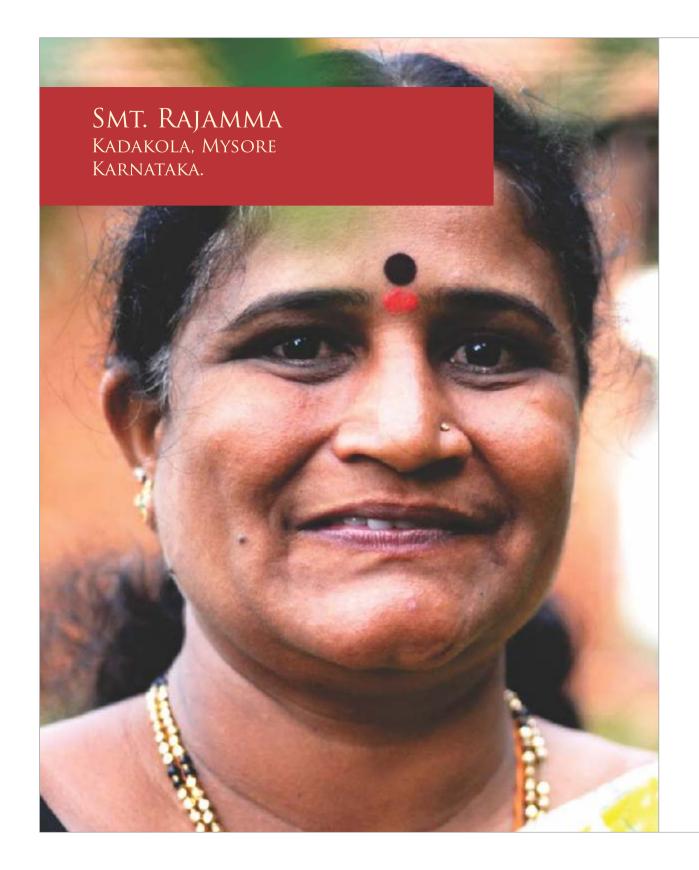
He convinced his farmer neighbour and briefed him about the concept of RBP, its successful implementation in other states and how the farmer benefits. He used all the reference materials like videos and booklets on RBP provided by the trainers during the training programme. In this manner he continued the field activities and was able to convince the farmers.

After six months of persistent efforts, he has achieved remarkable success. He has covered 82 animals with an average increase of milk by 100 g and fat by 0.07% per animal with reduction in feeding cost by ₹15.44 per animal per day.

Farmers appreciate his efforts. Many even suggest him to become a Veterinarian. "It's not a bad idea. Dr. Debashish Chirgun. Sounds nice.", says Debashish with a wide grin.







f an average Indian, would look slightly puzzled at the mention of Kadakola, it would be nothing unusual. The village after all, is off the popular grid. But the spirit of endurance and dedication can hardly be restricted by geographical boundaries. And a woman called Rajammahas come to epitomise it. This is her story.

The Mysore milk union started implementing the Ration Balancing Programme (RBP) for livestock in October 2014. The programme recruits Local Resource Persons (LRP), who are trained to advice dairy farmers on proper care for their animals. The aim is to enhance the quantity and quality of the yield and reduce the cost to the animal owners. Till date, 142 LRPs have been inducted covering 6 talukas of Mysore district. Smt. Rajamma of Kadakola village is one of them.

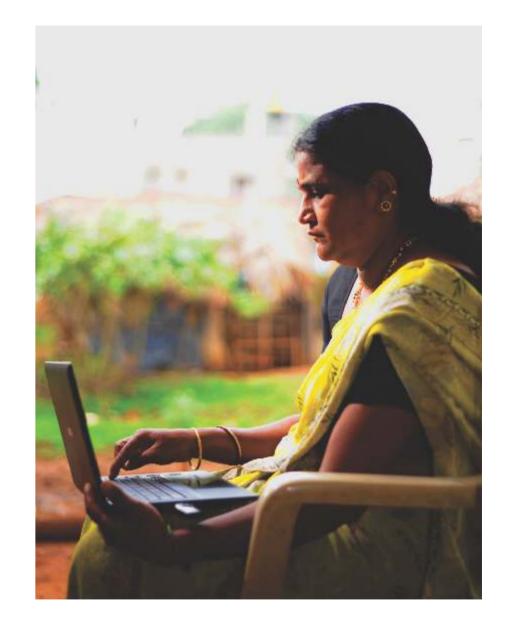
Initially, when this OBC woman living below the poverty line started her work as an LRP, people had doubts that she would succeed. Even her own family members showed a lack of confidence in her. She was all alone, surrounded by a cloud of doubt. But strength does not come from indomitable physical capacity, it comes for sheer will. Rajamma had the will, and it was not long before her work started being recognised.

