Best Practices in Cooperative Dairy Sector

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Genesis of Dairy Cooperative Movement in India

“Milk is the only commodity which has to be collected twice a day, every day of the year. Thus, cooperatives are the only logical system for the dairy industry.”

Dr. Verghese Kurien: Father of White Revolution and Milkman of India.

(26 Nov. 1921 – 09 Sep. 2012)
Genesis of Dairy Cooperative Movement in India

1946: Formation of Kaira District Cooperative Milk Producers’ Union Ltd. (Amul) in Anand, Gujarat.

1964: Prime Minister Shri. Lal Bahadur Shastri’s visit to Anand


1998 onwards: India remains the largest milk producer in world
The Anand Pattern Dairy Cooperative Structure

- 350 LLPD liquid milk marketing
- 475 LkgPD milk procurement
- 18 State Dairy Federations
- 218 Milk Unions
- 1.86 lakh Dairy Cooperatives
- 165 lakh Producer members
## Operation Flood

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<thead>
<tr>
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<tbody>
<tr>
<td>Period</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farmer Members (lakhs)</td>
<td>17.5</td>
<td>36.3</td>
<td>93.1</td>
</tr>
<tr>
<td>Village Cooperative Societies</td>
<td>13,270</td>
<td>34,523</td>
<td>72,744</td>
</tr>
<tr>
<td>No of Coop. Milk Unions</td>
<td>39</td>
<td>136</td>
<td>170</td>
</tr>
<tr>
<td>Milk procurement (LKgPD)</td>
<td>25.6</td>
<td>57.8</td>
<td>109.4</td>
</tr>
<tr>
<td>Liquid milk sale (LLPD)</td>
<td>27.8</td>
<td>50.1</td>
<td>99.4</td>
</tr>
<tr>
<td>Processing capacity (LLPD)</td>
<td>35.8</td>
<td>87.8</td>
<td>192.0</td>
</tr>
<tr>
<td>Drying capacity (TPD)</td>
<td>261</td>
<td>508</td>
<td>990</td>
</tr>
<tr>
<td>Per capita milk availability (g/day)</td>
<td>112</td>
<td>175</td>
<td>202</td>
</tr>
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</table>
Operation Flood

- The total project outlay was about Rs.1800 Cr. as Commodity aid and Loans from the World Bank
- OF-I was funded by the sale of 1.26 Lakh MT SMP and 42000 MT of butter oil gifted by EEC through world food programme (WFP). Total investment was 116.54 Cr
- OF-II used total of Rs. 273 Cr funds of which, 200 Cr was World Bank loan & rest EEC commodity assistance.
- OF-III with an investment of Rs. 1200 Cr from World Bank & NDDB
- A world bank report on impact of OF: “The estimated economic benefit from the Rs.200 Cr investment that world bank made in OF was a massive Rs.24000 Cr each year over a period of 10 years” - an unmatched input-output ratio either before or ever since.
Indian Dairy Scenario

- Typically small-holder dairying - 80% of dairy farmers own 1-3 animals
- Livestock contributes about 26% of agriculture GDP
- Milk accounts for about 66% of total value of output from livestock
- Output value of milk is just next to food grains
Best Practices in Cooperative Milk Procurement

Milk testing: Fat, SNF, Detection of adulteration

Instant chilling

Maintaining cold chain
Best Practices in Cooperative Milk Procurement

Increasing women participation
Best Practices in Cooperative Milk Procurement

- Transparent & consistent pricing
- Spot / regular payment : M2M milk to money programme - serves around 4 lakh dairy farmers in 16 states through 2800 micro ATMs
- Direct Beneficiary Transfer
- Automatic milk collection system
Best Practices in Support Services

**Member education**: Training, Cross functional learning programme, Exposure visits
Dairy Input Services

Door step AI services, Infertility camps
Best Practices in Input Services

- Veterinary healthcare services
- Promotion of ethno-veterinary practices

Antibiotic residue testing in milk
Best Practices in Input Services

Clean milk production
Best Practices in Support Services

- Cattle feed
- Area specific mineral mixture
- Dewormer
- Urea molasses mineral block-UMMB
- Bypass supplements
Best Practices in Support Services

National fodder seed grid, Certified seed production of high yielding fodder varieties, popularization of new potential fodder crops, green fodder conservation, dry fodder enrichment, densification, Total Milch Ration (TMR)
Best Practices in Support Services

- NDDB Dairy Excellence Award, Dairy Innovation Award
- Solar PV systems
- Manure management
Best Practices in Support Services

Information Network on Animal Productivity and Health - INAPH

(INAPH) Information Network For Animal Productivity And Health

Animal Identification
- Animal Registration
- Dairy Registration
- Animal Movement (Gain, Cult, Death)
- Ear Tag Change
- Animal Re-Registration
- Animal Management Query
- AH Reports

Breeding
- Artificial Insemination (AI)
- Pregnancy Diagnosis (PD)
- Calving
- Forced Pregnancy Termination
- Operational Reports
- Performance Review Report

Health
- Individual Services
  - Vaccination
  - De-worming
  - Fertility Issues
  - Disease Testing
  - Animal Treatment
  - Followup Treatment
- Group Services
  - Mass Vaccination
  - Treatment Camp
  - Mass De-worming
  - Village Infertility Camps
  - Group Disease Testing
  - First Information Report
  - Deworm Outbreak
  - Followup Outbreaks

