Indian Dairy Association
50th Dairy Industry Conference

Keynote Address

on

Indian Dairying: Innovation & Entrepreneurship

by
Dr Meenesh Shah
Chairman
National Dairy Development Board
Anand

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Indian Dairying: Innovation & Entrepreneurship

It is indeed a matter of great pride that this year's Dairy Industry Conference in Hyderabad also marks the 50th edition of India's biggest annual dairy industry conference. Each edition has surpassed the last, and I must congratulate IDA for achieving this success. I wish that the next 50 editions will be even more remarkable and impressive and the Dairy Industry Conference (DIC) earns the crown of being one of the most coveted dairy industry conferences as India positions itself to become the Dairy to the World.

It gives me immense pleasure to stand before you and have this opportunity to deliver the Keynote Address today on the theme "Indian Dairying: Innovation & Entrepreneurship" at the 50th Dairy Industry Conference here in Hyderabad.

I am sure the Indian Dairy Association must have carefully considered many themes for this year's DIC and has chosen a theme that is in complete consonance with current times. It can be argued that innovation drives entrepreneurship and it is equally true that entrepreneurship also fosters innovation. However, the most important aspect of both innovation and entrepreneurship is that both result in solutions to contemporary challenges, which ultimately helps the sector grow thereby maximising income opportunities for millions of dairy farmers.

While entrepreneurship, innovation and start-ups are buzzwords today, I can confidently say that our dairy farmers have been true entrepreneurs. With the support

of qualified professionals and visionary leaders, they established start-ups, in the form of "dairy cooperatives", that have stood the test of time. The defining characteristic of any entrepreneurial venture is the risk that entails the activity and a hope for profits. Is it not true that the farmers are the biggest risk takers with so many factors that are out of their own control impacting directly their activities, produce and income?

Well, we may not be able to imagine today the kind of risks that the dairy farmers took at the dawn of independence to form dairy cooperatives in Anand, Gujarat that gradually spread across the entire nation. The uncertain environment, absence of angel investors meant that their only seed-capital were **courage, resolve and absolute determination**. Braving all the ups and downs, some of these start-ups have now completed more than 75 years of existence and their success is in no manner less thrilling and less exciting as showcased brilliantly in the highly acclaimed movie "Manthan" in the 1970's by the renowned Director Shyam Benegal.

Through decades of unrelenting perseverance, these farmer led dairy starts-ups have forever transformed the Indian Dairy landscape. Since the promoters of these dairy cooperatives are farmers themselves, along with the sector, it has also led to unprecedented upliftment of the dairy farmer community. This has empowered them financially and socially, particularly our women dairy farmers. Our Founder Chairman, Dr. Verghese Kurien, the visionary leader had once remarked:

"True development is not the development of land, or of cows; it is the development of men and women."

Thus, innovation & entrepreneurship were introduced to the dairy sector way ahead of time. All our endeavours have been undertaken by keeping dairy farmers central to our work and have been enthused with entrepreneurial spirit. If we recall "Operation Flood", launched in 1970, led to socio economic development of dairy farmers by placing control of the resources they created in their own hands. The bedrock of Operation Flood was village milk producers' cooperatives, which procured milk and provided inputs and services, making modern management and technology available to farmer members.

We have always fostered innovation and found innovative solutions to unique challenges that we have faced in Indian dairying from time to time. From monetizing gifted commodities for funding the White Revolution to making milk powder from buffalo milk for the first time. We have also evolved our methods from transporting milk in rail tankers to transporting milk through trucks on trains today. Our innovations have included introduction of bulk vending machines to pouched milk, BMCs to rapid chillers, the list goes on. I can assure you that we will continue to tread this path to take the sector forward.

It is a remarkable revolution for a country that has over 1.3 billion people to transform from a milk deficit nation to becoming Aatmanirbhar and then emerging as the world's largest milk producing nation.

