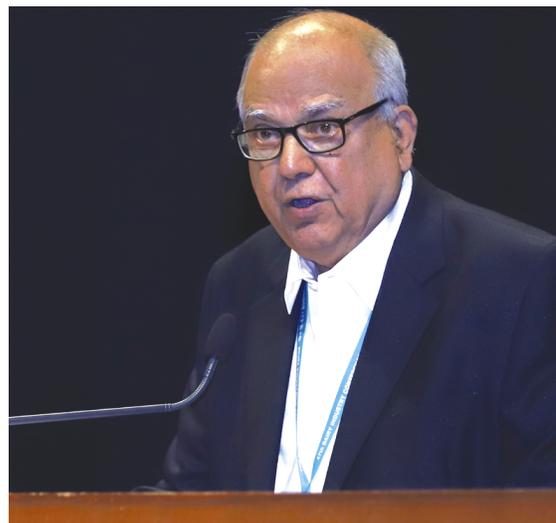


Welcome Address

By
Dr. Raghu Chattopadhyay
Chairman, IDA (EZ)



Good morning everybody.

On behalf of the Indian Dairy Association (IDA) and the Organising Committee of 47th Dairy Industry Conference, Patna, I heartily welcome you all on this auspicious occasion of inauguration of the Conference.

The theme of the Conference is “Innovative Approach for Enhancing Dairy Farmers Income.”

It is my immense pleasure to heartily welcome Shri Nitish Kumar, Hon’ble Chief Minister, Shri Sushil Kumar Modi, Hon’ble Deputy Chief Minister and Shri .Pashupati Kumar Paras, Hon’ble Minister of Animal Husbandry & Fisheries Resources of Government of Bihar for inspiring us to grace the occasion.

I express warm welcome to Dr Caroline Emond, Director General of International Dairy Federation(IDF) for delivering her speech on the conference Curtain Raiser , elaborating global scenario of Dairy Industry.

I would like to welcome Shri Dilip Rath, Chairman, National Dairy Development Board, who would be delivering the Keynote address covering the outlook of dairy development in India, prioritizing the upliftment the economy of poor milk producers of our country

I also welcome Smt. Sikha Srivastava, the Managing Director of Bihar Cooperative Milk Federation for their unstinted support in organising the first national Dairy Industry conference in Bihar on a befitting manner.

I extend warm welcome to Dr. G.S. Rajorhia, the President of Indian Dairy Association and Dr. R.R.B Singh, the Director of National Dairy Research Institute, Karnal for their untiring effort in guiding and encouraging us to make the Conference a great success.

I would express my sincere welcome to all the members of Central Executive Committee of IDA, the Zonal Executive Committee of IDA (East Zone) and the Executive Committee members of IDA (Bihar State Chapter) for their continuous tired less support in organizing the conference a grand success.

I would welcome the representative of all dairy industries especially the milk producers of different Milk dairy cooperatives, multinational companies, Milk Federations and private dairy industries for attending the conference and get enriched with various aspects useful for enhancing their income.

I also welcome the Chairmen, Co Chairmen , Co-ordinators and Speakers of all the technical sessions of the conference for helping us to conclude with a clear professional views.

On behalf of the organising committee of the conference, I heartily welcome the sponsors , advertiser and exhibitors, who have contributed significantly for the success of the conference.

I extend warm welcome to the press and electronic media for giving a wide coverage on the conference.

Last but not the least, on behalf of the Organising Committee I welcome the kind gesture of concerned Department ,Government of Bihar for allowing us to utilize the facility at Samrat Ashok Convention Centre, Patna for holding the 47th DIC from 7th -9th February 2019.

I do hope you would enjoy your stay at Patna while attending the Conference.

Thank you.



Presidential Address

By

Dr. G.S. Rajorhia

President, Indian Dairy Association

Respected Shri Nitish Kumar Ji, Chief Minister of Bihar; Shri Sushil Kumar Modi, Deputy Chief Minister of Bihar; Shri Pashupati Kumar Paras, Minister of State for Animal Husbandry & Fisheries, Bihar; Shri Dilip Rath, Chairman, National Dairy Development Board, Anand; Ms. Caroline Emond, Director General, International Dairy Federation, Brussels; Dr. Raghu Chattopadhyay, Chairman, Indian Dairy Association (East Zone); Mrs. Shikha Srivastava, Managing Director, Bihar State Cooperative Milk Producers Federation; Shri Sudhir Kumar Singh, Secretary General 47th Dairy Industry Conference; Officials of Sudha Dairy, Members of the CEC of Indian Dairy Association, Members of Indian Dairy Association invited guests and Press & Media.

On behalf of the Central Executive Committee of Indian Dairy Association and on my own behalf, I welcome you all to this three days Dairy industry Conference which bears a theme on enhancing the income of farmers.

The Indian Dairy Association was registered in the year 1948 in Bangalore and later shifted in 1952 to New Delhi. At present, IDA has some 3500 members belonging to different categories comprising of dairy farmers, research scientists and educationists, professionals and planners, milk product factories, equipment manufacturers and packaging industries.

The Central Executive Committee of the Association meets once in three months to deliberate upon the current issues of the dairy industry. There are four Zonal Branches located in North, East, South and West, besides State Chapters and Local Chapters. The IDA organizes Annual Conferences on topics of national significance besides meetings, regional Seminars and Workshops.

IDA publishes a monthly journal "Indian Dairyman" and two bi-monthly Journals "Indian Journal of Dairy Science" and "Dugdh Sarita" in Hindi. It also publishes bulletins and monographs on milk products for the benefit of dairy industry. IDA attracts lot of International visitors



to its Delhi office.

IDA gives many Awards in recognition of meritorious contribution of the individuals in the form of Patron, Fellows, Best Dairy Women, Best research papers in IJDS and technical articles published in Indian Dairyman and scholarships to students of Dairy Technology. IDA maintains strong linkages with farmer organizations, industry Associations and Government bodies. IDA also conducts training in Food Safety Management System and training of Food Safety Supervisors which has recently been mandated by the Food Safety and Standards Authority of India. IDA represents itself on many other national and international organizations.

You are aware that dairying plays a very significant role in the livelihood and employment of the rural masses besides assuring them the nutritional security at affordable

prices. The dairy plants in India return about 80 to 85 per cent of the consumers' rupees to the milk producers. They add value to make milk more rewarding to milk producers and, therefore, we consider dairying as a key driver for enhancing farmers' income.