Nutrition
- Ration Balancing
  - District Feed Library
  - Individual Animal
  - Herd
  - RB - CRP
  - Nutrition Masters View
  - Feed Sample Collection
  - New/Ed Sample Reports

Progeny Testing (Milk Recording)
- Morning Milk Recording/ Dry Off
- Noon/Evening Milk Recording
- Mass Dry Off
- Growth Monitoring
- Elite Animal Declaration
- Parentage Verification
- Male Calf Procurement
- Typing
- Review Reports
- Operational Reports

Miscellaneous Reports
- Miscellaneous Reports
- Miscellaneous Services

Target Reports
- Target Reports
Best Practices in Support Services

CF advisory services – Least Cost Formulation : http://cfp.nddb.coop

Introduction

Compound cattle feed, being an important source of nutrients in the ration, plays an important role in determining the overall economics of dairy production systems. Usually, all information pertaining to cattle feed plant is not available from a single source. In view of this, NDDB has developed a cattle feed plant knowledge portal for the feed manufacturers to get thorough information on the specification of various type of feeds, raw material specifications and access to least cost feed (LCF) formulation software to derive LCF formulation. To maintain confidentiality, each of the user plants will be provided a separate user ID and password.
Best Practices in Support Services

- Internet Based Dairy Information System : I-DIS

- Dairy Geographical Information System : DGIS
# Infrastructure Creation in Cooperative Dairy Sector

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<tr>
<th>Projects</th>
<th>No.</th>
<th>Capacity</th>
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<tbody>
<tr>
<td>Dairy plants</td>
<td>202</td>
<td>360 LLPD</td>
</tr>
<tr>
<td>Chilling centers</td>
<td>220</td>
<td>51 LLPD</td>
</tr>
<tr>
<td>Powder plants</td>
<td>69</td>
<td>1190 MTPD</td>
</tr>
<tr>
<td>Cattle Feed Plants</td>
<td>71</td>
<td>8855 MTPD</td>
</tr>
<tr>
<td>Bypass protein feed plants</td>
<td>19</td>
<td>1000 TPD</td>
</tr>
<tr>
<td>Mineral Mix. Plants</td>
<td>35</td>
<td>420 TPD</td>
</tr>
<tr>
<td>Semen stations</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Bull Mother Farms</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Bio Safety Labs/Vaccine units</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Concentrated Solar Thermal System</td>
<td>15</td>
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Best Practices in Milk Processing

Creation of state of art processing plants with high energy & water use efficiency, low carbon footprint, high output ratio & modern effluent treatment mechanisms
Market Linkages

Cold chain maintenance
Best Practices in Marketing

- National Milk Grid: 165 lakh producer members, 1.86 lakh DCS, 218 Milk Unions, 17 Milk Producer Companies, 18 Milk Federations, 31 Metro Dairies

- Promotion of food safety management systems (FSMS) in cooperative dairies: Milk Quality mark – 33 dairies awarded, 20 in progress

- Milk Fortification with vitamin A & D – 25 dairies in 20 states, 25 in pipeline

- Cattle feed quality mark – 11 plants, 15 underway
National Dairy Plan (2008-2022)

**NDP I (2012-19)**

- Produce an average incremental 6 million tons per annum of milk over the next decade

- Focus on productivity measures to enhance milk production, at the pace needed
- Ensure demand is met by domestic production, not imports

- Increase share of organised sector in surplus rural milk from 30% to 65% by 2021-22
- Augment supply of good quality milk & milk products to consumers

Strengthen & expand infrastructure (capacities) to procure, process & market milk, through existing/ new institutional structures
NDP I Project Area

Focus on 18 major milk producing States which account for

- More than 90% of the country’s milk production,
- Over 87% of the breedable cattle and buffalo population

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<tr>
<th>Total Outlay (₹ Crore)</th>
<th>2242</th>
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<tr>
<td>World Bank (IDA credit)</td>
<td>1584</td>
</tr>
<tr>
<td>GOI</td>
<td>176</td>
</tr>
<tr>
<td>EIAs</td>
<td>282</td>
</tr>
<tr>
<td>NDDB*</td>
<td>200</td>
</tr>
</tbody>
</table>

530 projects from 18 states availed grant of Rs. 1751 Cr. as of March 2018
Production of HGM cattle and buffalo bulls
• Production of 2,500 HGM bulls – 1500 made available
• Import of 400 exotic bulls/ equivalent embryos - 480 imported embryos, 151 calves

Strengthening of “A” and “B” graded Semen Stations
• Production of 100 million semen doses annually in the terminal year - 80 million

Pilot Model for Viable Doorstep AI delivery Services
• 3000 MAITs carrying out annual 4 million doorstep AIs by the terminal year - 1400 MAITs & 6.5 lakh AI in 2017-18

Ration Balancing Programme
• Coverage of 2.7 million milch animals in 40,000 villages - 2.6 million animals covered from 32000 villages

Fodder Development Programme
• Production of 7,500 tonnes of certified/ truthfully labeled fodder seed – 10762 tonnes
• 1350 silage making/ fodder conservation demonstrations – 2225 silage demos, 660 mowers, 118 biomas silos established

Strengthening and Expanding Village Based Milk Procurement System
• 23,800 additional villages to be covered – 37586 villages covered
• 1.2 million additional milk producers - 1.28 million additional members covered, 43% women, 67% small holders, Awareness programmes for 1.5 lakh producers.
“Dairying is such as instrument of change: an instrument not only of technical change, but also of economic and social change. It is to such instruments that we must look to build the India of tomorrow.”
Thank you