The saga continued and since the turn of the 21st century, the milk production has increased 3-fold in little over 2 decades. Milk production in India has reached 231 million metric tons in 2022-23 and has been growing at an annual growth rate of around 6%, almost triple the World's average growth. Today, India's share is about 25% of global milk production. Similarly, the Per Capita Availability (PCA) of milk has also reached o 459 grams per day in 2022-23, which is much more than the world average of about 310 grams per day.

As I had said during the last year's DIC that we are at the cusp of a great transformation to become the Dairy to the World and the time is as opportune as ever for India to take its rightful place in the global dairy arena.

Before we explore the opportunities that lie ahead, let me elaborate on some unique features of Indian dairying.

Unique features of Indian Dairying

It is widely known that the dairy cooperatives have played a pivotal role in the success of dairying in India since Independence. The Indian dairy cooperatives have been able to establish one of the most efficient supply chains in the world, ensuring that about 75% of consumer rupee goes back to the farmers. This is the highest globally in all milk supply chains and it is also the highest among all other agriculture commodities in India.

The dairy cooperatives have ensured that dairying remains as an attractive and remunerative livelihood option and a profession of choice. They also continue to provide a steady stream of income to our farmers

even in these uncertain climatic conditions when there are increasing instances of crop failures due to either excessive or unseasonal rains or droughts or due to unpredictable change in seasonal patterns.

The cooperative dairy structures have been built very painstakingly and as a result, their robustness has stood the test of time. In the past 6-7 decades, the impact it had on socio-economic empowerment in the rural milieu can never be overemphasised.

It all started as a struggle to break free from the clutches of manipulative middleman in Kheda, inspired by the freedom movement. Farmers under the leadership of Sardar Patel, Morarji Desai and Tribhuvandas Patel formed the dairy cooperatives. From humble beginnings in 1946, just before the dawn of Independence, collecting about 250 kilograms from 2 villages, it has today become a network of 2.3 lakh societies collecting about 600 Lakh Kilograms in the country every day, all 365 days. In the current fiscal year 2023-24, the milk procurement by dairy cooperatives has touched an all time high of 740 Lakh Kg per day with the efforts of all stakeholders and I am sure such momentum will be maintained in times to come.

Today, the milk produced in the country is valued at Rs 9.95 lakh crore. It is the largest agricultural produce by value, even surpassing the combined value of cereals, pulses and sugarcane. It contributes 5% to the national economy and provides employment to 8 crore farmers directly, majority of whom are small and marginal farmers, and landless households.

This small-scale dairying model is also the most sustainable as it does not compete with other resources. Milch animals are mostly fed on agricultural by-products and excesses from kitchen.

From a nation in milk deficit to the present, the success of this extraordinary transformation can be attributed to the presence of inter alia 3 major factors.

First our dairy farmers and professionals, second resilient institutional structures, and third enabling policy environment provided by successive governments.

Recognizing the importance of the sector, Government of India first created an independent Ministry of Fisheries, Animal Husbandry and Dairying in May 2019 which was followed by creation of another new Ministry of Cooperation in July 2021. The Ministry has appropriately given the call of "*Sahakar se Samriddhi*". These steps have greatly helped in bringing the animal husbandry sector and the cooperatives to the centre of national policies which will have multifarious benefits to the sector in the times to come.

The dairy sector has played a pivotal role in strengthening the four pillars identified by the Government which are Youth, Women Power, Farmers and Poor on which the magnificent monument of developed India can rest. All the four pillars have been the cornerstones of our dairy development missions at the grassroots providing livelihood to the youth and empowering dairy farmers especially women. Greater focus, increased budgetary allocations and a well-

planned future vision and roadmap will continue to buttress these pillars and make them stronger in times to come.

Further, Hon'ble Finance Minister, in the Interim Budget 2024-25 has announced that a comprehensive programme for supporting dairy farmers will be formulated. This is a welcome step and we will work shoulder to shoulder with the government for betterment of our dairy farmers.

To achieve the vision of *Amrit Kaal* when we celebrate 100 years of Independence in 2047, synergies need to be created between all stakeholders such as milk producers, the dairy cooperatives, the national level institutions, apex bodies, research institutes, academia, private dairies and entrepreneurs. While, in terms of growth in milk production, the other major milk producing centres are experiencing a stagnation due to various reasons, only India has emerged as a bright spot. We have become the engines of growth in milk production in the World today.