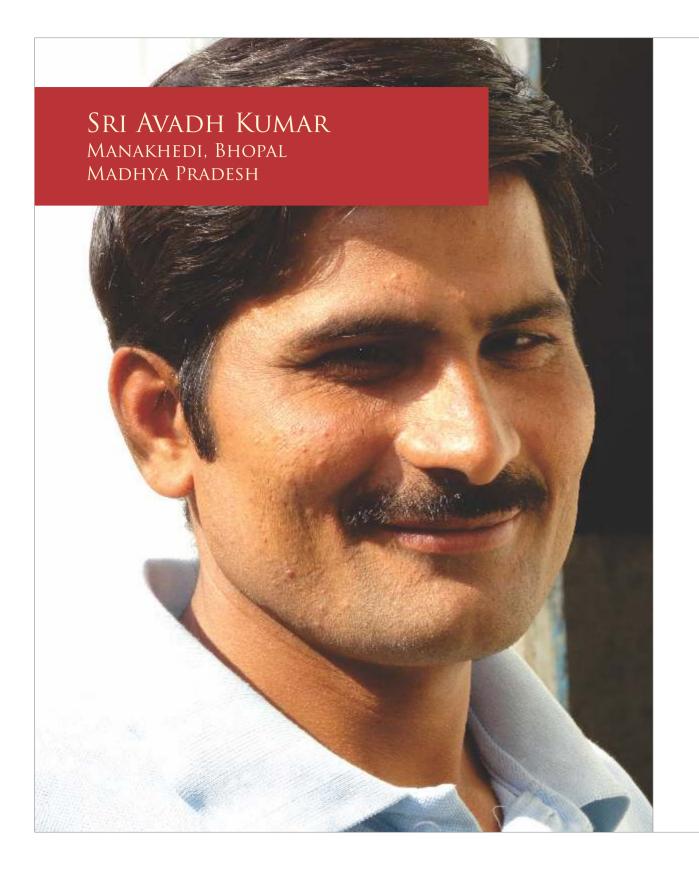
She has registered 101 animals since November and there is an increase of 150 g per day yield in RBP animals. The fat content has also improved by 0.18%. Average cost of feeding per animal per day has reduced by ₹13.65. She provides input not only on RBP but also on other aspects of animal rearing like mineral mixture usage, de-worming, importance of growing fodder crops, chaffing of fodder etc. Rajamma regularly meets milk producers and visits farms.

She sometimes even carries mineral mixture so that milk producers adopt the practice. The milk producers are exhibiting a growing confidence in the innovative practices introduced by Rajamma.

She is now a respectable name in her village. Her happiness is palpable when milk producers in the village identity her as an animal nutritionist and address her as 'Madam'.

Her family members have also started recognising her efforts, especially children, as she can now operate a netbook.





hri Avadh Narayan is a Post-graduate who was working as a helper in Manakhedi Dairy Cooperative Society of Bhopal Milk Union. He was struggling as the income generated from the job was not sufficient to meet his monthly household requirement. He was worried about his current situation and wanted to change it. The only option was to get an additional job to earn supplementary income.

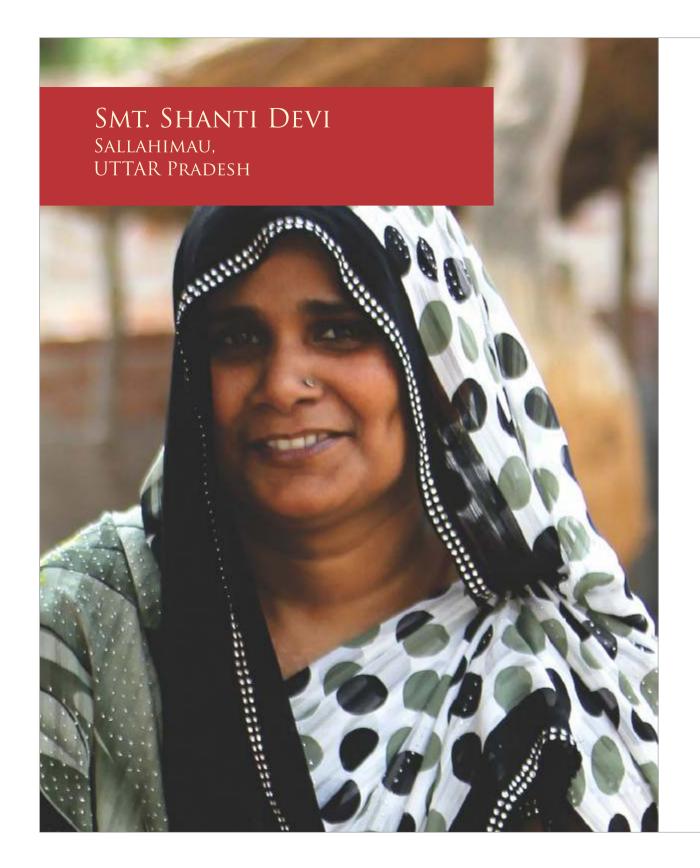
During the discussion of RBP implementation in his village, he voluntarily agreed to work as an LRP. He received training and learned to operate netbook with internet connectivity. Initially, he was doing this only for the monetary benefits. But as he worked more, he started believing in the programme. He has faith that the programme can actually bring about a dairy revolution in India.

