MISSION MILK CHRONICLE
मिशन मिल्क क्रॉनिकल

Successful Interventions of National Dairy Plan- I

APRIL 2019 Vol-IV

श्रीमती रेणु मिश्रा – एक की पहल – अनेकों के लिए अमल

BIHAR

श्रीमती रेणु मिश्रा, पत्नी श्री उपेंद्र कुमार मिश्रा, जिनकी आयु लगभग 40 वर्ष है और मिश्रोलिया गाँव की निवासी हैं। वह अपने पति, सास और तीन बच्चों के साथ रहती हैं। इनके परिवार की आजीविका का आधार कृषि और पशुपालन है।

कुछ साल पहले इन्होंने, एक देशी और एक संकर नस्ल की गाय खरीदी थी, जिससे लगभग 15 लीटर दूध का उत्पादन होता था। संयुक्त परिवार के सदस्य के रूप में श्रीमती रेणु मिश्रा की सोच यह थी कि पशुपालन से अपने घर में दूध की जरूरत पूरी हो जाएगी और साथ में बचा हुआ दूध बेच कर कुछ आमदनी भी हो जाएगी जिससे परिवार की आर्थिक स्थिति में भी सुधार आएगा।

गाँव में निरंतर दूध बेचने का कोई खास साधन उपलब्ध नहीं था । उनके पति को आस-पास के बाजार में दूध ले जाकर किसी होटल में बेचना पड़ता था या तो गाँव में आकर कुछ दूधिया, जो दूध इकट्ठा करते थे उनको देना पड़ता था, पर वो भी पूरे साल भर दूध नहीं लेते थे । इसलिए इसकी कोई सुनिश्चितता नहीं थी कि हर दिन दूध बिक जाएगा। दूध का मूल्य भी दूध की गुणवत्ता के हिसाब से नहीं मिलता था और समय पर उसका भुगतान भी नहीं हो पाता था। श्रीमती रेणु जी, के कथनानुसार दूधिया ने तकरीबन ₹30,000/- से ₹35,000/- दूध का मूल्य दिया ही नहीं।

इन्हीं समस्याओं के कारण वो न तो पशुओं की संख्या बढ़ाना चाहती थी और न ही दूध के व्यापार को आगे ले जाना चाहती थी। पर ये समस्या सिर्फ रेणुजी की नहीं थी, ये समस्या उस अंचल के हर दूध उत्पादक किसान की थी।

राष्ट्रीय डेरी योजना चरण-1 के गाँव आधारित दूध अधिप्राप्ति प्रणाली के अंतर्गत बापूधाम मिल्क प्रोड्यूसर कंपनी द्वारा इस गाँव के पास एक दूध संकलन केंद्र की स्थापना की और कंपनी से जुड़े सदस्यों का दूध दोनों पाली सुबह - शाम संकलित होने लगा और दूध परिवहन वाहन द्वारा भेलानारी स्थित बीएमसी में ठंडा होने के लिए नियमित भेजा जाने लगा।

फिर धीरे-धीरे इस दूध संकलन केंद्र से जुड़े अन्य सदस्यों को देखते हुए, नवंबर 2018 में बापूधाम कंपनी के सदस्य के रूप में श्रीमती रेणुजी ने अपना नामांकन करवाया और दूध

आपूर्ति के लिए उनको एक सदस्य कोड आवंटित हुआ । तब से वह इस एमप़ीप़ी में दूध उपलब्ध करा रही हैं।

बापूधाम कंपनी से जुड़ने के बाद अब उन्हें यकीन है कि अपनी गायों से उत्पादित दूध की कीमत का निर्धारण अब उनके सामने स्वचालित मशीन से होता है। वह इस बात से भी बहुत खुश है कि अब दूध का मूल्य सीधे उनके बैंक खाते में आता है। बापूधाम से जुड़ने के बाद उन्होंनें पाँच और गाय खरीदी और लगभग 40 लीटर दूध का उत्पादन प्रतिदिन कर रही हैं। श्रीमती रेणु ने एक वर्ष के अंतराल में ही अपने दूध व्यवसाय को बढ़ा लिया और अब वह लगभग 25 लीटर प्रतिदिन दूध की आपूर्ति कर रही हैं और प्रत्येक माह औसतन लगभग रु. 15000/–से रु. 17000/– दूध भुगतान के रूप में प्राप्त कर रही हैं। जिसके कारण वो और उनका परिवार बहुत प्रोत्साहित हुआ है और दूध के कारोबार को और आगे बढ़ाने की योजना बना रहा है।

