Constraint faced by dairy farmers in different state of India: An overview

VV Gamit, MD Odedra, AR Ahlawat, VS Prajapati, HA Patel and KC Gamit

Abstract
This review focus on the various constrain faced by dairy farmers in different states of India. Majority of the authors in northern states observed that lack of green fodder, high feed cost, poor AI were major constrains. Eastern states which are mostly have adverse climatic condition authors of these region observe constrain like lack of green fodder, problems of infertility in cattle, non-availability of artificial insemination (AI) centres, high cost of medicine. North-eastern region are mostly hilly region, dairy farmers over their observed low price of milk, lack in availability of green fodder, repeat breeding and improper treatment services were major constrains. Central states which include largest state of India dairy farmers there faced problems like low price of milk, farmers do not have superior animals, low producing local cows, poor quality feed and fodders. Similarly in west states poor irrigation facilities, time veterinary services and inadequate knowledge of diseases were major constrains. High cost of dairy animals, fodder and concentrate, poor conception rate of AI and high cost of labour and veterinary service were majorly faced constrain in Southern states.

Keywords: constrain, dairy farmers, conception rate, artificial insemination

Introduction
In India, most of livestock farmers belong to small household farming community and carrying out traditional practices. This study was carried out to know the main constraints faced by the livestock farmers in adopting dairy farming technology at grass root level. Evolution of dairying in India has a fascinating contextual. Nearly about five decades ago when the white revolution began and the dairy sector in India took leap forward to put the country on top of the world in terms of milk production. Previous to that, until the year 1955 or so, the milk production was very less and the per capita milk availability was insignificant. With the beginning of the first five year plan in 1951, India started to give a new look to the cattle breeding policy. In late sixties and early seventies, several projects like key village scheme (KVS) and intensive cattle development project (ICDP) were initiated giving way to the acceptance of cross-breeding in cattle. Milk in India is mostly produced by small-scale dairy farmers located in rural areas. Milk is perhaps, the only liquid that flows upwards; its production is carried out in widely dispersed production units in rural areas but its market is largely, in urban areas \[1\]. For dairy industry to be an assured source of income for the rural livestock owners and to provide the milk demand of city customers, these two groups of stakeholders have to be brought together. The challenge of connecting rural dairy farmers with city markets is compounded by the highly perishable nature of milk. Thus, processing is an important major component in milk chain, linking the producers to the consumers. However, raw milk produced in India is marketed in the mostly in unprocessed form, nevertheless the considerable dairy processing infrastructure that has been created in the country in the cooperative sector under the Operation Flood (OF) program. The launch of Operation Flood -I, in the year 1970 revolutionized the dairy sector by establishing dairy farmer’s co-operatives in the rural parts and linking them with the urban customers through an enormous system of milk obtaining, processing and delivering of milk to lakhs of villages in rural India. The loveliness of this program was that it completed the small dairy milk producers of India’s dairying business through milk produce’s cooperative societies. Operation Flood I started in 1970 to 1981 (13,000 village dairy cooperatives covering 15,000 farmers) was followed by Operation Flood II in 1981 to 1985 (34,500 village dairy cooperatives covering 36 lakh farmers) and Operation Flood III in 1985 to 1994.
Livestock in India

More than 20.5 million people depend upon animal husbandry for their livelihood. Livestock contributed 16% to the income of small farm households as against an average of 14% for all rural households. Livestock is an important source of supplementary income for over 70 million rural households in India [8]. Livestock provides livelihood to 2/3 of rural community. It also provides employment to about 8.8 million rural households. Livestock is an important source of supplementary income for over 70 million rupees per year or even for a whole day and night. Provision of good housing facilities to the animals not only reduces the energy wastage in maintaining thermos-neutral zone but also provides clean condition, reduces the incidence of diseases, protects them from predators and provides better working condition to the livestock owners. Health care management practices such as vaccination and deworming ensure proper health of animals that promotes their productivity. Management of reproduction is an important economic component in the success of a dairy enterprise. Inadequate heat detection has been identified as a major limit to herd reproductive performance over many years [7].

Livestock sector contributes 4.11% GDP and 25.6% of total Agriculture GDP [9]. As per 20th total Livestock Census animal population is 535.78 million in the India which shows an increase of 4.6% over 19th Livestock Census. Total bovine population was 302.79 million in 2019 which shows an increase by 1.0%. The total number of cattle in the country is 192.49 million out of that exotic/crossbred and indigenous/non-descriptive cattle population in the country is 50.42 million and 142.11 million respectively. The total buffaloes in the country was 109.85 Million showing an increase of about 1.0% over previous census. Total milk production in country is 187.75 million tonnes which is increased by 6.5% over the previous year. The per capital milk availability is 394 gm/day. India’s milk production continuously increased right from 1950-51, when the total milk production was 17 million tonnes [10].