Till date he has covered 100 animals. He regularly visits 100 farmers and provides advice. The impact of the programme on the covered animals is very encouraging. There is an increase in milk yield (370 g) and fat content (0.31%) with reduction in feeding cost by ₹7.63 per animal per day.

On being asked about the programme, he said, "Initially farmers were not interested but seeing the benefits in terms of reduction in feeding cost, wastage of feeds and fodders, they have started following my advice. Along with benefits of increase in productivity there is improvement in overall health of the animals, especially the incidence of acidosis and repeat breeding has reduced significantly in covered animals. This programme is really beneficial.







he story of Smt. Shanti Devi from Sallahimau village (Lucknow) is a true story of grit and courage of a simple woman who benefited from Ration Balancing Programme.

Her husband passed away in 2012. He used to work as a driver in a private school with a monthly salary of ₹1200, which was the only source of income for her family. She has only studied till 8th standard, but understands the importance of education. She wants her children to have good education and become successful. But, after her husband's untimely demise, she was left only with half a bigah of land. Survival was proving difficult. She did not have enough resources to deposit the school fees of her children.

When the Lucknow milk union decided to implement RBP in her village, villagers advised her to become an LRP. She was hesitant, but with the support of the villagers, she decided to give it a try. During training, she faced difficulty in learning the basic concepts of animal nutrition and computer operation. Still, she continued with the help of other trainees.

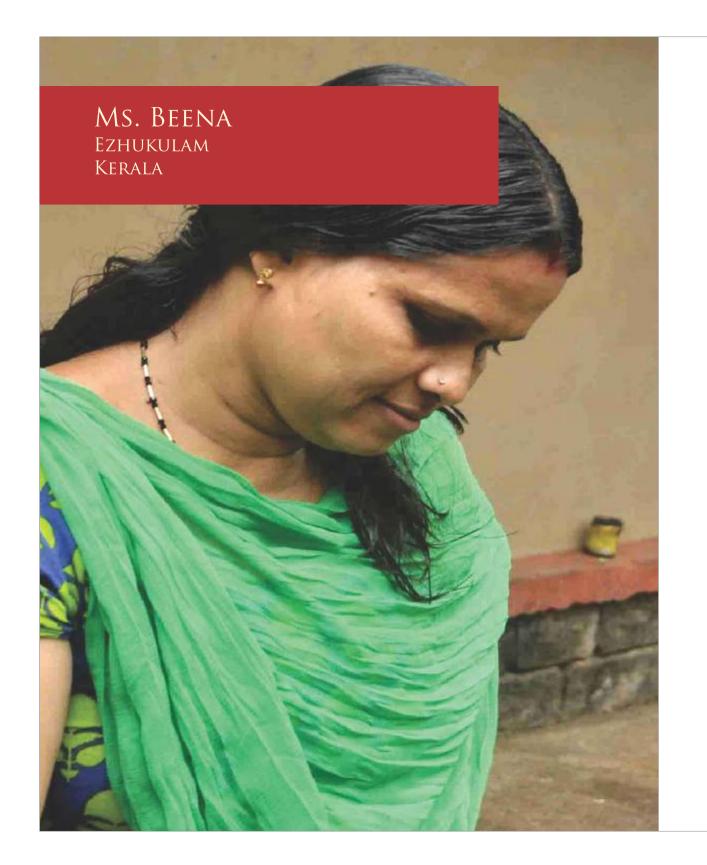


Today, she is covering around 102 animals of 74 milk producers regularly under the programme. There is a daily increase in milk yield and fat percent by 200 g and 0.03% respectively along with reduction in daily feeding cost by ₹7.11 per animal. Income generated from this work has helped her deposit school fees of her children regularly and even meeting some household expenses.

Finally she has found a strong pillar of financial support. The money earned from the programme will go towards the education of her children. She is grateful to the villagers for their support and said that RBP has changed her life.



