JOURNAL OF CRITICAL REVIEWS

ISSN- 2394-5125 VOL 06, ISSUE 06, 2019

PROBLEMS AND PROSPECTS OF DAIRY FARMING IN PUNE DISTRICT

Shubhangi Salokhe
Symbiosis Institute of International Business (SIIB), Symbiosis International University, Pune.

Abstract
Successful dairy farming requires adequate knowledge and scientific management of dairy cattle and business operations. Critical aspects such as breeding, feeding, marketing, and institutional factors have its profound effects offering wide challenges in the management of the dairy. The study undertaken in the Pune district of Maharashtra state is based on primary data collected from 72 villages. The objectives are to study problems faced by dairy farmers in Pune district, to study prospects of dairy farming in Pune district and to find out expectations of dairy farmers from dairy and Government. Multi-stage sampling is adopted to select talukas and villages from Pune district, and further snowball technique is used to select respondent samples for the study. Study results indicate that cost of production of milk is high compared to revenue generated through milk sales, further leading to lower morale and depleting interest in dairy farming. The study concludes that farmers are facing mainly marketing, breeding and institutional problems. Good price for milk by dairy and handholding support by the Government for healthcare facilities for cattle, loan and subsidies for sustenance and expansion of business could motivate farmers. The study needs to be replicated in wider regions for a deeper understanding of the resource and capability challenges involved in dairy farming as future research directions.
Keywords: Dairy farming; Farmers; Milk; Problems, Farmers Expectations.

Introduction

About dairy farming in India and Maharashtra

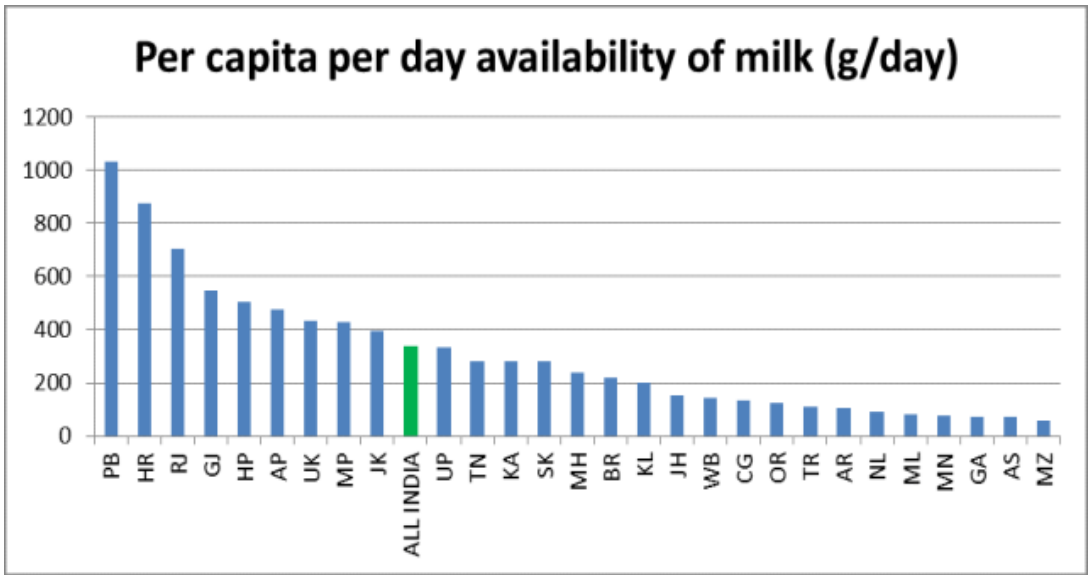
The dairy sector in India is contributing significantly to the national economy**.** India is the largest producer of milk in the world. There is immense scope of dairy farming in India. The demand for milk & milk product is increasing rapidly. It provides employment and supplementary income to a large number of farmers in India. It provides an excellent opportunity for self-employment of unemployed youth. It is an important source of income generation for small and marginal farmers and agricultural laborers in the rural area**.** Small scale dairy farming in India is no doubt playing an important role in the total milk production and economy of our country. Most of the dairy farmers in India are raising animals in small scale traditional methods.