India follows different systems of dairying. Nearly 75 per cent of the total milk is contributed by landless labour, marginal farmers and women who unfortunately become widows. They are able to earn their daily income from the sale of milk and thereby sustain the family. In view of the economic significance of dairying in India, many peri-urban dairy farms have been established around the cities and towns where in each unit some 50 to 200 milking animals are reared for milk production. Many IIT Graduates, MBAs and entrepreneurs are entering into dairying field with a view to supply organic milk free from injurious contaminants like pesticides, antibiotics, hormones, etc.

Many commercial dairy farms with a capacity of 1500-2000 dairy animals are also being established across the country. They are expected to play a useful role in the supply of safe milk and milk products to the consumers.

This Conference will discuss breed improvement methods employing genome selection, embryo transfer technology, application of frozen semen, sexed sperm technique for producing female calves and artificial insemination. There will be presentations on economic feeding of dairy animals through crop residue management, baling, silage making, green fodder production, specially the hybrid fodder crops, perennial grasses, legumes and by promoting by-pass protein, by-pass fats and other feed supplements. Emphasis is expected to be laid upon the utilization of non-conventional feed resources and use of compounded cattle feeds. It may be pertinent for the country to revisit the export policies on maize, oilseeds, cakes and molasses, in order to make these ingredients available at affordable prices to feed our livestock efficiently.

Under the animal healthcare management, we are expecting some presentations on the importance of vaccination of animals for foot and mouth disease, hemorrhagic septicemia, Theileriosis, Brucellosis and on effective methods of deworming and tick control. Mastitis is a very common disease especially in high yielding

cows. Methods for its prevention and control will be reviewed. The Veterinary Health delivery system needs lot of improvement in the country especially for controlling embryonic and calf mortality incidences.

At this point of time, some of the challenges before the dairy farmers are low productivity of animals due to genetic deficiency in *desi* breeds, high milk production cost, fodder shortages and lack of resource use efficiency of farm inputs.

The climatic change is adversely affecting the production and productivity of our dairy animals. It may, therefore, be necessary to redefine agriculture and also dairying for bridging the yield gaps existing between inter and intra regional farmers and families.

At present only about 30 per cent of the total milk produced in the country is being collected by the organized sector of the dairy industry falling under the domain of cooperative and private players. The ideal thing should be to collect all the surplus milk from as many villages as possible. This will require huge investments in infrastructure development for collection of milk and establishment of cold chain facilities.

Our farmers have been demanding minimum support price not only for their agriculture produce but also for milk. Institutional mechanism will have to be developed for milk pricing under various techno-economic situations. Great scope exists for promoting small ruminants like goat and sheep. You are aware that goat milk possesses several immunological properties such as increasing the platelet counts in blood in Dengue fever cases and many other medicinal properties. Specialty cheeses like Feta can be produced from goat and sheep milk to multiply the income of goat and sheep farmers by about 10 times. UHT processing of goat milk holds a great promise for inter-state marketing. Use of camel milk with lot of therapeutic virtues also would give opportunity to camel farmers residing in arid and semi-arid zone of the country.

In order to make dairying as a tool for multiplying farmers' income, policy makers may be advised to bring about tax reforms like reducing GST on ghee from 12 per cent to zero per cent. At present 12 per cent GST charged on ghee increases its price by ₹ 50/- per kg. This makes it inaccessible to the low income groups. Ghee is known to possess many essential poly unsaturated fatty acids and all the fat soluble vitamins. One gram of



ghee supplies 9.25 kcal energy. I request Shri Sushil Kumar Modi, Dy. Chief Minister of Bihar, who is also the Vice Chairman of GST Council to support the long pending request of the dairymen of India to completely withdraw GST on ghee to facilitate its marketing as mountains of stocks have piled up in the dairy warehouses leading to delayed payment to milk producers.

The unemployed youths, landless and marginal farmers see dairying as a boon for socio-economic transformation. As this group of Indian society does not have enough capital to establish production and processing centers on small scale right in the village it may be advisable to provide interest free loans to them

through Kisan credit cards.

It may be desirable to waive off income tax on milk and milk products produced by the dairy plants of the district cooperative milk producers unions on the pattern of agriculture. At present, primary milk cooperative societies are exempt from income tax. Money saved will be paid back to milk producers to increase their income.

There will be many more such issues that are expected to be discussed during the next three days in the Conference and I wish you the greatest success in the deliberations.

Thank you.



Keynote Address

By

Shri Dilip Rath

Chairman, National Dairy Development Board

Respected Shri Nitish Kumar Ji, Hon'ble Chief Minister of Bihar; Shri Sushil Kumar Modi, Hon'ble Dy. Chief Minister of Bihar; Shri Pashupati Kumar Paras, Hon'ble Minister for Animal & Fish Resources, Govt of Bihar; Shri Tarun Shridhar, Secretary, Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture & Farmers Welfare, Govt of India; Ms Caroline Emond, Director General, International Dairy Federation; Dr. G.S. Rajorhia, President, Indian Dairy Association, distinguished guests, delegates representing the dairy industry, ladies and gentlemen.

I am indeed privileged to have this opportunity to deliver the keynote address on the theme **“Innovative Approach for Enhancing Dairy Farmers' Income”** which is of great relevance today as we collectively strive to maintain our self-sufficiency in milk and at the same time ensure better livelihood for millions of our dairy farmers, especially the smallholders, who are backbone of our dairy industry.

Role of Dairying in Farmers' Income

Low capital investment, short operating cycle and steady returns, make dairying a preferred supplementary livelihood option for rural households. As a tool of socio-economic development, it has been contributing to the livelihood of farmers in many ways - income from milk and milk products, insurance against drought, emergency cash requirements, household nutrition, fuel for cooking, manure for crops, draught power for farming and many more.

As per the Situation Assessment Survey (2013) of NSSO, dairying is a supplementary source of income for almost half of the agricultural households. It is noteworthy that between 2002-03 and 2012-13 (the latest period for which data is available), contribution of “Animal farming” in income of agricultural households grew from 4 per cent to 12 per cent while that of “non-farm activities” and “wages & salaries” had in fact declined. Income from dairying contributes around



84% to the income from “Animal farming”. Considering the relatively higher growth of milk sector during the last five years as compared to agriculture and other allied sectors, there is every reason to believe that the contribution of animal farming and dairying in particular to total income of rural households has significantly grown.

A renewed focus on dairying would immensely contribute to accomplishing the vision of the Government of India to double the farmers' income by 2022.