 $\mathbf{1}$



hamedikka (Ahmed bhai) owns 2 cows. He is a marginal farmer in Kozhikode district of Kerala. In December last year, his first cow was in early lactation, yielding 12 litres of milk. The second one was in late lactation, yielding 4 litres. That is when he first met Beena, the local resource person (LRP) of Milma, Malabar Milk Union, implementing the Ration Balancing Programme under NDP. Beena calculated the imbalance in the feeding regime of both the animals using the INAPH software. The early lactating cow was deficient in energy, protein, calcium and phosphorus. It was being fed with lower amount of groundnut cake, cattle feed BIS II, grasses and the mineral mixture. Here, an increase in feeding cost was inevitable. But, with INAPH, the nutrition balancing could be done using the least possible cost formulation. The importance of mineral mixture was conveyed to Ahamedikka who readily increased it in the feed. Moreover, other managerial tips were also given; like the need for using the hybrid Napier grass rather than the local grasses, importance of chaffing, de-worming etc.

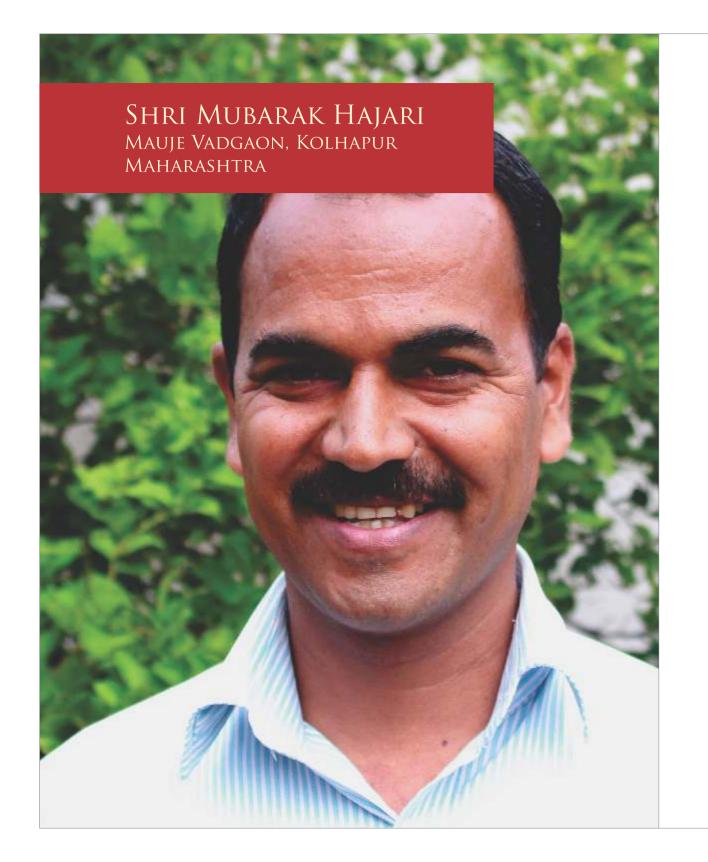
Beena is a Commerce graduate from Ezhukulam, Kerala. She had the desire to work for the greater good of the society, something that would bring her respect and admiration. Thus, she enrolled as an LRP. Giver her education background, she was immediately selected for the programme and underwent training. She is one of the several Milma Chechis (Milma Deedis) now in action. Her work is admired throughout the village.

Ahamedikka is completely satisfied by the results his cows are now showing. The programme suggested by Beena worked. Even though the daily feeding cost went up by ₹28.63, there was an increase of 2 litres in yield. Also, the fat content improved by 0.1%. On an average, Ahamedika gained around ₹55 per day. "Really rewarding," he vouches to the other dairy farmers in the vicinity. Beena has provided RBP services to 113 animals of 83 owners with daily impact of increased milk yield and fat content and reduction in feeding cost by 440 g, 0.14% and ₹ 1.27 respectively.





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hri. Mubarak Hajari, notes with great satisfaction that milk yield in his village has increased by 620 g, fat content by 0.33% per animal per day along with reduction in daily feeding cost by ₹4.98. Milk procurement in his village has also increased by 600 litres per day with increased fat and SNF content.

But how did Mubarak, an OBC person of modest education come to be interested in such official sounding figures?

Mubarak was living a mundane life, which a lot of people are content with in a village, but he wanted more. His desire to rise above the ordinary was dusted off by fellow villagers as a fool's errand. He had the desire and spark to achieve new heights, all he required was a little wind. That wind came in his life in form of the Ration Balancing Programme. The milk union was in need of people to implement the programme. Mubarak seized this opportunity and embarked on the journey to become an LRP. In March 2013, he received the training.

When he started working, he faced lots of hurdles. There was so much mistrust amongst the cattle farmers that they out rightly rejected the programme. But the milk union officials supported him by conducting awareness programmes throughout the village. After that, there was no stopping him. With new-found zeal and enthusiasm, he set about his task.