उनको कंपनी से प्रतिदिन एसएमएस के जरिए दूध के नियमित रूप से मूल्य की जानकारी मिल जाती है और प्रत्येक 10 दिनों पर दूध भुगतान की सूचना उनके मोबाइल में आ जाती है । वे कहती हैं, ''इस क्षेत्र के लिए दूध उत्पादकों की अपनी कंपनी की बहुत आवश्यकता थी, मैं उन लोगों की शुक्रगुजार हूं जिन्होंने इस कंपनी को शुरू करने के लिए यह पहल की।''

USA

Success story of NDP I presented in Global Agenda for Sustainable Livestock (GASL) 2019 MSP meeting at Manhattan, Kansas, USA

The Global Agenda for Sustainable Livestock is an international Multi Stakeholder Partnership (MSP) founded in 2011. Its mission is to enhance livestock holders' commitment and investment in support of the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda for Sustainable Development, or UN Agenda 2030. The partnership consists of over 100 members including governments, farmers, members from the private sector and civil society, Non-governmental Organizations (NGOs) and research communities. One of the activities of GASL is to facilitate multi-stakeholder dialogue at international and local level in order to stimulate multi-stakeholder interaction and sharing of knowledge; and to build consensus on priority issues and actions.

The 9th MSP Meeting took place during 9-13 September 2019 at Kansas State University in Manhattan, Kansas, United States of America. The theme was Sustainable Livestock Intensification and Innovation (SLII).

Shri Meenesh Shah, Executive Director, NDDB presented the details of National Dairy Plan Phase I (NDP I) which is a central scheme implemented by the National Dairy Development Board (NDDB).

He explained following details of NDP I:

- Measures undertaken for increasing milch animal productivity to meet the rapidly growing demand for milk through a mixed approach of breeding and feeding.
- Accelerating genetic progress and scientific nutrition programmes for milch animals leading to increased milk production efficiency and better economic returns to dairy farmers.
- Strategies for a transparent and fair village-based milk procurement system for providing greater market access to rural milk producers.
- Institution building process for managing large scale change among small-holder dairy systems.

He further informed that a multi-state initiative was undertaken to accelerate the genetic progress through a mixed approach of breeding and feeding for increasing milk production (National Dairy Plan Phase I). Simultaneously, efforts were made to tap this increased milk production by expanding village-based milk procurement systems. During the presentation, following steps were also communicated:

- Increasing the number of High Genetic Merit (HGM) bulls used for semen production through progeny testing and pedigree selection programme and import of HGM bulls.
- Development of custom genotyping chips for genotyping of animals of various Indian buffalo and cattle breeds as well as crossbred cattle. Using this technology, animals can be selected at a very early age including determining breed purity of animals, parentage verification and detection of genetic diseases
- Educating milk producers on ration balancing for milch animals and fodder development programme for green fodder use and conservation to ultimately improve milk production efficiency.
- Creation of new institutional structures for milk procurement in uncovered areas to cover more milk producers and strengthening of existing institutional structures by using technology such as Automatic Milk Collection Unit(AMCU), Bulk Milk Coolers(BMC) and ICT .
- Enhancing participation of women in dairy sector to ensure gender equality and developing them to take up leadership positions in governance and management of dairy co-operatives.

Also, following highlights of NDP I were also discussed during the presentation:

1. NDP I has shown that advanced feeding and genetic progress of milch animals can significantly contribute to profitable dairying particularly in the context of small-holder dairy systems in India. This is demonstrated e.g. in increased domestic production of milk from 127.9 MMT in 2011-12 to 176.3 MMT in 2017-18 resulting in increased per capita availability of milk from 290 grams in 2011-12 to 375 grams in 2017-18. Interventions have further added 1.57 million milk producers to the dairy sector including about 0.7 million women. Improved feeding management adopted in NDP 1 has also led to mitigation of livestock methane emissions by around 14% in lactating cows and 11% in buffaloes.
2. At the same time, it has also demonstrated that such productivity enhancement measures should also be accompanied by development of fair and transparent milk procurement systems, so that milk producers receive a fair price for their milk which will sustain their interest in dairying.

WEST BENGAL

Mothers of Sundarini blessed by Automatic Milk Collection System with NDDB'S Payment Software under NDP I

Members of the all Women Dairy Cooperative Society (WDCS) of the Sundarban Milk Union faced serious troubles in the payment of milk bills directly to individual bank accounts, because they collected and tested milk manually using the Garber machine. The process for both collection and testing was cumbersome. As a result, farmers usually avoided waiting at societies for a long time as Garber testing was time-consuming.