Dairy Cooperatives

It is a matter of pride for all of us that India has been the largest milk producing country in the world for well over two decades. The journey of Indian dairy sector from the situation of deficit in 1950s and 1960s to the situation of self-sufficiency in the decade following 1970s has seen various dairy development interventions. Operation Flood, Perspective Plan, National Dairy Plan and other programmes of Central and State Governments have



collectively made the country self-reliant in milk production.

In this journey from deficit to sufficiency, Dairy Cooperatives, representing mostly the small holders, have played a leading role by continuously striving to augment incomes and livelihoods of rural milk producers and by supplying safe milk to consumers. The Dairy Cooperatives give back about 75% of the realisation to the farmers, who own and control the cooperatives, while globally only about 30-40% of the consumer price goes back to the farmers.

Status of Indian Dairying

In the last four and half decades, milk production grew eight-fold, from about 22 million tonnes in 1970-71 to 176.35 million tonnes in 2017-18. With about 95% of dairy animals' owner owning less than 5 animals, dairying in India is primarily a small holder system.

The growth in milk production has outpaced the growth in the population and food grain production, resulting in continuous growth in the per capita availability of milk from 112 grams per day in 1970-71 to about 374 grams per day in 2017-18 and thus contributing towards the nutritional security of our nation.

Challenges

While we should definitely take pride in the progress of our dairy industry during the last five decades, we need to appreciate the fact that the dairy sector today is witnessing a host of challenges and 'business as usual' may not lead us in sustaining the gains of the past decades and continue to make dairying a remunerative activity.

The factors which are impacting the sustainability of dairying include challenges associated with low productivity of milch animals, natural resources constraints, rising feed/fodder costs, lack of access to organised market and institutional credit, price volatility due to integration with the global market, ageing processing infrastructure, lack of awareness on scientific animal management, animal healthcare, shift to non-dairy activities with relatively less drudgery, especially by the younger generation, adverse impact of climate change etc. These challenges can only be addressed by adoption of innovative technologies and approaches in a way that contributes to enhance farmers' income and promotes dairying as a sustainable livelihood option for them.

Food Aid for Development and Cooperative Strategy

One of the remarkable innovations during Operation

Flood programme was using "Food Aid" as an investment to promote development of our domestic dairy sector. If the commodity aid we received were used for consumption, in all probability our country may have continued to be import dependent even today like many other Asian and South Asian countries.

The other remarkable innovation was consciously choosing the cooperative strategy for promoting dairying in our country. You will agree that cooperative strategy in our smallholders dominated dairy structure was the most appropriate strategy to provide market access to millions of small milk producers along with a remunerative price for their produce.

Today our dairy industry faces different sets of challenges and making it efficient and sustainable requires adoption of innovative approaches across the dairy value chain in the form of introducing new technologies, innovative techniques, new product and process development, alternative organisational structures etc.

Productivity Enhancement through Genetic Progress

Dairying in our country will be globally competitive only if animal productivity increases to at least match the global average, if not close to the best in the world. While expansion of AI coverage would certainly contribute to increase productivity, we need to recognise the urgency of adopting Advanced Reproductive Technologies (ARTs) to accelerate the genetic progress to increase productivity, production and return to farmers. These ARTs include:-

- Use of sex sorted semen in our AI programmes to produce only female calves. However, high cost of getting the required semen doses from the existing technology which is patented by one or two breeding companies restricts its widespread application in our country. Therefore, we need to continue our R&D efforts to indigenise the technology which would be both breed and species neutral and more affordable to the farmers.

- Use of genomic application in our selection programmes has immense potential to expedite the genetic progress, as we have seen in the case of dairy developed countries. I am glad to say that for the first time, NDDDB has developed an indigenous chip namely, INDUSCHIP, for genotyping our indigenous breeds of cattle and their crosses for genomic selection. We

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are also in the process of developing similar genotyping chip for buffaloes in the next few months. Use of genomics will increase the accuracy of our animal selection programme and help in expediting productivity enhancement of our milch herd.

- Ovum pick-up and In-vitro Embryo production technology is a powerful tool for introducing superior germplasm in our milch animal herd at a much faster rate and thereby shortening the period of genetic progress. This technique provides the opportunity to harvest large number of embryos from elite donors at less cost. NDDDB has established a state-of-the-art OPU-IVF lab at Anand and we have already started seeing the results. Our objective is to develop this centre as a Centre of Excellence which would train large number of technicians and professionals in our country. We need to commercialise IVF embryo transfer and the day is not far off when embryo transfer using IVF technology would replace conventional AI on a large scale thereby speeding up productivity enhancement.

- Although our scientists in NDRI have demonstrated the use of cloning technology to produce high genetic merit animals, much more collaborative effort needs to be made both by the scientists in NDRI and veterinary universities to commercialise this ART, notwithstanding the ethical issues involved. Apart from this, the ART of producing synthetic gametes, which is at a nascent stage of development on which Department of Biotechnology has already initiated work, has the potential to produce very large and theoretically infinite number of embryos from embryonic stem cells of the most elite animals. This can bring about significant level of productivity enhancement in our herd. These technologies can be game changers in bringing about productivity enhancement of our indigenous breeds in a very short period, which will benefit the dairy farmers significantly.

- By end of the National Dairy Plan Phase I (NDP I), annual requirement from all the semen stations for High Genetic Merit Bulls of different breeds would be met through Progeny Testing and Pedigree Selection Programme. This will certainly go a long way in improving the productivity of the future generations of milch animals.

- All these breed improvement programmes covering AI, bull production, embryo production and

transfer, transfer of sex sorted semen etc., would need robust data recording systems to analyse impacts, assess reproductive efficiencies etc. These ICT based systems would help the breeding agencies and service providers to improve their performance, which would in turn directly benefit the farmers.

Ensuring Healthier Animals

Healthcare and management of animals is important, particularly when animals are maintained in small herds. Majority of dairy farmers in our country are small or marginal who find it difficult to afford a veterinarian or bear the treatment charges when their animals fall sick. In order to mitigate this, NDDDB has been propagating the concept of Ethno Veterinary Medicine (EVM) for 14 major ailments in bovines. This offers a very cost-effective, easy and effective option to the farmers to manage these ailments including mastitis with ingredients which are usually available locally. Use of EVM will result in reduced use of drugs and antibiotics and thereby help to reduce the incidence of antimicrobial resistance which is a serious public health concern today.