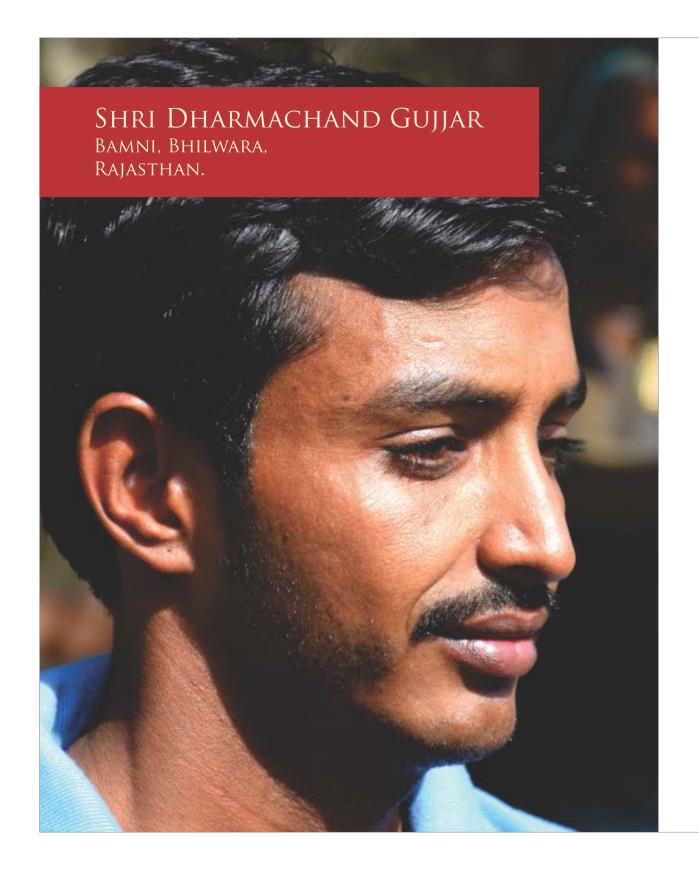
Since then, he has worked sincerely, visiting farmers regularly and giving them proper advice.

His interventions brought a positive change in milk production and daily income of farmers. Figures, which he proudly boasts of now. There is also a significant increase in the sale of mineral mixture due to increased awareness on balanced feeding regime. The sale has increased from 30-40 kg per month to 140-150 kg per month. Till Feb 2015, he has registered 162 animals belonging to 101 owners.

Villagers respect Mubarak for his contribution to reducing metabolic disorders, optimal use of available resources and enhancing reproductive efficiency in milch animals. In just less than 2 years, he has earned a handsome stipend of ₹51,780.







nowledge knows no caste. This stands true in case of Shri Dharmachand Gujjar, who belongs to OBC category, of Bamni village.

He is a well educated man with B.A, B.Ed. and PGDCA. With such an education, he could have had a good job in the city, but he opted to stay back. Being the only son, he did not want to leave his parents alone in the village. He believes that it is his responsibility to look after his parents, who have sacrificed so much to make Dharmachand the man he is today. If it wasn't for their support and encouragement, he would not have been so highly qualified. It is now his responsibility to care for his parents in their time of need. So he stayed in the village.

Dharmachand works in a private school. He derives a lot of satisfaction out of being a guiding force in the lives of young children. His ideas on putting the good of the community over and above his own personal gains might sound like impractical clichés. But Dharmachand actually puts these ideals into practise.

Dharmachand is a natural born nurturer.

When Bhilwara Union intended to implement RBP in Bamni village, Dharmachand was the first person they approached. He applied for the programme and was deservingly selected as an LRP. As he was no stranger to education and learning, the training programme was easy for him.

After his training, he started working as an LRP in his village from October 2014. Initially, inspite of the respect he commands in the village, farmers were reluctant to follow his advice and avoided ear tagging. Dharmachand took a different approach. He ear tagged all his animals and started RBP on his animals first. He ensured that whenever anyone visits his home, his parents talk about RBP and its benefits. The approach worked. The farmers saw the benefits and it was convincing enough for them to follow Dharmachand's example.

He now covers around 100 animals of 59 owners every month. His sincere efforts have resulted in increase in milk yield and fat percentage in RBP animals by 330 g and 0.11% daily respectively. With a reduction in daily feeding cost by ₹27.19 per animal.