Along with being the largest producer, we are also one of the largest and fastest growing dairy markets in the world. Today our dairy market is worth Rs. 15 lakh crore which is likely to more than double to Rs. 36 lakh crore by 2028.

Thus, the prospects in the dairy sector today are better than ever before as such rapid developments give us a fantastic opportunity to be an active partner in this growth story. Entrepreneurship and innovation can play a very important role in realising the dream of India becoming the Dairy to the World.

These factors can act as the cogs in the wheels in propelling the dairy sector in India forward by fostering growth, sustainability, and competitiveness. To sustain the pace of dairy development in the country, it is essential that innovations made across the sub-sectors are focussed and converged towards holistic development of the sector. Now, allow me to elaborate on the key areas for carrying out the innovation and promote the entrepreneurial activities.

Innovation in various aspects of dairying

Improving productivity of animals

Keeping in view the challenges associated with our smallholder dairy system, we have to take innovative approaches for successful implementation of scientific programmes and ensure making dairying an efficient and sustainable proposition. It is becoming more and more important to focus on increasing productivity of milch animals.

The efforts like breed improvement, proper feed management and health care will work in tandem to improve productivity and improve quality of milk and milk production over time.

While breeding programmes will help in producing better animals for future, health and nutritional interventions would help in exploiting full genetic potential of the animals produced.

NDDB had initiated field Progeny Testing and Pedigree Selection programmes way back in 1985 for a few

economically important breeds of cattle and buffaloes. Understanding the importance, these programmes were extended to all major cattle and buffalo breeds under National Dairy Plan I (NDP I) in collaboration with Milk unions, Livestock Development Boards and Trusts, and subsequently continued under Rashtriya Gokul Mission (RGM) scheme of GoI.

Under these projects, scientific performance recording infrastructure was established in the country to facilitate genetic evaluation. As the success of such field based genetic improvement programmes relies on quality of data recorded, several innovative approaches have been adopted like introduction of GPS enabled Smart Weigh Scale (SWS), use of Dairy Survey app and INAPH/ Bharat Pashudhan app to ensure capture of quality and accurate data on real time basis under small-holder dairy production system.

Further, to accelerate genetic progress through early selection of animals, NDDB took proactive steps to implement Genomic Selection in the country by combining performance records captured in the field and DNA level information. In this process, genotyping chips i.e. INDUSCHIP and BUFFCHIP have been developed by NDDB and selection of young bulls based on Genomic Breeding values (GBV) has been initiated for major cattle and buffalo breeds.

In Vitro Fertilization and Embryo Transfer (IVF-ET), a latest assisted reproductive technology is also being used that helps in faster multiplication of elite bovines. One of the major cost components for IVF is imported

culture media. To tackle this issue, NDDB-Indian Immunologicals (IIL) has developed indigenous culture media for production of IVF embryos at a much cheaper rate, an endeavour dedicated to *Aatmanirbhar Bharat*. Recently, a Kankrej female calf was successfully born from an IVF embryo developed using this media.

Another area of innovation in breeding is sex-sorted semen. With mechanization of agriculture, relevance and utility of male bovine is dwindling and is often a liability to the dairy farmer. However, the cost of sexed semen is still high. We have developed an affordable indigenous technology for the sexing of bovine sperm. As a result, it is expected to significantly reduce the cost of sexed semen doses in the country.

Further, in order to promote availability of disease-free high yielding bovines and encourage entrepreneurship among youths, Government of India sanctioned a project "Breed Multiplication Farms" under RGM scheme. As an outcome of this project, it is expected that in the near future many entrepreneurs will take up this activity across the country which would not only open up earning stream for youths but also make available highly productive genetically superior quality animals to farmers.

Other avenues for entrepreneurship in breeding front are increasing AI coverage by providing services at farmers doorstep and developing smart devices to monitor various aspects of animals' reproductive cycles.