For bringing about sustainable solutions to animal health issues faced by the farmers, NDDDB has been pioneering pilot projects on field models for treating economically important diseases like mastitis, brucellosis, etc. These innovative approaches towards ensuring healthier animals for milk producers need to be widely implemented throughout the country with the support from State Animal Husbandry Departments and Veterinary Universities/Research Institutions.

Improving Animal Productivity through Scientific Nutritional Technologies

It is well known that the “feed cost” in our country accounts for about 70% of total cost of milk production. Thus, any reduction in cost of feeding by optimising feed utilisation efficiency results in augmenting dairy farmers' income.

Ration Balancing Programme (RBP) under National Dairy Plan- Phase I covering about 2.8 million milch animals has successfully demonstrated that feeding balanced ration to milch animals results in improved milk yield and increase in net income of farmers by ₹15-25 per day.

With increased pressure on land for production of food crops, advanced fodder production and conservation technologies are required to be adopted in large scale.



NDDDB has been promoting use of high yielding varieties of certified/truthfully labelled fodder seeds for increasing the productivity of fodder crops. Simultaneously field demonstrations have been organised for securing available biomass through variety of auto and manual mowers, its conservation through silage making and storage in bio mass storage silos. These technologies have now been widely adopted by the farmers and many entrepreneurs are also taking this forward as a business enterprise.

Under NDP-I, apart from establishment of five fodder seed production plants, two crop residue enrichment and densification plants have also been established for increasing the nutritive value and its transportation from surplus area to deficit area.

All these feed and fodder innovations will greatly contribute in reducing feed cost, increasing productivity and returns to farmers.

Creating Efficient Dairy Infrastructure

Most of the milk processing infrastructure with the producer owned institutions were commissioned during the Operation Flood period and many of these plants have not been modernised or expanded thereafter. These age old plants need to be modernised/expanded and new processing infrastructure with energy efficient technology need to be created for reducing the processing cost and manufacturing of quality milk & milk products.

The recently launched Dairy Processing & Infrastructure Development Fund (DIDF) scheme announced by Government of India in December 2017 with the total outlay of ₹ 10881 Crore will facilitate modernisation and expansion of these ageing dairy plants. The scheme envisages creating additional processing capacity of about 126 Lakh litres per day and value added products (VAP) capacity of 4,600 MTPD. The dairy cooperatives are provided loan at a concessional interest rate of 6.5% with interest subvention from Government of India. Other similar projects are also in different stages of finalisation which would contribute towards building a more efficient dairy infrastructure.

Government of India is also providing financial support to private processors for creation/expansion of processing and preservation capacities, integrated cold chain and value added infrastructure etc., under the umbrella Scheme-Agro-Marine Processing and Development of Agro-Processing Clusters (SAMPADA) being implemented with the allocation of ₹ 6000 Crore.

The efforts to modernise the dairy processing sector are being combined with innovative technologies for process automation, utilisation of non-conventional sources of energy, integrated recovery systems, reduction in losses, savings in utility consumption like steam, chilled water, electricity etc. These would lead to efficient plant operations, reduced cost of operations and improved operational safety and hence better returns to the dairy farmers.

Over the last few years, NDDDB has taken up various initiatives to enhance usage of solar energy across the dairy value chain in partnership with Ministry of New and Renewable Energy and other stakeholders from Industry and academia. Extensive use of solar energy in dairy value chain would not only reduce operational cost significantly but also ensure use of clean energy. NDDDB has initiated the implementation of Concentrated Solar Thermal (CST) technology in 15 dairy processing plants which are meeting up to 15% of the annual thermal demand in these dairies.

At the village dairy cooperative level, our experiment with solar PV systems with GRID connectivity and storage facility to address exigencies like long power outages has resulted in significant savings. To propagate such usages, installation of 125 systems across the country has been facilitated under NDP-I as a pilot which need to be further scaled up. The other avenues for clean energy being explored include setting up solar PV systems with GRID connectivity and storage facility at village dairy cooperative societies, solarising village bulk chilling operations etc. Some of the initiatives have taken a concrete shape and are ready for scaling up while some others are at various stages of experimentation. All these initiatives in using solar energy in dairying would lead to reduction in energy costs, thereby directly benefiting farmers.

Taking Digital Technology to Farmers

The reach of digital technology has immensely increased in the last decade; even in the rural hinterland. The power of digital technology can be harnessed for enabling innovations, scientific systems and systematic processes. The Information Network on Animal Productivity and Health (INAPH) system developed by NDDDB has been an important step towards creation of a national animal database. With registration of more than 17.5 million milch animals for providing animal breeding, nutrition and health services to 10.2 million

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milk producers, this database has created huge opportunities to analyse the impact of animal breeding, nutrition and health interventions to improve on the schemes and quality of service delivery.

Fairness and transparency in the transactions of the producer organisations with the milk producers builds mutual trust and reduces the element of subjectivity in validating the quality and quantity of milk poured by the members thus ensuring better returns to farmers. Integrated Automatic Milk Collection System (AMCS) developed by NDDDB is one major step in this direction which ensures fair and transparent operations with the dairy farmers by automation of entire village level milk collection process including its integration for financial inclusion with the provision for payment of milk bills directly to the farmers' bank accounts.

Quality of Food and Feed

Considering the increased awareness of consumers about the quality of milk in an increasingly competitive dairy market, focus is required to ensure quality of milk and milk products from farm to the retail point.

As a part of the continuous efforts of NDDDB to improve food safety and quality aspects of milk and milk products and to enhance consumer confidence in dairy cooperatives, NDDDB has recently launched 'Quality Mark' for Producer Owned Institutions. This provides dairy cooperatives and producer institutions the much-needed brand identity and a competitive edge.

Apart from its economic significance for the dairy farmers, quality of cattle feed is an important aspect for food safety as contaminants like heavy metals and toxins can be transferred from feed to milk causing health hazards to human population. Currently, there are no specific regulations for monitoring the quality of cattle feed and mineral mixtures produced in the country. Keeping this in mind, NDDDB has launched a 'Quality Mark' for cattle feed and mineral mixtures manufactured in the cooperative and government/semi-government sectors to be adopted on voluntary basis.

It is needless to mention that with robust quality systems across the dairy value chain- from village to the urban retail outlets, the quality products will fetch better prices with direct benefits accruing to the milk producers.

Human Resource

Success of any business organisation depends on

committed, competent and trained human resources in professional, managerial and technical cadres who can drive the organisation towards efficiency and success.

It is very relevant to quote Dr Kurien here.

"Innovation cannot be mandated or forced on people; it is everywhere, a function of the quality of the people and the environment. We need to have enough skilled people working in a self-actuating environment to produce innovation."