The process involved extensive data entry from individual milk collection slips into a spreadsheet at the Union level to be sent to the bank for payment. It was not just time-consuming but also required additional infrastructure and extra manpower too.

Morever, fetching specific information through huge data volumes was impossible. Bundles of milk collection slips from DCS (District Cooperative Societies)not just kept staffers occupied in redundant activity every day, but also caused payment delay to the farmers too.

Ms. Sima Das, Procurement Officer, Sundarban Milk Union said,"More Data-Entry-Operators were engaged, which led to higher monthly overheads in terms of their salary, infrastructural support, and management problems. At times, with increase in number of farmers the probability of typological error increases. Due to this, private milk vendors often misled farmers for delayed payments and error in milk bills."

It was therefore imperative to have an integrated approach for dairy value-chain automation through an Automatic Milk Collection Unit (AMCU), which enabled database management, payment transfer and real-time data transfer.

As part of Value-Based Milk Procurement System (VBMPS)-II and NDP-I, milk collection of 86 WDCS through AMCUs are linked with NDDB'S payment software and Central Application Server. This enables a DCS to go cashless through quick, transparent payment system with instant data analysis and farmer performance report.

The system not just helps with data communication to milk pourers instantaneously through SMS but also helps the dairy manager/ procurement in-charge to plan and optimize milk management cycle before actual arrival of milk at dairy. AMCUs bring in more transparency in milk procurement system and ensures timely payment to farmers' individual bank accounts.

AMCU enables a DCS to go cashless through quick testing, error-free database management, transparent payment system, instant data analysis, software-based farmer performance report.

MYANMAR

Ration Balancing Programme (RBP) won Dairy Asia Sustainability Award

NDDB's RBP won first Dairy Asia Sustainability award

Initiated in 2012-13 as part of National Dairy Plan (NDP) Phase-I, the Ration Balancing Programme (RBP) was aimed at educating milk producers about balanced feeding of milch animals at their doorstep. Over a seven-year period, some 21.5 lakh farmers across more than 33,000 villages received balanced ration advisory services for 28.6 lakh animals.

To execute this, around 31,000 Local Resource Persons (LRPs) – trained for RBP by technical experts in milk unions/ producer companies at National Dairy Development Board (NDDB), Anand – were deployed across 18 major milk-producing states in India.

As part of RBP, dairy farmers were educated about ration balancing advisory services in local languages by trained LRPs. Information about the desired nutrients to be provided to milch animals by re-appropriating the available feed resources to improve milk-production efficiency is given to farmers under the programme.

Each animal covered under RBP is identified with a unique ear tag number, enabling entire data monitoring through Information Network for Animal Productivity and Health (INAPH).

After RBP implementation, it was found that the average daily milk yield went up by 0.27kg per day per animal where as the milk fat improved by 0.1%. That apart, farmers also saw a significant 11% reduction in their feed costs, as a result of which their net income went up by an average of ₹27 per animal per day. RBP adoption also led to a 14% reduction in methane emission per kg milk in cows and buffaloes.

NDDB's RBP programme was awarded the Dairy Asia Sustainability Award in 2017 under the 'development of a new innovative practice' category. Dairy Asia is a multi-stakeholder platform which initiated the Dairy Asia Sustainability Awards to recognize success stories of practice change from Asia and the Pacific region that make dairy systems more sustainable, both on- and off- farm.Dr Rajesh Sharma, senior manager, NDDB, made the poster presentation.

Innovative programmes like RBP can help farmers in the region realize the maximum potential of their dairy animals and get good income and be in the profession sustainably.

TAMIL NADU

Moving towards Greener & Cleaner Power

Bulk Milk Cooling (BMC) units are a crucial link in the dairy value-chain but the high input cost for electricity, is often a concern for dairy farmers. Similar was the case in Veerapandi village of Salem district in Tamil Nadu, where the Salem District Cooperative Milk Producers' Union Limited had commissioned a BMC unit of 5,000 litre capacity. Also known as Salem Avian, the union had commissioned the BMC unit in July 2015, funded by the NDP-I under the Village-Based Milk Procurement System (VBMPS).

The said unit received an average 4,500-4,700 litre milk from three dairy cooperative societies (DCS) – Veerapandi, Birojipudupalayam and Periyaseeragapadi – pooled from some 390 pourer members.

In January 2019, the Milk Union installed an off-grid Rooftop Solar PV system of 2.8kW capacity in the BMC building. Electricity generated using this system helps power-up fans, seven tube-lights, milk testing equipment and computers in the BMC unit. Against the total

power requirement of 20kW to run a five kilolitre BMC unit, the rooftop solar PV system fulfils 20% of electricity requirement. The entire project was implemented at a cost of ₹2.83 lakh with funding assistance from NDP-I.