The improved genetic potential of dairy animals resulting from breed improvement programmes needs

to be supported by increasing availability of good quality feed and fodder resources, efficient management of fodder resources while nurturing innovations and entrepreneurship.

Scientific animal feeding is critical to compliment the efforts put-in for productivity enhancement of animals. Scientific feeding practices for calves, encompassing prenatal, neo-natal, and postnatal feeding management of young calves and heifers, holds the key to transform the Indian dairy sector further. Silage making has emerged as a viable solution to deal with seasonal and regional variations in green fodder availability. NDDB has already demonstrated successful small-scale silage model for DCSs and large-scale model for Milk Unions/ Dairy Federations. Recently, NDDB has successfully demonstrated technology for converting green paddy crop stubbles into silage. This can contribute to reducing air pollution as it avoids crop residue burning as well as it helps in addressing fodder scarcity in the country to some extent.

Another innovative approach to deliver precision nutrition is development of Total Mixed Ration. NDDB has introduced silage/green fodder-based *'ready-to-eat' packed* TMR, offering the potential to deliver the required nutrients and enhance feed efficiency. TMR feeding has yielded promising results, manifesting in an increase in milk yield thereby boosting net daily income.

Also, NDDB has demonstrated innovative technology for utilisation of empty pea pods for silage making at Jharkhand Milk Federation. It is a vivid example of

converting waste to wealth. Apart from this, there is tremendous scope for utilisation of other vegetable and fruit wastes such as tomato pomace, peels of orange and mango. While some unconventional feed items are already being used, others may require treatment or processing before being fed to animals. Effective utilization of these resources would certainly help in augmenting fodder resources in the country. I am sure taking some cues from these innovations, some entrepreneurs will be willing to take-up some of the activities and scale them up for the benefit of the dairy farmers and the dairy sector along with creating associated employment as well.

Another important area to improve productivity is to undertake the one-health approach. Food security is increasingly gaining traction when animal and animal products are being discussed. Absence of harmful bacteria, antibiotic and other drug residues, hormones and unwanted foreign matter are some of the major concerns that are being raised while discussing the subject.

A cost-effective innovation that can be applied in dairying is the use of ethnoveterinary medicine (EVM). EVM provides a simple, cost-effective and efficacious option to the dairy farmers. It also provides an instant management option wherever the availability of veterinary delivery system is limited. The EVM formulations are being popularized by NDDB for around 30 commonly occurring ailments in bovines. These have been streamlined and validated by Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) and the Transdisciplinary University (TDU).

The potential for organic dairying through use of traditional knowledge systems like EVM is immense. EVM formulations being promoted by NDDB can also play an important role in reducing drug usage, especially antibiotics, which will in turn help in stalling antimicrobial resistance (AMR) which is a major emerging public health issue. From the business point of view, it would strongly buttress the initiative of organic farming which could fetch premium prices for the products.

Enhancing the share of value-added dairy products

Demand for milk and dairy products in India is rising due to factors like growing urbanization, increase in population, rise in per capita income, changing lifestyle, food habits, health consciousness, export opportunities, etc.

During the last few years, dairy products such as cheese, ice-cream, paneer, flavoured milk, table butter, curd, lassi and butter milk have been showing impressive growth. In volume terms, the average growth rate of major dairy products is ranging between 15-20% per annum. Higher growth is being witnessed in fresh products (e.g., curd, lassi, flavoured milk, buttermilk) and innovative products (like A2 milk, probiotic products, organic products). This trend is not only likely to sustain but increase as India climbs the stairs of world economy and soars towards prosperity.

There is an incredible scope in developing innovative dairy-based products targeted for specific groups of consumers such as infants, young children, elderly,

pregnant women, sports persons or geography-specific. Good understanding of the specific requirements of these populations is needed for innovation of such products. Designing products for malnourished children, diabetics or obese needs consideration of their specific health conditions, necessitating special scientific knowledge and technical skills that encompass nutrition as well as health aspects.