Presently, there has been dearth of qualified and trained professional manpower in dairy sector, especially in the dairy cooperatives, as most of officers associated during OF period have either retired or are on the verge of superannuation. Organisation have realised the importance of devising detailed HR strategies and putting in place qualified professionals to implement their business plans to ensure better returns for their producer members.

Many of the dairy cooperatives do not have the resources to hire competent professionals. In such a scenario, it is more prudent to make investments for extensive training of existing manpower to upgrade their skills. To make rural professionals available to the development sector, this year, NDDDB has sponsored the working professionals to participate in a special 15-month course-PGDMX (R)-Executive Post Graduate Diploma in Rural Management in IRMA to enhance their management skills.

Increase in Market Access by Organised Sector

It is estimated that out of 6.6 Lakh villages in the country, about 3.1 Lakh villages are dairy potential villages with estimated milk production of more than 200 Kg per day. With the Producer Owned Institutions, including dairy cooperatives, covering about 2.02 Lakh villages, there is huge scope for further expanding the coverage of dairy cooperatives or any other alternate form of producer organisations like Producer Companies to another 1 Lakh dairy potential villages.

It is encouraging that in the recent past milk producers from some of the relatively less dairy developed regions like Vidarbha-Marathwada, Jharkhand, Assam and North West Bihar have been provided market access to organised milk processing sector. With implementation of new programmes, which are on the anvil, large number of milk producers who have so far been left out from the organised milk processing sector would start getting benefits of market access which would enhance their income and strengthen their livelihood.



Diversification of Activities

Various innovations to bring about efficiency in the dairy value chain would definitely contribute to enhancing farmers' income. However, we must also appreciate that for small and marginal farmers, a single source of income from dairying alone may not be adequate to meet their livelihood requirements. We also need to explore alternative income streams through allied activities so that their cumulative income increases.

The interventions undertaken by Sundarban Cooperative Milk & Livestock Producers' Union Ltd. in the delta region of West Bengal are worth mentioning. This Milk Union with more than 3,000 women members has diversified its operations and is also procuring and marketing other commodities like backyard poultry eggs, mangrove honey, indigenous varieties of rice, moong dal, etc. They are also adopting organic farming practices, which not only provides them access to niche market with higher realisation, but also promotes sustainable agricultural practices.

Scientific bee-keeping has been found to be a very promising activity to provide additional income to the dairy farmers by collection and sale of honey and other hive products like Pollen, Beeswax, Propolis, Royal Jelly and Venom. In collaboration with National Bee Board (NBB), NDDDB has taken up training/extension activities for promotion of scientific beekeeping and establishing a value chain for market access. In the recent months, several dairy cooperatives have started marketing honey with their brand, thereby ensuring better returns to the farmers. NDDDB has now been designated as one of the implementing agencies in National Beekeeping and Honey Mission and consequently we can expect that many more dairy cooperatives would take up bee keeping and honey procurement and marketing thereby increasing the income of the farmers.

Putting up flexi bio-gas plant at farmer's field is another lucrative option for dairy farmers. Multiple benefits would accrue to the farmers like saving in expenditure towards cooking fuel and using slurry as a bio-fertilizer. This also forms an integral part of the Swatchh Bharat Abhiyan by way of efficient management of manure. NDDDB has now been designated as National Level Implementing Agency for two schemes of MNRE namely, New National Biogas and Organic Manure Program (NNBOMP) and Biogas based power and thermal

application program.

Solar Energy can also be harnessed and harvested as a remunerative crop by farmers. NDDDB has helped organising a 'Solar Pump Irrigators' Cooperative Enterprises (SPICE) in Mujkuva village near Anand. The farmers have foregone subsidised energy connections and have opted for grid connected solar pumps. This cooperative was inaugurated on 30 September 2018 by the Hon'ble Prime Minister of India. Energy buyback option at an attractive Feed-in-Tariff has been an effective tool to rationalise water and energy use by farmers and also providing additional income from the sale of solar energy. NDDDB is also in dialogue with MNRE for scaling up this initiative through cooperatives under the (Kisan Urja Suraksha evam Utthan Mahabhiyan) KUSUM scheme of Government of India, which is on the anvil.

Concluding Remarks

The 47th Dairy Industry Conference is an occasion for the dairy fraternity to rededicate itself to constantly build on our strengths, innovate and introduce new technologies to bring in efficiencies in the dairy value chain to address the emerging challenges in the sector so that our smallholder dairy system continues to be relevant and vibrant in the years to come.

I wish to conclude by quoting Dr. Kurien, which is very relevant even today:

“Right now, we only have a dream. That dream will remain a dream unless we can work together. Those of us who want to see our nation become a major player in the international dairy market must agree to common objectives; we must work together to build upon our mutual strengths and overcome our weaknesses; we must share a strategy and a plan; we must allocate responsibility and, once we have accepted responsibility we must all meet our commitments, whatever be the costs: we must share risks as well as rewards; and we must be willing to finance the investments necessary to build international markets. There is no other way.”

I am sure, this Conference would deliberate on this extremely relevant theme and come up with recommendations related to strategies, policies and programmes for improving the lives of millions of dairy farmers in the country.

I wish the Conference every success.

Thank you!

Address

By

Shri Sushil Kumar Modi
Hon'ble Dy. Chief Minister of Bihar

Respected Chief Minister Shri Nitish Kumar Ji; Hon'ble State Minister of Animal Husbandry and Fisheries Shri Pashupati Kumar Paras Ji; Ms. Caroline Emond, Director General of International Dairy Federation; President, Indian Dairy Association, Dr. G.S. Rajorhia; Chairman, National Dairy Development Board Shri Dilip Rath; Director, National Dairy Research Institute, Dr. R.R.B. Singh, COMFED's MD, Mrs. Shikha Srivastava; IDA Eastern Zone Chairman, Dr. Raghu Chattopadhyay; Shri Sudhir Kumar Singh Secretary General of this Conference and the participants who have come from all over the country to this Indian Dairy Association's 47th Annual Dairy Industry Conference; friends; sisters and brothers:

First of all, I would like to thank the Indian Dairy Association and entire team of COMFED for organizing this Dairy Industry Conference in Bihar for the first time and I extend a warm welcome to all participants who have come here from all over the world.

Friends, we all know that the maximum income that is generated in agri sector is from dairy farming. The income generated from dairy sector could be many times more compared to the income generated from production of rice, wheat, barley, sugarcane, etc. Today, COMFED's Sudha brand is not only known in Bihar but also famous in different states of the country. To this date, 21 plants of Sudha Dairy are functioning in Bihar and Jharkhand, the processing capacity of which is around 32 lakh litre per day.