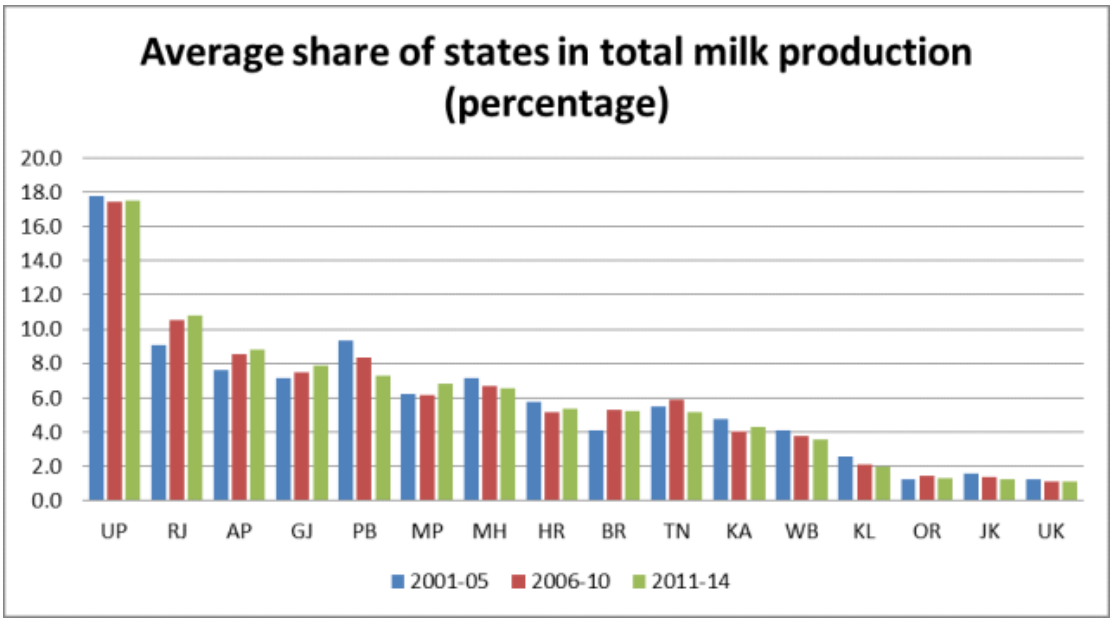
Around 70 per cent of small farmers in India are dependent on the rearing of livestock and dairying to supplement their farm income. Most of the milk procurement and sale in the country is through local private traders. The participation of cooperative society in the procurement of milk is varied across regions. Dairy cooperatives in Gujarat, Karnataka, Tamil Nadu and Maharashtra account for more than a half of cooperative milk procurement in India. The total quantum of milk produced in the county during 2015-16 is 155.5 million tonnes, and the per-capita availability of milk is 337 grams per day (Press Information Bureau Government of India, July 2016).

Technical efficiency of dairy farms in developing countries could be an important measure to understand the competitiveness of smallholder dairying. Low productivity has been a major problem of Indian dairying for a long time. It is important to know what policies and steps need

ISSN- 2394-5125 VOL 06, ISSUE 06, 2019

to be taken for productivity enhancement before investing scarce capital in certain factors which affect productivity.





Source: Evolution of dairy farming in India, By Varun Kumar Das, May 2107.

Challenges and Issues

Indian Dairy farmers are in crisis with the increased cost of production and non-remunerative prices. Return on investment for dairy farmers are very less due to increased costs of feed and medical expenses for animals. Earlier, the cattle used to depend on grazing, natural resources and crop residue for fodder which are decreasing now. The milk farmers forcibly depend on the packaged cattle feed to increase milk production. Eventually, the cost of production has increased. Feed cost has been increasing up to 30- 50 per cent from the past four consecutive

years, but the milk procurement prices have not increased comparatively. Health care also a big burden; vaccination and De-warming costs have been increased.

The productivity of the cattle is based on caring and managing; farmers are slowly decreasing their nonperformance animals and switching over to efficient breeds like Jersey and Holstein Friesian. Investment on these exotic cattle is a heavy burden for the farmers, and these breeds need more feed, water and care since they are not native animals. Farmers are struggling to get loans for milking animals, and also the bank charges are very high up to 12% interest rate, and insurance cost is additional. With the increased cost of production including expensive breeds the dairy farming is not remunerative, so the farmers are slowly decreasing their herd size and some of the farmers have given up the dairy farming.