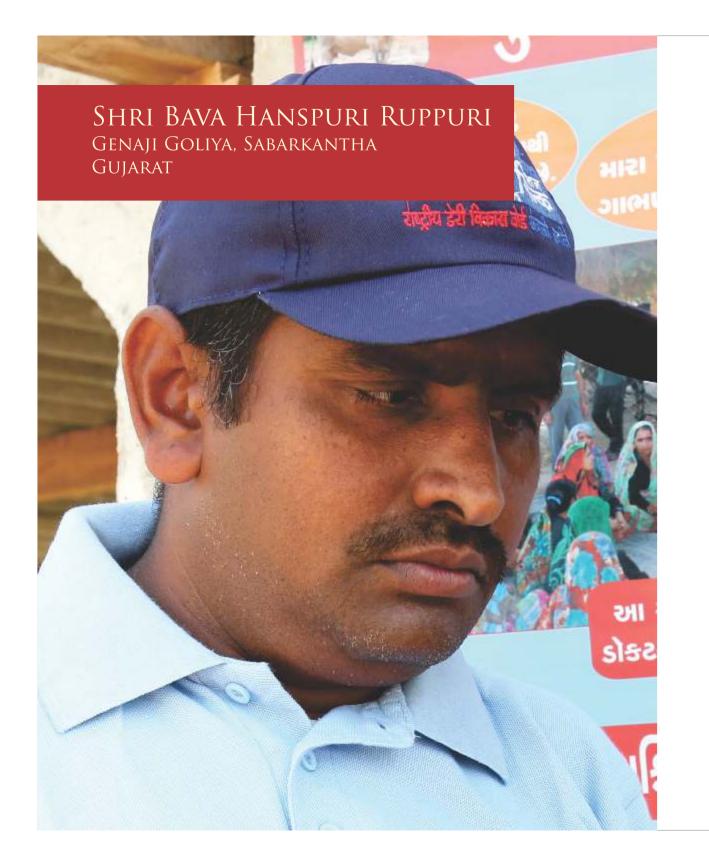
He finds the work of an LRP very satisfying and rewarding. He is happy that farmers are adopting the programme. Even the mineral mixture sale in his village has increased threefold.

Dharmachand is a rare role model.





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ava Hanspuri Ruppuri rises along with the sun. There's spring in his step and a song in his heart. In spite of the incessant drizzle outside, he quickly gets ready and starts walking briskly under the shelter of his umbrella. The officials from the milk federation are waiting for him at the village bus stop cum rain shelter. They order hot, steaming tea from a vendor nearby and start their discussions. From the widening smile on Bava's face, it is evident he is receiving some good news.

He cannot believe the figure. The daily milk yield has gone up by 690 g per animal in his village! To top it, fat content has increased by 0.12% per animal. In the same animals, there is a decrease in the feeding cost of ₹13.12 per day. Bava is a happy man.

Not long back, life was not kind for Bava. He was somehow surviving by selling milk and working as a part-timer in a tailor's shop. Then, destiny intervened. About 18 months ago, when milk federation officials came seeking volunteers as LRPs, he signed up without hesitation. After a short training, he started work.

Now, he visits about 2-3 households each day for recording the feeding practices of their animals and advising them on how to feed balanced ration to the animals. gives preference to small holders who depend on the animals for their livelihood to a large extent.

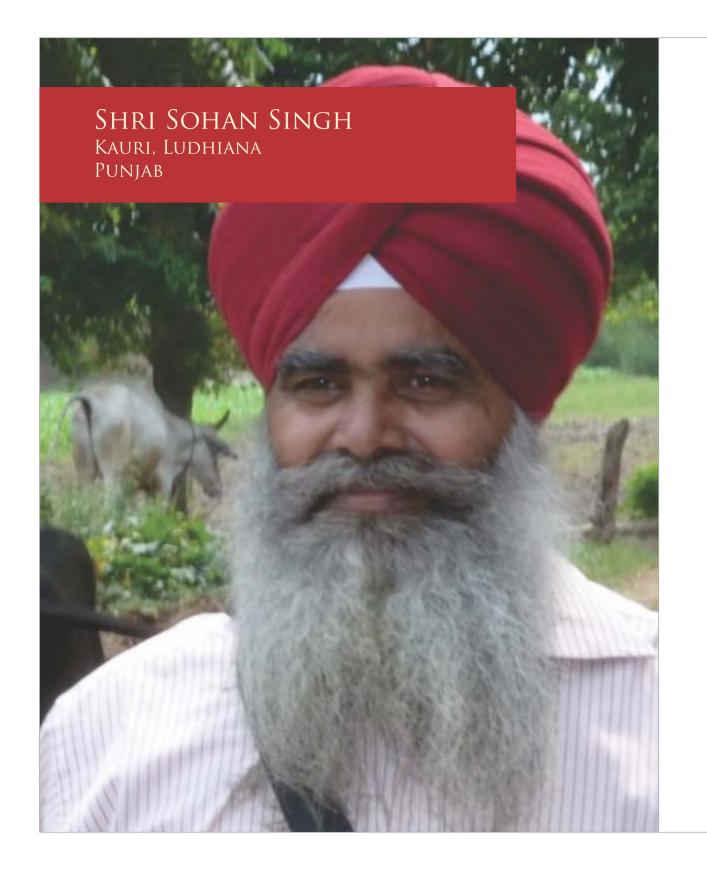
According to him, women take care of 80% work related to the animals. Men in the family are responsible for pouring milk to the DCS and purchasing feed and mineral mixture. He briefs both men and women beneficiaries but ensures that women understand the feeding procedure.