Since the value-added products generate higher margin than the liquid milk, both cooperative and organised private sector have to work innovatively towards increasing the share of value-added products that in turn would help in providing remunerative price on a sustainable basis to dairy farmers.

Increasing India's share in World Trade of milk and milk products

Despite India being the largest milk producer in the world, its share in global dairy market is less than 1 percent. To increase India's share in World dairy trade, a time-bound systematic approach needs to be followed to overcome hurdles, mainly Non- Tariff Measures (NTM), unattractive prices, effective overseas marketing strategies and trust deficit between Indian exporters & overseas buyers.

The major factors hindering the growth in the export of milk and milk products are the uncompetitive prices, prevalence of Foot and Mouth Disease (FMD) and other diseases, lack of traceability to cattle level, various

Sanitary & Phytosanitary Measures (SPS), Technical Barriers to Trade (TBT) measures in the foreign market, low visibility of domestic products and ineffective marketing practices, etc.

The Government of India has set up a National Cooperative Exports Limited (NCEL) under Multi-State Cooperative Societies (MSCS) Act, 2002 during January 2023. This Society is focusing on exporting the surpluses available in the Indian cooperative sector by accessing wider markets beyond the geographical contours of the country. It will promote exports through various activities including procurement, storage, processing, marketing, branding, labelling, packaging, certification, research and development, etc. and trading of all types of goods and services produced by cooperative societies.

The aim should be to increase India's share in world dairy exports that can be achieved by following systematic and time-bound approach to alleviate the hindering factors of export promotions.

At the same time, two commodities Lactose and Whey & its products, which have origins in milk are imported in huge quantities in India. This is because the cost of domestic production remains high due to lack of economies of scale. Therefore, with a ready domestic market, it provides unique opportunity to entrepreneurs to work on these two products, scale-up and ramp up domestic productions so that we are not dependent on imports for these two dairy commodities.

Ensuring quality fodder seeds to dairy farmers

Ensuring quality fodder seeds is crucial for dairy farmers, as the production of the fodder with better yield and nutritional quality directly impacts the economics of the dairy farm and health & productivity of dairy animals.

To ensure the availability of quality fodder seeds, the Government of India has also set up a Bharatiya Beej Sahakari Samiti Limited (BBSSL) under Multi-State Cooperative Societies (MSCS) Act, 2002 during January 2023. This society will focus on making available the quality seeds through the network of the village level cooperatives.

There could be various innovative strategies where stakeholders can work together to ensure a consistent supply of high-quality fodder seeds to dairy farmers, contributing to the overall health and productivity of dairy animals and the sustainability of the dairy farm.

Use of ICT in Dairying

Technological advancements are expected to shape the future of dairy industry in several ways. Automation and robotics with indigenous approach will have the potential to increase efficiency, reduce labour costs, and improve animal welfare. Technology will also contribute to better animal health monitoring, improved genetics through artificial insemination, and advancements in nutrition. Additionally, the innovative use of block chain technology will enhance traceability and quality control. The use of open source technology such as OpenERP

developed by NDDB would substantially reduce the cost of purchasing or procuring the hardware and/or licences and at the same time help in managing the different activities seamlessly. NDDB ERP was awarded first prize in Research and Development Category of "International Dairy Federation Innovation Award 2022" at World Dairy Summit 2022 for being the most innovative product.

NDDB had developed an Information Network for Animal Productivity & Health (INAPH) - to capture real-time data on breeding, nutrition, and health services delivered at farmer's doorstep, for its PT and PS projects. Later INAPH was adopted as a national database by the Government. Recognising the significant role of digital platform and success of INAPH; DAHD, GoI and NDDB are jointly undertaking the development of an end-to-end farmer-centric, technology driven LiveStack eco-system on the foundation of existing INAPH application through an ambitious programme named as National Digital Livestock Mission (NDLM). The NDLM will provide unique identification to livestock population linked to farmer identity and will be the foundation for state and national level livestock programmes thus enhancing the traceability of animals and animal products for improved domestic and international trade. It will create a "farmer centric digital eco-system" through which the farmer can directly obtain services such as veterinary care at their doorstep and knowledge to take care of their livestock.