Objectives of the study

This paper has three objectives. The first is to study the problems or difficulties faced by dairy farmers while adopting day-to-day animal husbandry practices in their dairy enterprise. The second objective of this paper is to study the opportunities for dairy farming in Pune region expectations of the farmers from Government. The third objective is to study the expectations of the farmers from Government.

Significance of the study

The improvement of dairy production will be particularly important in coming years in view of the future demand for livestock products, which is expected to double by 2020, while the natural sources that sustainable agriculture will become increasingly scarce and degraded. So the improvement in livestock production, particularly dairy farming, is an important pathway for increasing the income of marginal, small and landless labours given the uncertainties of crop production. Thus the sector needs focused attention. But there are some important factors which affect the development of this sector which are feeding, breeding, marketing and institutional factors. Thus, alleviating the constraints in scientific management and skill of the farmers can definitely augment the profits.

Literature Review

The review is arranged in a sequence as given below-

Yankam and Bhanotra in 2018 studied various health management and milking practices followed by dairy farmers in Maharashtra. Their results showed that farmers are unaware of scientific management and healthcare practices. Dairy personnel are not following hygienic practices or clean milk production practices. So there is a need to improve these practices in order to improve the hygienic environment in dairy farming.

Ghosh et al. 2017 collected primary field-level information; it suggests that despite the white revolution, milk production still remains largely a subsistence activity and producing milk for sale is not always profitable activity. The results of their study also revealed that the producer's remuneration varies with the uses of different marketing channels. They reported a serious concern about the commercial prospects of dairy farmers because these farmers are practising dairy as a subsidiary economic activity.

Jadawala and Patel in 2017 discussed different challenges of the Indian dairy industry. According to them, the main challenge is the cost of production of milk because the average milk yield of Indian cattle is less. Other important challenges are the high cost of milk handling and marketing, poor quality milk due to unhygienic milk handling. Quality of milk is deteriorated

because of the poor health of animals, polluted water and food and uncleaned surroundings of the farm. If we want to increase quality milk production, then it is necessary to consider all these challenges.

Sati, 2016 reported that livestock farming has high potential in terms of economic sustainability. According to them, the formulation of need-based policies and their implementation is a must for sustainable development of livestock. There is a need of Government initiatives to provide cold storage; processing centres for milk and market for milk and milk products. Financial assistance is essential for dairy farmers during adverse conditions.

Kunte and Patankar in 2015 studied Indian dairy industry, and they reported that dairy farming is highly capital intensive and the investment pattern is different in small farms as compared to large farms. Large farms invested more in cattle while the major investment of small farms is in the development of infrastructure. Feed cost is the highest contributor to the total cost in dairy farming, so commercial dairy farms preferred to have their own fodder cultivation instead of dependence on purchased fodder.

Popescu in 2014, studies the relationship between milk cost in terms of labour cost and material cost. The author estimated the influence of these costs on returns coming from milk and found that there is a close relationship between income from marketed milk and material cost and labour cost. Profitability in dairy farms depends both on milk output, milk market price, and cost of input. Income coming from marketed milk represents a significant economic indicator for establishing the optimum dairy farm size.

Rajeshwaran et al., 2014 reported that due to high growth in demand for milk in the domestic and international markets. The food price rises because domestic supply is not keeping pace and cost of production of milk is also increased. This situation is expected to continue with lower growth in the milk-producing adult female animal population. Therefore, it is essential to study and strengthen the entire production ecosystem, increase the use of new technology, availability of credit, access to information, improvement in risk cover mechanisms and mainly access to markets to enhance profitability and reduce risk, to incentivize dairy animal rearing and milk production.

Dhindsa et al. 2014 studied problems of dairy farmers in Punjab. According to him, more than 90 per cent dairy farmers believed that major constraints in dairy farming are low price of crossbred cow milk, high cost of fodder and feed, less fat content in cow milk and the problem of disposal of old/disabled cows. Other major constraints are inadequate knowledge about balanced feeding, reproductive disorders and high mortality in male calves. He recommended that dairy farmers should be encouraged to rear high yielding animals only. Further, appropriate strategies may be formulated to optimize reproductive efficiency of the animals in the area.