With installation of the new system, the power consumption has reduced by 200 units in a month. Therefore, the milk union is able to reduce its bi-monthly electricity charges by an estimated ₹2,500.

Clean energy adoption through the new rooftop solar PV system helped dairy farmers in reducing their cost of production. It also reduce carbon footprint with a significant 2.06 MT per year CO2 equivalent carbon emission reduction.

Success Story of Jambahal WDCS, Bolangir

ODISHA

Life wasn't easy for 34-year-old Himadri Budek, a resident of Jambahal village of Bolangir district in Odisha. Making ends meet for a family of six people was difficult with labour being the primary source of income. Budek also had a cow, through which she sold an average eight litre milk in a day to a nearby hotel, at Rs 17 per litre. But the earnings were barely sufficient.

In August 2018, things changed for Budek and various other women dairy farmers in the village when, Jaymata Women Dairy Cooperative Society (WDCS) was established by the BKN Milk Union, as part of National Dairy Plan (NDP)-I. Budek was among the 20 members which joined the society.

By joining the cooperative, women dairy farmers in the village are not just getting a fair price for the milk but are also benefitted with guidance on cattle-feed and mineral mixture, to get an optimum yield.

Moreover, when these dairy farmers got an organised platform to deposit their milk collection, they inducted new animals as well.

Six months after the society was formed, she purchased one more cow. Today, she pours at least 15 litre milk in a day, and earns ₹27 per litre. By now, Budek has repaid ₹20,000 which she availed as a loan by mortgaging the two-acre land owned by her family.She makes ₹15,000 from dairy farming alone and the family has also begun cultivating on their own land, which is an additional source of income.

Presently, the society has some 100 members who collectively pour 280 litres milk in a day. Budek has also inspired several other farmers in the village to take to dairy farming and boost their income. Budek's example is indeed a demonstration of how a strong-will power can indeed help one find a way.

KERALA

An inspiration named Mary Olickal

Mrs. Mary Olickal (67), a resident of Naduvil village of Kannur district Kerala, lost her husband when her son was three months old. Struggling to make a living, Mary was in search of a sustainable source of income and decided to take up dairying. In 2009, she began dairying with a singe cow and today, she owns a mixed farm with 60 crossbred HF cattle, goats, backyard chicken and rabbit. With affordable feed prices, dairying was indeed a lucrative business back then. However, a decade later, she incurs a huge cost on animal feed itself, as her cattle strength has grown to 60 crossbred HF cows.Being an active participant of all the farmer's awareness classes conducted at Kannur PT area, she coordinates cow infertility treatment camps too.

Of the 40 PT animals, 12 are progenies of test mating – all of which are insured and enrolled for monthly feed allowance through PT programme. With the average milk yield for each cow being 15-20 litres, Mary contributes 250 litres to the Naduvil APCOS. The display cabinet in her house is adorned with accolades she received, for dairying.

Two major challenges Mary faced while dairy farming is preventing cattle diseases and the cost of feed. But thanks to the PT programme she has been participating in since its inception under NDP-I, she receives a regular supply of de-wormers, mineral mixture and cattle insurance at free premium which enables her to address these challenges effectively.

Some 40 of the 60 cows owned by Mary are milk-recorded under the programme. Through various awareness sessions conducted under the PT project, Mary understood the scientific way of dairying and it helped keep animal diseases in her cattle at bay.The Animal husbandry Department (AHD) too provides veterinary assistance under the project.

Mary has understood the importance of such a programme and is happy that it supports her business. She also received an incentive of ₹90,000 from the Kerala Livestock Development Board for cultivation of Hybrid Napier – the main fodder variety on an acre of land. As part of this, Mary's dairy farm waste is effectively used as manure for agriculture land. Recently, the Panchayat too came up with a scheme to collect cow dung cake, which Mary opted for.

Farmers like Mary are the assets to the project. Their cooperation and dedication in dairying needs to be appreciated. Her story is indeed epitome of women empowerment through dairying.

Achievement in the field of dairying

- **District level** best farmer (Kannur) 2017-18- awarded by MILMA.
- **Best lady famer 2014 -** awarded by Thellisery Social Service Society(a social work organ of the Archdioces of Tellisery).
- **Best lady farmer of** Naduvil Panchayat 2014.