I would like to mention that when Shri Nitesh Kumar took over as Chief Minister of Bihar in 2005, the processing capacity of the state was around 12 to 13 lakh litre per day. In the past 13 years, we have increased our processing capacity to around three times. I would like to thank our Chief Minister by saying that Biharsharif now has a processing unit of 4 lakh litre capacity which is installed recently. There was a time



when surplus milk from Bihar used to be sent to Bareilly in Uttar Pradesh where it was processed into milk powder. Today, we have many powder processing plants in Bihar.

Friends, Central Government is helping COMFED in every possible way. COMFED had taken a loan of 704 crore from NCDC and the Central Government has decided to take the burden of the interest amount.

We all know that cattle feed and health of the animals are very important. Before 2005, people in Bihar were not aware that even animals need vaccination, de-worming, etc. People used to think that only human beings were vaccinated. But today, Shri Pashupati Kumar Paras Ji is seated amongst us, who will agree that every year more than 2.5 crore animals are vaccinated with different vaccines and de-worming work is being done. In the same way, cattle feed factories are being set up in Bihar in large numbers.

Many of you are aware that Sudha milk is not only in Bihar but its marketing is done in Jharkhand, West Bengal, UP, Assam, Manipur, Meghalaya, Tripura, Mizoram, Nagaland and Arunachal Pradesh. While I was coming over here, Shri Dilip Rath said that Bihar is the leader within eastern India. This means amongst Bengal, Odisha, Assam, Northeast and these states, Bihar is number one in milk production. So, I said to Rath sahib that our Chief Minister's wish is that not only in eastern India but we need to be in the top three milk producing states within India. The products of Sudha are so much liked today that people order Sudha products for occasions like weddings instead of ordering from others. And currently around 1.8 lakh litre per day of milk is utilized to make Sudha milk products.

I would like to congratulate and thank all the leaders of milk industries in helping to make Bihar famous in the country. According to 2016-17 statistics, every milk industry of Bihar including COMFED, had a business of 3255 crore. Of this, COMFED's share alone was of ₹ 908 crore. So, because of this during the year 2016-17, milk unions and COMFED combined earned a profit of more than ₹ 68 crore.

Today I saw many female entrepreneurs receiving the Best Dairy Woman Awards of IDA and the way female entrepreneurs are coming up in Bihar and with females getting involved in dairy sector, I hope in the next few years, more females will be awarded in this field. Friends, I would also like to thank the Government of India that they are providing loan to farmers @ 4% through crop loan and Kisan Credit Card (KCC). We had demanded a similar loan for our dairy and fishery farmers. I am happy to announce that the Government of India have announced in this budget that animal husbandry and fishery will be given loan through KCC and instead of current interest of 11 to 12%, if the farmer repays loan on time, then even the farmers of dairy and fishery sector would be able to avail loan @ 4% interest.

The Government of India has started the Rashtriya Kamdhenu Aayog which will work on genetic upgradation. And we are having this discussion that to increase milk production we need to use modern techniques. In this regard, I would like to inform the gathering that in Purnia district of Bihar, a semen station is under construction which will cost ₹ 64 crore. And these semen stations will have the technology to restrict the birth of male calf.

This will increase the production of female calf. This experiment is being attempted in Maranga semen station. Similarly, in Motihari district, a centre is being established at the cost of ₹ 33 crore to construct in-vitro fertilization center just like we have test tube baby. Also, recently in Bihar, work is in progress on setting up a Embryo transfer technology centre at the cost of ₹ 20 crore.

Those who have come here and connected with dairy industry, I would like to tell you that by using modern techniques, we would increase milk production and productivity of the State and also to rear healthy local milch animals in order to increase higher milk production. However, technology should be affordable to the farmers. We must utilize newest technology available in the world to increase milk production and as a result, it will increase the farmer's income by manifold.

Friends, I have full faith that the way Sudha made Bihar's name in the country after today's conference, in the coming years many more new concepts will take Bihar milk production up. With these words once again I welcome all of you.

Jai hind!



Address

By

Chief Guest Shri Nitish Kumar
Hon'ble Chief Minister of Bihar



Respected Deputy Chief Minister Shri Sushil Kumar Modi; Minister of State for Animal Husbandry and Fisheries Shri Pashupati Kumar Paras; Madam Caroline Emond, Director General, International Dairy Federation; Chairman, National Dairy Development Board Shri Dilip Rath; Director, National Dairy Research Institute, Dr. R.R.B. Singh; President, Indian Dairy Association (IDA), Dr. G.S. Rajorhia; Chairman, IDA (Eastern Zone), Dr. Raghu Chattopadhyay; Vice Chancellor, Bihar Animal Sciences University Dr. Rameshwar Singh; COMFED's Managing Director Smt. Shikha Srivastava; Managing Director, Vaishal Patliputra Dugdh Utpadak Sahkari Sangh Ltd. and Secretary General 47th Dairy Industry Conference, Shri Sudhir Kumar Singh; OSD to Chief Minister, Shri Gopal Singh; District Magistrate, Patna Kumar Ravi and the delegates from all over the world related to dairy industry; businessmen, scientists, researchers, milk producers and all the awardees of today's program; expert guests; representatives of electronic media present here today; sisters and brothers.

First of all, I would like to congratulate and thank the Indian Dairy Association (IDA) that they have organized 47th Dairy Industry Conference in Patna. Prior to this Conference, President-IDA, Dr. Rajorhia had met and apprised me about the various dairy development endeavours of Bihar, which is flourishing very fast. So, this is a good news for all of us. When he

visited Patna, I told him that we have Samrat Ashoka International Convention Centre here which on one side has Gyan Bhawan and other side Bapu Sabhagar having capacity to accommodate 5000 people. Now, people are coming here from all over the country and they feel happy and amazed at the same time seeing Bapu Sabhagar, that we have such a big auditorium in Patna.

If you see the whole complex, there is a "Sabhyata Dwar" on the backside of Samrat Ashoka International Convention Centre which has been constructed beautifully and has Samrat Ashoka's statue

at its entrance. You must notice that the statue is a symbol of his change over from Chanda Ashoka into Dhamma Ashoka. So, that is how the whole centre was constructed and besides Bapu Sabhagar, you have selected Gyan Bhawan's ground floor for your exhibition which is a good thing and now there are several programs being organized here, now-a-days.