Ghule et al., 2012 reported those dairies are not commercialized in India. The author collected data from forty dairy farms of Ahmednagar district in Maharashtra and carried out an analysis of capital investment, cost, return and profitability. He concluded that dairy farming is a highly capital intensive business. The investment pattern is different for small and large farms. Large farms invested more in cattle while the small farms' major investment is in development of infrastructure. Feed cost is the highest contributor to the total cost of dairy farming. Hence, commercial dairy farms mainly interested in having their own fodder cultivation instead of dependence on purchased fodder.

Kumar et al. 2012 reported that the dairy industry is going to play a major role in our Indian economy in the years to come. The value of milk is set to achieve a new boom. In the 21st century, the dairy industry will be the major contributor in providing avenues for direct and

indirect employment. It will also help to improve the nutritional standards of people also add to the importance that needs to be attached to this sector.

Results of the study done by Lalrinsangpuii et al. 2016 showed that feed cost accounted for around 60 % of the total cost for crossbred cow and 29 % for the local cow. They also reported that feed is one of the most important inputs in milk production. There is a great potential for increasing the milk production by increasing the concentrate feed for both the breeds. According to them, a significant increase in milk production can be achieved by making provision of good quality feeds and fodder in a sufficient amount.

Meena and Jain in 2012 carried out a comparison of cost and returns of milk production among different herd size. The per-day net maintenance cost was found to be higher for member group than that of non-member group. It was found to be higher in case of buffalo than that of cow and also observed more in the summer season. They found that with increase in herd size across different seasons per litre cost of buffalo milk production decreased but the same trend was not observed in the case of cow milk production.

Paula and Chandel in 2012 reported that Assam, Tripura and Manipur are the highest milk producing states with highest crossbred animals. They carried out the study to find out the factors affecting the milk yield of crossbred animals. According to them, the major factors affecting the milk yield of crossbred animals are the technological and socio-economic constraints. These factors can be addressed by adopting better feeding practices, improved management practices, controlling of diseases, by improving the socio-economic conditions of the farmers through education and training and enhancing access of the dairy farmers to the funds. According to author the factors which significantly affects the milk yield at the household level are the economic status of the farmer, expenditure on concentrate, allocation of human days per animal, and availability of the green fodder in that area.

Singh et al., 2012 found that average daily milk production was increased due to use of improved scientific dairy farming practices and an increase in the number of crossbred cows in the total milch animals. They also reported that an increase in herd size led to a decrease in the productivity of animals. The members of a single-family maintained dairy animals more carefully than those of joint family. It was found that the cost of milk production per litre was comparatively low in case of crossbred cows (10.4) than local cows. Cost of milk production per litre in urban areas was found relatively higher in comparison to rural and semi-urban areas. It is due to higher fixed costs, feed cost and labour cost.

Methods

Research approach

The study was carried out in the Pune region in 9 talukas (Khed, Maval, Haveli, Ambegaon, Bhor, Purandar, Shirur, Velhe and Mulshi). The descriptive type research design is adopted, with support from the exploration of literature, websites, case studies and opinions of some resource persons.

Collection of data

Primary data for the present study were collected from the dairy farmers. A well-structured and close-ended questionnaire was used as a tool for data collection. The problems were discussed, and the respondent's views/ suggestions/ opinions were solicited for improvement of the same.

Problems were studied under four categories i.e. feeding, breeding, marketing and institutional constraints

Sampling

Multi-stage random sampling technique is used for the selection of tehsils and villages. Snowball technique is used for the selection of respondents.

- In the first stage, nine tehsils were selected
- In the second stage, from each tehsil, 8 villages/wadis were selected.
- 9 dairy farmers from each village/ wadis were selected for the study.
- The total sample size was 648 purified to 600

Results

Data analysis

A. Descriptive statistics

Descriptive statistics were first applied to describe the basic feature of data used for analysis. The data collected through the questionnaire were scored and tabulated into a master data sheet. The data was analyzed with the help of statistical package SPSS 17. The means cores arrived are put to various statistical analysis using different statistical tools in order to test the research hypothesis.

Following statistical tools were used for data analysis-

1. Frequency table with percentages
2. Rank order

The raw data has been collected with the help of a questionnaire from the primary source.

Table 1. Profile of farmers selected as a sample for the dairy farming study.