Bava conducts regular informal meetings with the women members at farm level to discuss different aspects of feeding. Along with the ration balancing advisory services, he also educates them on all aspects of animal health, well being and care. He has covered 244 animals in 86 household under this programme so far.

Bava now gets a stipend of ₹2000 from the village DCS. Milk union also provides incentives on selling mineral mixture and bypass fat. Currently, he earns ₹3500, on a monthly average. After becoming an LRP he believes that he has gained confidence to speak in front of the villagers. He believes, if one can find work that one loves then nothing matters. Rain nor sunshine.



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ohan Singh, like many village folks, has studied only up to 11th standard. Life was a cycle of daily mundane rituals. But Sohan dreamt big. There was this restlessness to do something worth while.

As they say, success and hard work walk hand in hand. Sheer determination and will power differentiates success from failure. So was the case with Sohan. When opportunity knocked, Sohan grabbed it with both hands. The impact he created through the Ration Balancing Programme in Kauri village of Ludhiana, is nothing short of amazing.

Sohan Singh joined RBP in the month of April, 2014. He was given necessary training and started working in the last week of April. The task at hand was difficult, but he did not back down. Sohan worked hard to provide proper advice in prescribed format along with other necessary information to each livestock owner. He followed this up with regular door to door visits every month. The hours in a day seemed less than required to Sohan as he worked diligently towards his goal.

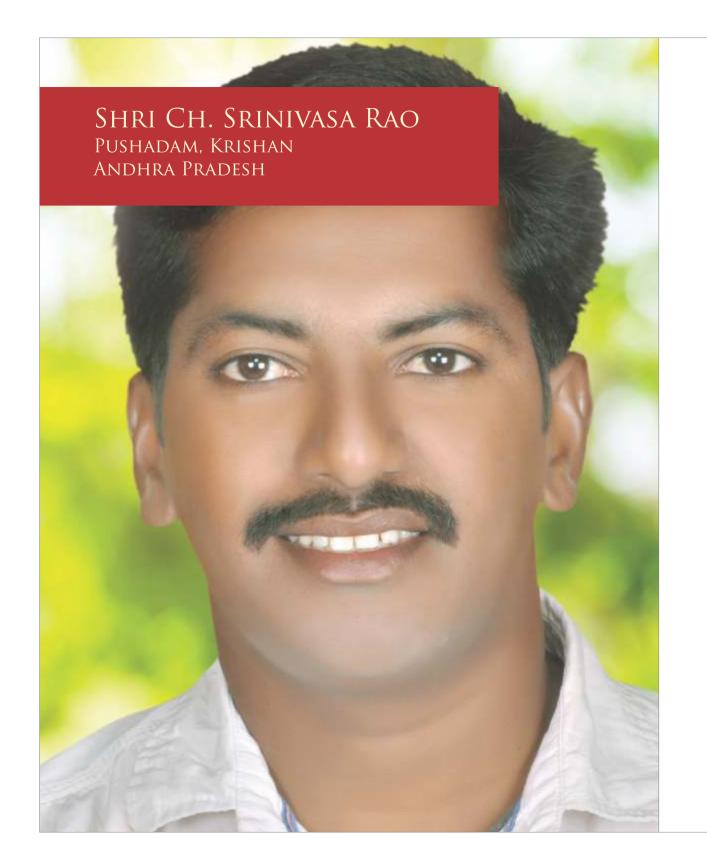
More often than not, every sincere effort guarantees results. Sohan Singh's hard work proved to be fruitful. Kauri society started reaping positive results. The increase in milk production and procurement was significant and there for all to see.

Till date, Sohan has covered 121 animals belonging to 111 owners in his village. Individual farmers in the village also benefited from regular implementation of RBP. There is an overall increase in production and fat content by 150 g and 0.03% respectively and reduction in feeding cost by ₹20.57 per animal per day.

Sohan Singh continues to work with dedication and enthusiasm. And continues to set an exemplary example for the entire village.







hri. Ch.Srinivasa Rao is working as an LRP in Pushadam village of Krishna district in Andhra Pradesh. About a 16 months ago, Srinivasa got a chance to be trained as a Local Resource Person. This not only changed his own circumstances but also propelled him into the role of a change agent in his village.