We would like to inform you that this Bapu Sabhagar is a whole steel structure where people from all over India are present at the moment.

We would like to inform the gathering that the steel used in this convention centre is twice the amount of steel used in construction of the Eiffel Tower. So, these are all iconic buildings. As, you people have come from all over the country, I would request you all to visit Bihar's International Museum. It is in fact the first of its kind in the country and people from all over the



world visit this museum and acknowledge this fact. Work is in progress in all the sectors in Bihar. It is in fact very heartening that this 47th DIC is going on and Bihar has made tremendous progress in the dairy and the whole agriculture sector. In Bihar, the urban population is very less and rural population is more as about 89% of the population of Bihar resides in villages out of which 76% people are dependent on agriculture and allied sectors. That means their livelihood depends on agriculture only and dairy farming is included in that. We have also seen that approximately one-third of the agricultural sector revenue is contributed by the dairy sector and it plays a vital role in it and, therefore, we want it to progress further. We also prepared an agricultural roadmap in 2008 and implemented that continuously for 4 years which lead to increased growth in agriculture. We worked in every sector and when we made another Agriculture roadmap in 2012, we included everything in it like agriculture, allied sector, irrigation; works related to the land, electricity related works and transportation works so that is to connect villages with roads to commute easily in order to get the right price of agricultural produce. Moreover, we have now gone one step further in constructing lanes, proper sewage system in villages and providing water in all the houses and electricity connection in all villages and cities. So, this way we showed progress in our agriculture roadmap that we decided to continue it from 2017 till 2022 which was launched by President Ram Nath Kovind here in Bapu Sabhagar, who was also the former Governor of Bihar in 2017. Bihar has also planned to increase dairy production.

Milk production is also the biggest instrument to increase income of the people who are involved in farming like animal husbandry, fishery, and other things for everyone who are into this sector. These days as you know there is so much of pollution, the climate is changing and rainfall is decreasing in Bihar. For example, in our college days, we used to study Bihar's rainfall which was around 1200 - 1500 millimeter and during the last 13 years, I am working for Bihar and have seen only one year the rainfall reached 1000 millimeter and if we see the average it is just a little more than 800 millimeter. However, the people are not to be blamed for this emerging situation of climate change, people to be blamed for this are somewhere else around the world but the effect is on the whole earth, and which part of the earth will get

affected no one has any idea. But it is our duty to save our environment which is totally a different topic. But taking this in view we are also concentrating on crop cycling and working on it to inform and guide people about it. But that is only possible until and unless income increases by progression in husbandry sector so, we are motivating people to do cattle rearing in Bihar. We have already done this under the plan Patna Dairy Project which is running quite successfully.

To boost the efforts, our people contacted Kurien Sahib, who we all know is the Father of White Revolution in our country. Being a former Central Minister, I have met him many times when he was alive but even before that he had played a big role in Bihar. For example, he was Chairman of National Dairy Development Board, now there is another appointed Chairman sitting here, but he was Secretary to Patna's Dairy Development Project during 1981 to 1986 and enhanced it through Cooperative sector and when this Bihar State Milk Cooperative Federation was made which is popularly known as COMPFED. Its actual name is Bihar State Milk Cooperative Federation but COMPFED suits the ear, which from the beginning is being promoted in this way and the products are famous by the name Sudha. So, work done in the dairy sector has churned out to be a huge benefit. But when we took over the command in 2005, the production was 4 lakh liters per day and the latest that I have been informed today, that it has reached to approximately 20.46 lakh liters per day in 2018 due to the efforts of COMPFED. This is not an ordinary thing. It has increased five times in 13 years and besides 14 lakh liquid milk, they are producing milk powder, milk sweets and many other products which is very good because this wasn't there in Bihar before. Milk was sent out to Uttar Pradesh for the production of milk powder. For that reason, we requested the Central Government to establish dairy plants in Bihar to produce milk powder. Now they don't have any problem. So, people are getting into cooperatives.

Secondly, we emphasized that you should include women in the cooperative societies. And I am happy to say that now there are at least 2.5 lakh female members and 22700 government milk collection centers in which 12 lakh people are involved with milk production. I am very pleased with that and also by their efforts.

inaugural session

Even our MD is a woman; my aim is to involve as many women as possible with this. Now the number has gone to 2.5 lakh. Besides, that the work was also done through conferences. Work is also being done through other sources. We are ready to provide any assistance for that. One thing that I had said to Rajorhia Sahib when I met him the last time and even today that we should do one simple work to help our milk producers through Indian Dairy Association and other agencies like National Dairy Development Board or National Dairy Research Institute of Karnal. I had visited Karnal when I was the Agriculture Minister, I used to order milk products from Karnal and serve to the visitors at the Krishi Bhavan and later on I made it available to Rail Bhavan. So, I would request just one thing of Indian Dairy Association, National Dairy Research Institute and National Dairy Development Board that whatever work is being done in the dairy sector, is very good. You are taking it forward strongly. What is the aim of today's conference? It is to find ways to increase people's income. And we should discuss this topic thoroughly and earnestly.

I have only one suggestion and that is, milk is important and so are the milk products. Along with that, the discussion that we had about the environment, we should always keep in mind that we should encourage organic farming. When we encourage organic farming you need bio fertilizer, vermin-compost, bio pesticides. Where would you get all those from? That is mostly available from cow dung and cow urine. So, if you combine dairy with agriculture, every farmer's income will double as compared to what he earns from dairy if he works on vermin-compost and bio pesticides. So, we have started encouraging this practice a lot in our area. The name of the university that we have constructed is called Animal Science University. It is not only animal husbandry, it is animal science. We have done this with that thought in mind and our Vice Chancellor is also working hard and I thank him for that. And I do that again and again because I came to know that he is working very seriously on this.

As you know, in our country we have Krishi Vigyan Kendra of ICAR, then why can't we start a Pashu Vigyan Kendra? So, for that we asked them to do one thing and not to worry about it. We do not require money from the center for this. You start a Pashu

Vigyan Kendra and the Central Government will assist in every way. So, people will learn about animal husbandry and everything connected to that as to how beneficial it is to work with vermin-compost and bio pesticides. So, people's income will increase. That is why I request you to discuss on how to increase the income of people involved with the dairy sector in your conference. I can see your purpose here, innovative approach for enhancing dairy farmer's income. Certainly, it should be an innovative approach. This is also an innovative approach that you can utilize cow dung, cow urine along with milk. If you would discuss about this in your conference because only you can motivate people the most and spread the word. If people will start this work then it will increase the income from this sector. It will easily increase the income three or four times more.