Particulars		**%**
Age of the farmers	Below 20 years	1
	20-30 years	15
	30-40 years	28
	40-50 years	23
	Above 50 years	33
Farmers Gender	Male	99
	Female	1
Farmers Education	Illiterate	24
	Basic writing and reading	23
	8-10	39
	HSC	10
	Graduation	3
	Post-Graduation	1
Occupation	Farming	97
	Private job	1
	Other business	2

B. Reasons for not sustaining in dairy farming

Table 2. Farmers are selling milk to whom

To whom do you sell the milk	Frequency	Percent
To individual consumers	25	4.2
To processing plant	576	96.0
To intermediate cater	0	0.0
To restaurants/cafeteria	0	0.0
Other	0	0.0

The major response for selling milk is to the processing plant (96.0 %); then to individual consumers (4.2%).

Table 3. Frequency of payment

What is the frequency of payment?	Frequency	Percent
Daily	2	0.3
Weekly	25	4.2
Fortnightly	508	84.7
Monthly	65	10.8

84.7 % of farmers are getting payment fortnightly, followed by monthly payment.

Table 4. Grazing of animals

Do you send animals for grazing?	Frequency	Percent
Yes	299	49.8
No	301	50.2

50.2 % of farmers are not sending their animals for grazing only 49.8 % are sending for grazing.

Table 5. Use of modern techniques or machines for dairy farming

Do you use any kind of modern techniques or machines?	Frequency	Percent
Yes	48	8.0
No	552	92.0

The major responses of farmers in no. 92 % farmers are not using any modern technique or machine for dairy farming.

Table 6. Plan for increasing milk production in future.

Is there any plan for increasing milk production in future?	Frequency	Percent
Yes	136	22.7
No	464	77.3

77.3 % of farmers are not interested in increasing milk production in future because they think that it is not a profitable business.

C) Problems faced by dairy farmers

Table 7. Facing problems or not

Are you facing any problem?	Frequency	Percent
Yes	596	99.3
No	4	0.7

The major response to the problem faced is yes. 99.3 % of farmers told that they are facing a lot of problems in dairy farming.

Table 8. Maintenance cost per animal per month

What is the maintenance cost per animal per month?	Frequency	Percent
Below 1000	31	5.2
1000 to 5000	515	85.8
5000 to 10000	43	7.2
Above 10000	11	1.8

The maximum maintenance cost per animal per month is Rs 1000 to 5000, which is reported by 85.8 % of farmers. During the period when animals are not giving milk, it is very difficult to maintain them.

Table 9. Problems faced by dairy farmers

Which problems do you face?	Frequency	Percent
Feeding problems	206	34.3
Breeding problems	544	90.7
Marketing problems	576	96.0
Institutional problems	398	66.3
Others	0	0.0

The problem faced most is marketing problems (96 %) ; then breeding problems (90.7 5); then Institutional problems (66.3 %); then Feeding problems (34.3 %).

Table 10. Marketing Problems

The frequencies for the responses of the question along with its bar graph are as given below.

Marketing Problems	Frequency	Percent
Lack of regulated market and milk cooperatives	141	23.5
Lack of transport facility and all-weather road	70	11.7
Delay in payment by the unorganized sector	36	6.0

Distantly located milk collection centre	10	1.7
The low price of milk	517	86.2
Other,	0	0.0

The major problem is low price of milk; then lack of regulated market and milk cooperatives; then lack of transport facility and all-weather road; then Delay in payment by unorganized sector; then Distantly located milk collection centre.

Table 11. Breeding Problems

Breeding Problems	**Frequency**	**Percent**
Low productivity of animals	547	91.2
Relatively low conception rate through	126	21.0
Incidence of reproductive disorders in the milch	60	10.0
Other,	0	0.0

The major problem is the low productivity of animals (91.2 5); then relatively low conception rate through (21.0 %); then the incidence of reproductive disorders in the milch (10.0 %).

Table 12. Institutional Problems

Institutional problems	**Frequency**	**Percent**
Inadequate knowledge about balanced feeding	228	38.0
Lack of AH and veterinary facilities	190	31.7
Lack of awareness of animal health care	219	36.5
Unawareness to improve dairy farming practices	242	40.3
Insufficient veterinary doctors or attendants	245	40.8
Tick/worms infestation	12	2.0
Other,	0	0.0

The major problem is insufficient veterinary doctors or attendants (40.8 %); then Unawareness of improving dairy farming practices (40.3 %); then inadequate knowledge about balanced feeding (38.0%); then lack of awareness on animal health care (36.5 %); then lack of AH and veterinary facilities (31.7 %).