Animal husbandry in India make a significant amount of world's livestock resources. Both the national economy as well as socio-economic growth of country is backed by the livestock sector. Besides offering great potential and outstanding contribution in agricultural sector over the past years, animal husbandry is performing well in the manner of production, value addition and export. Improving the productivity of livestock is one of the key tests. The average annual milk yield of Indian cattle is 1172 kg which is only about 50 per cent of the global average. The frequent outbreaks of diseases like FMD, BQ; Influenza, etc. continue to affect animal health and lowers animal productivity [11].

Largest population of ruminants contributes to greenhouse gases emission large amount. Crossbreeding of indigenous species with exotic stocks to enhance the genetic potential of different species has been successful only to a limited extent. Limited AI services owing to a deficiency in quality germplasm, infrastructure and technical manpower coupled with poor conception rate following artificial insemination have been the major impediments. In spite of remarkable achievement is done in milk production and other aspects of dairy development, country’s share in the global trade is less than 1 per cent which is major thing that we can focus on. In order to become globally competitive and tapping the global dairy market to India’s advantage, there is a need to switch to scientific management of all dairy operations including breeding, feeding, rearing and health care of animals and clean milk production. The focus has also to be on developing a range of value-added products and improve on processing methods [12]. In order to bring out this transformation first we have to examine where we standard what are the constraints limiting dairy production operations in India. Here present review attempts to highlight various constraints faced by the dairy farmers in different regions of the country based on published reports.

<table>
<thead>
<tr>
<th>State</th>
<th>Jammu [13]</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Lack of finance for A.H. management practices, high cost of raw material for dairy animal shed and inadequate housing, lack of proper knowledge of milk production economics</td>
</tr>
<tr>
<td>Feeding</td>
<td>High cost of feed supplements or mineral mixture, high cost of dry fodder and non-availability of pastureland</td>
</tr>
<tr>
<td>Breeding</td>
<td>Repeat breeding problem in dairy animals, poor conception rate of AI, lack of availability of breeding stock</td>
</tr>
<tr>
<td>Health</td>
<td>High cost of treatment and distant location of veterinary hospital</td>
</tr>
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<table>
<thead>
<tr>
<th>State</th>
<th>Himachal Pradesh [14]</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Lack of training and scientific understanding to the farmers</td>
</tr>
<tr>
<td>Feeding</td>
<td>The dairy cattle are mostly fed with shuck and sheaves of dry grass. Continued supply of green fodder is apparently a distant dream for cattle in the state, so major constrain faced by farmer is lack of green fodder</td>
</tr>
<tr>
<td>Breeding</td>
<td>Lack of high yielding milch breed cattle</td>
</tr>
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</table>

Table 1: Constraints faced by dairy farmers in different regions of the country
<table>
<thead>
<tr>
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<th>Feeding</th>
<th>Breeding</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punjab</td>
<td>Less active veterinary services and diagnostic services</td>
<td>Inadequate knowledge about balanced feeding, low availability of green fodder and dry fodder, high cost of feed and fodder</td>
<td>Disposal of male calves, low price of crossbred cow milk, less fat content in cow milk</td>
<td>Lack of transport, lack of standard pricing dairy farmers face a financial loss, lack of technological adoption, migration problem and water crises, lower milk production</td>
</tr>
<tr>
<td>Haryana</td>
<td>Lack of sufficient veterinary services and non-availability of vaccines</td>
<td>Lack of knowledge about recommended feeding practices of dairy animal</td>
<td>Lack of knowledge of record keeping and waste disposal practices</td>
<td>Lack of remunerative price of milk</td>
</tr>
<tr>
<td>Bihar</td>
<td>Low availability of timely treatment facilities and lack of knowledge of common contagious diseases, their prevention and control measures</td>
<td>Lack of knowledge about recommended feeding practices of dairy animal</td>
<td>Non-availability of feed and input material and fodder seeds</td>
<td>Lack of scientific management, farmers not take services from vet. Experts nor consult only kept the traditional way and unavailability of improved breeds of livestock</td>
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<td>Bihar</td>
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<td>Madhya Pradesh</td>
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<td>Chhattisgarh</td>
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<td>West Bengal</td>
<td>The livestock support services were very poor in the state.</td>
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Note: The table above summarizes the various constraints faced by farmers in different states, categorized under different aspects such as health, feeding, and breeding. The states mentioned are Punjab, Haryana, Bihar, Madhya Pradesh, Jharkhand, Chhattisgarh, and West Bengal. The constraints include poor milk prices, unavailability of feed and fodder, lack of veterinary services, etc.
Table -1 gives us strong view on different constrain faced by dairy farmers through the country which directly affecting livestock owners. A brief summarized interpretation of the different states constrain discussed below.