Other applications developed include Automatic Milk Collection System (AMCS) and e-Gopala which are farmer centric and aimed at improving transparency and

providing one stop solutions to dairy farmers. Overall, these technological advancements have the potential to revolutionize the dairy industry.

Reducing the environmental footprint of Dairying

Indian dairy industry is taking various measures to reduce its environmental footprint while maintaining high production levels. Improving feed quality and sourcing raw materials with a lower environmental impact needs to be prioritized. Increasing per animal productivity through better feed utilization and good ensiling procedures contributes to a reduced footprint.

Water usage per litre of milk processed needs to be addressed, and initiatives like rainwater harvesting and wastewater utilization for various purposes need to be propagated and adopted on wider scale. Greater awareness and visible outcomes are needed to enhance environmental practices in the dairy sector.

The global dairy industry is committed to become Carbon Neutral by 2050. A holistic approach comprising of genetic improvement, scientific feeding and animal healthcare management, manure value chain, renewable energy and Carbon offsets/sequestration are envisaged to contribute substantially for making Indian dairy sector Carbon Neutral and would complement the efforts of transforming India to a developed country by 2047. Scientific feeding interventions such as Ration Balancing and TMR have shown potential to mitigate methane emission by 10-15 per cent. However, additional reductions in enteric methane would be possible if

appropriate methane inhibitors, feed additives are included in cattle feeds and made available to farmers for direct supplementation to animals. In this way, our dairy sector can address one of the largest hotspots of enteric methane in total emissions of the sector.

Efficient Manure management

As the dairy sector in India is classified as smallholder dairying system, innovation in the management of the dung or manure is a critical aspect of sustainable farming practices. Proper handling and utilization of manure is essential for increasing the farmers' income and at the same time it helps in maintaining soil fertility, reducing environmental impact, and ensuring the overall sustainability of dairy farming.

NDDB started working on the innovative models for the efficient management of manure by setting up India's first all women manure cooperative. The cooperative has established end-to-end manure value chain wherein women members have small sized biogas plants of 2 cubic metre. The biogas generated from the small plant suffices the cooking energy need of 6-8 family members, who can utilize the slurry in the farm and sell the surplus slurry to manure cooperative for further conversion into value added organic fertilizers. This cluster model with small biogas plant is now popularly known as 'Zakariyapura Model'. The Zakariyapura Model has been considered in the Gobardhan scheme of Govt. of India and already replicated in 11 locations across 9 states nationwide.

Further, to meet the thermal & electrical energy needs of the entire dairy plant for processing of milk, a cow dung based 100 MT per day biogas plant was setup at Varanasi Milk Union which has raw biogas generation capacity of 4,000 cubic metre per day.

This 'Varanasi Model' is one of its kind centralized model wherein on the one hand farmers are getting price of cow dung along with milk, on the other hand the energy requirements of the dairy plant are being met. Additionally, organic fertiliser is being produced which increases the agriculture productivity and also betters the soil health. This Varanasi Model not only promotes the use of green energy but also reduces the processing cost which can be easily replicated by other dairies.

To undertake focused work in biogas and biogas slurry based organic fertilizers, NDDB has established a wholly owned subsidiary company NDDB Mrida Ltd in the year 2022.

It is with great pleasure that I would like to inform that NDDB, Suzuki R&D Centre India Pvt Ltd (An affiliate of Suzuki Motor Corporation, Japan) and Banas Dairy have started working on four large scale biogas plants with a capacity of 100 MT of dung per day each. Suzuki will be providing the funding support of Rs 230 crore, Banas Dairy has provided the land and will handle operations while NDDB will be providing the technical support.

Hopefully, this new and unique partnership between the dairy and auto sector plays an important role for not just

to provide affordable mobility but also for showcasing the future of Indian dairying as environment-friendly and sustainable while becoming the "Dairy to the World".

Taking the manure value chain to the next level, NDDB, Sustain Plus Energy Foundation (a Tata Trust initiative) and Banas Dairy are working on producing hydrogen from dung for which technology has been conceptualized, developed and trials have been already completed successfully. With this technology along with hydrogen, we are also getting the carbon black as another key output.