Fodder plot with hybrid Napier cultivation

Implementation of Infectious Bovine Rhinotracheitis (IBR) Control Project under NDP I

Infectious Bovine Rhinotracheitis (IBR) is a highly infectious and contagious disease caused by bovine herpesvirus-1 (BHV-1) and characterized by major reproductive disorders like infertility, abortion, still birth, metritis, early embryonic death etc. besides respiratory distress and loss of milk production potential. This is also one of the important diseases contributing towards poor reproductive performance and listed in Minimum Standard Protocol (MSP) -a Govt. of India (GoI) standard guidelines for production of Frozen Semen Doses (FSD) by all the Semen Stations (SS).

The GoI-MSP stipulates that only the IBR sero-negative bulls to be introduced to SS for FSDs production. Abiding by this protocol, it is imperative that the semen stations move towards maintaining an IBR free herd under the progressive IBR control road map.

Concerns regarding availability of IBR free high genetic merit (HGM) bull calves from highly IBR endemic situation has been the prime constrains for production of IBR free FSDs for enhancing productivity through HGM progenies.

Since BHV-1 is a pervasive, highly contagious virus, control by prophylactic vaccination is an internationally recommended approach. IBR inactivated marker vaccine induces immunity and significantly reduce the intensity of virus shedding in infected animals. The use of marker vaccines is preferred since the antibody they stimulate can be distinguished by a companion DIVA (Differentiating Infected from Vaccinated Animals)assay from that of naturally infected animal. Informed technical decisions for formulating a road map towards IBR free bull production programs through pilot project of IBR vaccination in the bovine population especially in bull production areas had been considered under NDP-I namely Popularization of IBR Control Using Inactivated Marker Vaccine.

Probably under this project for the first time in the country, an inactivated gE deleted marker vaccine has been used for IBR control in field and that too covering both the cattle and buffalo population irrespective of their IBR infection status. Under this pilot project, three (3) End Implementing Agencies (EIAs) namely Sabarmati Ashram Gaushala (SAG)-Gujarat, Andhra Pradesh Livestock Development Agency (APLDA)-Andhra Pradesh and Banaskantha District Cooperative Milk Producers' Union (BANAS) Gujarat were

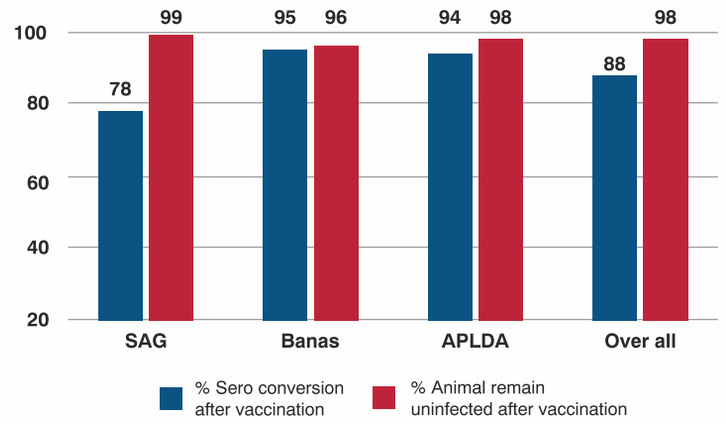
entrusted for undertaking the project for two (2) years (2017-18 and 2018-19). A total of more than 9500 animals were covered in ten (10) villages of three (3) different districts in two (2) states. Altogether, 47562 vaccinations were administered in five (5) rounds. A total of 2875 blood samples have been tested for analysing the vaccine sero-conversion study.

The vaccine was found to be safe even in pregnant and lactating animals as no untoward reaction was recorded during all the rounds of vaccination. Sero-conversion was recorded in almost 88 % animals and DIVA was possible.

Almost 98% of the IBR sero-negative animals remain uninfected even after five rounds of vaccination in an endemic setting (Fig.-1).

Mass awareness drives emphasizing on disease potential, management of suspected animals including disposal, significance of vaccination and testing etc. found to be the epitome of success of this project. IBR awareness film in Hindi, English and nine other Indian regional languages has been prepared for farmers awareness which is available in social media (https://youtu.be/w2Fm6marwnY).

Fig-1: Percent sero-conversion and protection during the project period



Having noticed the success of IBR pilot project, it is opined that scope of IBR control by mass vaccination using inactivated marker vaccine could be very well explored and extended to a larger perspective for future bull/FSD production programs.

CONTACT
Project Management Unit
National Dairy Plan Phase I
National Dairy Development Board, Anand - 388001,Gujarat, INDIA
Telephone : 91-2692-260148, 260149 Fax : 91-2692-260157
E-mail: pmu@nddb.coop, Website: www.nddb.coop