And secondly the environment issue is catching day after day. Organic farming should be encouraged to support environment and to increase production. In some villages in Bihar the farmers were able to do that with potato and cauliflower. This was started in Nalanda district of Bihar. We had advertised it a lot and gave certificates for it. Now we have started encouraging people in the vegetable sector and have also started helping them. Whoever would do organic farming in the vegetable sector, we will give them a subsidy of Rs. 6,000 on 30 decimal of land. Now we are going to increase that to Rs. 8,000. We could see that the production of potato has increased. The size of the potatoes was also big. I had called the then Agriculture Minister and asked him to touch the potato. I handed him the potato, clicked a photo and released the picture saying, this is a potato from organic farming. People were shocked after seeing it that it could be so good. As for the cauliflower, they were also big, tight and white in colour with no yellowish tinge. Everything was so good and you can never tell where and when the news would spread around the world. A noble laureate economist from America Dr. Joseph Stiglitz came to a village in Nalanda where he saw that organic farming was being done and people were interacting with the farmers. He is a famous economist and had come with his wife. He came and saw that. But what he also saw was, one side was very nice with organic farming and on the other side inorganic farming was being done. So, he asked why isn't the neighboring farmer applying your method since you are doing so



good? The farmer replied, this is not anyone else's farm. It is my farm. I want to satisfy myself as to which is better, organic farming or whatever practice we have been following till date. So, I am satisfied. He was so impressed with this that he gave a statement that Bihar's farmers are more intelligent than agriculture scientists. That was his statement and everyone knows what kind of a person Dr. Joseph Stiglitz is. He is renowned for his statements and this is what he said. When he said that he would like to sit with the Cabinet of that time, we did not serve him any outside dish but only Bihari food available in Patna. He was very pleased and we interacted a lot with him.

We had advertised about the organic farming that some farmers were doing and the news reached there. He came here and he saw it himself that something as simple as organic farming is so nice and it is growing. If organic farming grows then the need for bio fertilizer, vermin-compost, bio pesticides demand will increase and it will be produced mostly from cow dung and cow urine. That is why, if we link these practices with dairy then I think that your aim of this conference will be fulfilled.

Mr. President, you have said that in the Eastern Zone of India, Bihar is at the top in dairy sector. So, I would request you to shift the headquarter of Eastern Zone of Indian Dairy Association to Bihar. I will provide

whatever assistance is required from the Bihar government to Indian Dairy Association (Eastern Zone). Once you open an Eastern Zone headquarter, then you will be traveling to and fro, activities will increase and it will also help motivate and encourage people for dairy development. Once you shift the headquarter of Indian Dairy Association (Eastern Zone) to Bihar our dairy sector will grow with leaps and bound. So I am requesting you all for this.

We are very happy that you have arranged this Conference here. At least this will bring a feeling of self confidence in our people. This is not a small thing. People will be attracted to this sector which is a good thing and if Eastern Zone headquarter is located here then these types of activities will keep happening and it will be broadcasted more. Bihar dairying started its journey with the help of Kurien Saheb and I would want that with the help of Indian Dairy Association, Bihar dairy sector grows much faster to greater heights. And the fact that Bihar is ahead in milk production in the eastern zone today, I believe it would be in the top three dairy states instead of fourth, fifth or sixth. This is our dream and with this, I welcome you all to Patna and wish all the best for the success of this Conference.

Thank you very much.

Jai Hind.



Vote of Thanks

By

Shri Sudhir Kumar Singh
Secretary General, 47th DIC

Hon'ble Chief Minister of Bihar, Shri Nitish Kumar Ji; Dy. Chief Minister Shri Sushil Kumar Modi Ji; Minister of State for Animal Husbandry & Fisheries Shri Pashupati Kumar Paras Ji; President-IDA, Dr. G.S. Rajorhia; Chairman NDDDB, Shri Dilip Rath; Director General, International Dairy Federation Ms. Caroline Emond; Managing Director COMFED, Mrs. Shikha Srivastava; Director NDRI, Dr. R.R.B. Singh; Chairman IDA (EZ) Dr. Raghu Chattopadhyay; delegates from India and abroad; all the participants and the press & media.

It is a day of pride and honor for all of us that IDA (East Zone) and Bihar State Chapter under the umbrella of Indian Dairy Association is organizing its 47th Dairy Industry Conference in the land of enlightenment, Bihar.

The theme of the conference "Innovative Approach for Enhancing Dairy Farmers' Income" is of immense relevance. The Indian Dairy sector has grown significantly in the last four decades, with milk production increasing from 22 million tones in 1970 to 176.35 million tones in 2017-18 with a growth rate of 6.62%. The per capita availability of milk in India during 2017-18 is 375gms/day against, the world average of 294.2 grams/day during 2017.

Dairying is an important source of livelihood for millions of rural families and thus has assumed the most important role in providing employment and income generating opportunities, particularly to women and marginal farmers. It is an important source of livelihood and nutrition for millions of families for both rural and urban mass.

On this occasion I extend my warm gratitude and thanks to Hon'ble Chief Minister of Bihar, Shri Nitish Kumar, who spared his valuable time for inaugurating this conference.

I also thank Hon'ble Dy. Chief Minister Shri Sushil Kumar Modi, and Hon'ble Minister of State Animal Husbandry & Fish Resources Shri Pashupati Kumar Paras for their grace and guidance.



I am also grateful to President IDA, Dr. G.S. Rajorhia, for his continual support and directions, he has been a *Guru* as he had taught me during my graduation days at NDRI, Karnal.

I also thank Chairman NDDDB, Shri Dilip Rath, for his unremitting supports. I also thank Director General, International Dairy Federation, Ms Caroline Emond for gracing this occasion. I am also thankful to Managing Director COMFED, Madam Shikha Srivastava, for her supports and encouragement. I am thankful to Director NDRI, Dr. RRB Singh for his valuable support for formulating technical programme of this conference. I am also thankful to Chairman IDA (EZ), Dr. Raghu Chattopadhyay for his efforts in organization of this conference.

I am also thankful to Department of Animal Husbandry for their continuous support in organizing this conference.

I am indebted to all the milk producers who have come here from different parts of India. I am also thankful to all the sponsors, exhibitors, advertisers for showing interest in this conference. I also thank all the delegates who have come here from almost all the corners of India and abroad.

I must thank to press and media for their coverage. At the end I thank the almighty for his blessings.