LRPs are like the extension workers of the milk federation, based in villages and are engaged in implementation of RBP. Farmers are more likely to adopt innovations if they see the results of the technology being used. Demonstrations on RBP provide assurance to farmers which can encourage them to adopt it at the farm level. This is the theory Srinivasa works on. He reveals that small and marginal dairy farmers are very cautious in taking a decision because of the fear of failure. Constant motivation and farmer-to-farmer communication is the key to success.

The actual field implementation of the programme started in January 2014. Since then he has covered 100 animals of 76 DCS members under RBP. He visits the milk producers regularly and advises them on various aspects of animal feeding and husbandry practices.

Farmer awareness on supplementation of mineral mixture has also increased and all the producers feed mineral mixture to their animals regularly. Along with increase in productivity (milk yield – 330 g, fat content – 0.08%), the other significant achievement is reduction in inter-calving period. It has reduced from 18 months to around 14 months in all RBP animals.

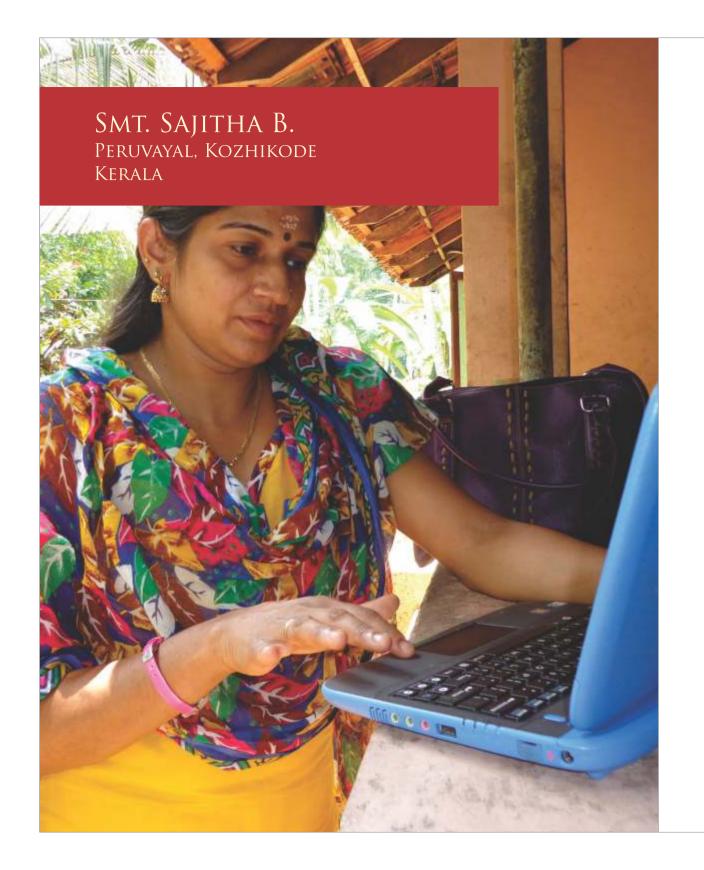
Veterinarian visits to attend emergency cases have also reduced noticeably.

He is now a respectable name in his village. His happiness is palpable when milk producers in the village identify him as an animal nutritionist.

His family members have also started recognising his efforts, especially children, as he can now operate a netbook.







"ur Nandinikutty has improved much", says Shalini, wife of Mr. Raghavan, Marumapparambath house, Peruvayal village, Kozhikode district. Nandinikutty is their cross-bred Jersey cow which calved 2 months ago for the first time. Thanks to the Ration Balancing Programme (RBP) which is being implemented here by Mrs. Sajitha B, the Local Resource Person (LRP) of Malabar Milk Union.

Sajitha first visited their home on 16th May 2014. While collecting details of feed given to the animal, she found that the feed had an excess of energy and protein but was insufficient in calcium and phosphorus. By using the INAPH software, she was able to balance the ration of Nandinikutty by decreasing the expensive compounded cattle feed BIS II and increasing the amount of cheaper and locally available feed items like areca leaves, areca sheath, paddy straw and whole jack fruit.

Shalini was also advised to increase the amount of mineral mixture over and above 30 grams, which is the usual amount fed by most dairy farmers in Kerala, to 130 grams. After Sajitha's intervention, the feeding cost reduced from ₹18.69 to ₹16.59 per kg of milk. Inputs about managerial aspects like the need for chaffing of fodder, regular deworming and vaccination of the animal were also provided.

Finally, milk production increased from 10.5 to 12 litres per day. An exceptional increase of 1.5 litres. A feat which would not have been possible without Sajitha's help. Sajitha is providing services to 94 animals of 94 farmers every month. Sajitha's intervention has increased the level of awareness regarding balanced feeding and mineral mixture in the village. She is happy that her efforts are bearing fruit and the community is prospering.