Further, phased mandatory blending of compressed biogas in compressed natural gas for transportation and piped natural gas for domestic purposes announced in the recent interim budget are a positive move.

Taking a focused approach on efficiently managing manure/dung will be key for achieving sustainability in Dairy sector along with making India Aatmanirbhar in terms of fuel and fertilizers.

Training and Development

To enhance knowledge and develop entrepreneurial competencies among youth and dairy farmers, a dairy entrepreneurship programme on animal rearing is being offered by NDDB. It includes academic modules focused on entrepreneurial topics and practical aspects with hands on practices. More than 350 rural youth have benefited from this training till now.

NDDB is also the nodal agency for conducting training and capacity building for A-HELP (Accredited Agent for Health and Extension of Livestock Production) across India. So far, about 2,700 Pashusakhis have undergone A-HELP training across 8 States.

Improving the energy efficiency of the Dairy plants

In India, according to a study, energy costs comprise about 30% of the overall production cost of dairy products. Integration of boilers with concentrated solar thermal system (CST) helps to reduce the overall operating cost. NDDB has implemented 17 CST projects with a combined capacity of about 208 lakh Kcal/day across the country. Solar Photo Voltaic (PV) is another best-suited option to capture solar energy and convert it to electrical energy. To promote the installation of Solar PV in dairy projects NDDB has installed 300 KWp capacity of Solar PV System in Bihar, Gujarat and Karnataka to begin with.

Also, another innovative approach is to utilize agri-waste briquette in multi-fuel boiler. Briquette being carbon neutral is alternative to furnace oil or coal. A few significant installations of briquette fired automated boilers by NDDB are of capacity 25 TPH tonnage per hour at Sabar Dairy, Gujarat and 10 TPH at Channarayapattana, Karnataka for milk powder plant.

I am sure that with such positive environment and support, we can all come together and script history to truly become the Dairy to the World.

Concluding remarks

NDDB has always been at the forefront of nurturing innovation and propagating entrepreneurial spirit. We will continue to spearhead the sector towards sustainability through innovation and entrepreneurship.

In recent years, winds of change have swept across Indian dairying, driven by technological advancements and innovative practices which are reshaping this sector, propelling it into a new era of sustainability, efficiency, and prosperity. Smart farming techniques, precision nutrition, automatic milking systems, data analytics, and genetic improvement programs are enhancing efficiency and output. As a result the sector is witnessing a great transformation. The adoption of sustainable practices, such as manure value chain, biogas, harnessing solar power, natural and organic farming and reduction in GHG emission reflects a growing awareness of environmental responsibility.

In the current milieu, entrepreneurship can be one of the engines for infusing a lot more innovation into Indian dairying. Start-ups focused on dairy technology, value-added dairy products, research and development, renewable energy and agri-fintech are emerging as key players in the sector. These entrepreneurs are not only creating innovation, economic value but are also generating employment opportunities and fostering a culture of risk-taking and resilience.

I am confident that this magnificent conglomeration of Government support, Cooperative Dairies, Private Dairies and entrepreneurs will surely drive Indian

dairying into a new era of growth and sustainability. This will certainly help us achieve the goal of becoming the Dairy to the World. I am sure that the proceedings of the Conference will help in galvanizing all our efforts towards the common goal of spurring rapid growth of the sector along with increasing sustainability.

As we gear up for this transformation, let us also commit ourselves to ensure that the benefits of this revolution reach every corner of our great nation and ultimately benefit the dairy farmers of our country who are also entrepreneurs in their own right. Together, we can build a future where Indian dairying not only meets the needs of the nation but also of the World.

Thank you!

राष्ट्रीय डेरी विकास बोर्ड, आणंद 388001, गुजरात, भारत
National Dairy Development Board, Anand 388001, Gujarat, India
www.nddb.coop

@NationalDairyDevelopmentBoard youtube/NationalDairyDevelopmentBoard
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