Constrain observed on northern states
Constrain faced by respondents from Doda district of Jammu like lack of finance, lack knowledge, high feed cost, poor AI, repeat breeding and high cost of treatments were serious constrain in their region. In hilly track of Himachal Pradesh respondents faced constrains lacking of farmers training, lack of green fodder. Lack of high yielding milk breed. Similarly in Uttarakhand lack of transport, lack of standard pricing, unavailability of green fodder and indigenous breeding bull
and lack of sufficient veterinary services were major constrain. Punjab and Haryana were in top ten milk producing state in India, respondents from both state face non remunerative price of milk, high cost of feed and fodder and incidence of reproductive disorders were major constrains. Lack of knowledge of record keeping, recommended feeding practices and common contagious diseases prevention and control measures were perceived constrain in Uttar Pradesh. Similarly in second highest milk producing state Rajasthan dairy farmers faced subsidy on local animal purchasing, non-availability of feed and fodder, Non availability or disgraceful of A.I / P.D. at doorstep and high cost of private veterinary services were major faced problems.

Constrain observed on eastern states
Bihar, Jharkhand, West Bengal and Odisha were among the eastern region states of India. Lack of scientific management of livestock, lack of green fodder, problems of infertility in cattle, Non-availability of artificial insemination (AI) centres, high cost of medicine and decreasing common grazing land were major constrain faced by eastern states. Odisha is known as disaster capital of India famers over there mostly facing scarcity of clean and safe water, unavailability of green fodder and dry fodder and problem of ecto and endo parasitic infestation was major problem [12].

Constrain observed on north-eastern states
Assam is highest milk producing state among north-eastern states with 882 million litres [33]. Constrain faced by dairy owners their include high cost labour and feed, lack of financial assistance to dairy and high calf mortality in calf were major problems. Nagaland rank 5th in milk production among seven sister state with 73 million litres milk production. Low price of milk, lack in availability of green fodder, repeat breeding and improper treatment services were major constrain. While Mizoram which is lowest milk producing state among north-eastern state faced constrain like lack of organized marketing facility, inadequate dry and green fodder, unavailability of AI facility on time and lack of veterinary facility [33].

Constrain observed on central states
Madhya Pradesh is one of three top milk producing state of India, low price of milk and milk products, farmers do not aware about scientific feeding practices, farmers do not have superior animals for breeding and not follow the vaccination in animals were major constrain in state. Chhattisgarh farmers faced problems like rearing of low producing local cows, poor quality feed and fodders and not getting livestock support services.

Constrain observed on west states
Gujarat and Maharashtra are two state which possess most number of recognised Indigenous dairy breeds of cattle and buffalo. Farmers over their faced problem like lack of knowledge of recommended management practices, poor irrigation facilities for cultivation of fodder crops, unavailability of on time veterinary services, low milk production from the local buffalo breeds and inadequate knowledge of diseases, their prevention and control.

Constrain observed on south states
The Telangana state is ranked eighth in livestock population and 13th in milk production. Farmer majorly facing problems like high cost of dairy animals, high cost of fodder & concentrate, non-availability of breeding bulls locally and Non availability of veterinary services. Nearby state Tamil Nadu ranks among the top ten milk producing states of the country with a daily production of 206 lakh litres per day. Farmers over there facing constrains like lack of availability of labour, unavailability of green fodder round the year, infertility problem and poor conception rate of AI and the vulnerability of cross-bred animals to diseases. Karnataka ranks 11th in overall milk production in the country though the State is the second largest milk producer in the cooperative sector after Gujarat. Major problems faced by dairy farmers include low price of milk, lack of feed and fodder, high cost of production, poor conception rate through AI and high cost of veterinary medicines. National Dairy Research Institute (NDRI), Karnal, on dairy production systems in the country has given Kerala the top spot overall among 20 milk-producing States [34]. Kerala stood first in three categories animal breeding, resource availability and policies and regulations. Even though problem of high labour cost, high cost of cattle feed, non-availability of high yielding milch animals and high cost of veterinary service and medicine were major contain faced by dairy farmers.

Conclusion
Global demand of milk is growing by 15 million tons per year, mostly in developing countries like India. In changing global scenario it is required to educate farmers regarding scientific management of dairy animals, operations like clean milk production, processing, preservation, storage and transport of milk and milk products are required to know importance. Based on above discussion it intimated that constrain like lack of proper knowledge regarding scientific management of dairy animals, inadequate knowledge about balanced feeding with lack in good quality feed and fodder availability, unavailability of high genetic merit indigenous bulls, poor conception rate through AI and lack of sufficient veterinary services were major constrain to cope up. In order for India to become a leading performer at world level need to make strategy to solve ground level problems of farmers.

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33. https://www.nndb.coop/information/stats/milkprodstate

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