Table 13. Feeding Problems

Feeding Problems	**Frequency**	**Percent**
Lack of availability of Green Fodder	169	28.2
Low availability and high cost of concentrate	400	66.7
Low availability of dry fodder	162	27.0
No availability of land for fodder productions	167	27.8
Others	9	1.5

The major problem is low availability and high cost of concentrate (66.7 %); then lack of availability of green fodder (28.2 %); then no availability of land for fodder productions (27.8 %); then low availability of dry fodder (27.0 %); then others (1.5 %).

D) Eexpectations from Government and dairy

To increase the interest of Gen-next in dairy farming, they have expectations from dairy as well as from Government.

Table 14. Expectation from dairy

What type of help do you expect from dairy?	Frequency	Percent
Good price for milk	574	95.7
Loan	253	42.2
Animal feed	169	28.2
Animal health check-up	115	19.2

Farmers have many expectations from dairy. Mainly they are expecting good price for milk ((5.7 %) then, a loan for dairy farming (42.2 %) and good quality animal feed (28.2 %).

Table 15. Expectation from Government

What type of help do you expect from Government?	Frequency	Percent
Loan	187	31.2
Subsidy	150	25.0
Training	252	42.0
Other	11	1.8

Farmers have a lot of expectations from the Government. Mainly they are expecting training for scientific rearing of animals (42.0 %); then another expectation is a loan for starting a dairy business and scientific rearing of milch animals (31.2%). Farmers are also expecting subsidy on animals feed, veterinary medicines, machinery and equipment used in dairy farming.

Conclusion

Dairy business in Pune district has got great potential from production to distribution. Pune district has a large number of small farms, and there is a high input cost for rearing animals. Dairy farmers are facing a lot of problems, mainly marketing, breeding and institutional problems. Low price for milk is the major problem other problems are no availability of animal health check-up centres, non-availability of quality feed and fodder for animals, inadequate coverage of veterinarian and breeding services, non-existent extension services. A very high rate of interest is there, so the farmer has to sell milk at a low price to the trader if he/she has borrowed money from the trader. Low productivity per animal is another factor hindering the development of the dairy sector in Pune district. An inadequate cattle and buffalo breeding programme, extension and management on dairy enterprise and feeding practices.

Based on the findings it is recommended that efforts should be made for Increasing productivity of animals, better health care and breeding facilities and scientific management of dairy animals can reduce the cost of milk production, and it will help to increase profit to increase the

productivity of animals and to reduce the cost of maintenance of cows. To make dairy farming more remunerative, animal management systems and production, efficiencies need to be improved. There is scope for modernization of dairy farm with new technologies and infrastructure. High remunerative milk procurement price to farmers will help to win back their interest in milk production.

Farmers are ready to start a new dairy business, but financial support is essential. So the Government should support farmers by giving loans for starting dairy farming. Finance and Insurance should be made available at the interface of communities and members in an integrated dairy development model. A subsidy must be given to the small farmers to purchase quality feed for animals, fodder, breeding, veterinarian services, medicines, vaccines, credit and Insurance. Huge demand for milk exists in the market and will go on increasing. So many value-added products can be generated from milk. So dairy farming can generate income throughout the year.

The dairy industry is in need of "information" (both technical and financial) on a 24x7 basis. Farmers need proper training for the use of new technologies in dairy farming, monthly animal health check-up, and animal health awareness camps etc. Government support is essential for introducing new breeds of cows and buffalos, for development of fodder nurseries and fodder conservation. There is need to advise farmers to expand, intensify and 'modernize' their production by replacing local breeds with high-producing exotic milk breeds to enhance production and to decrease their costs of production through expanding herd sizes.

There is a need to help the next generation to get into commercial and scientific dairy farming. There is a need to develop strong market linkages and integration of all dairy farmers to registered groups, societies, private or public companies. Developing formalized groups with progressive thoughts and a strategy for the long run to grow and sustain will help in the engagement of the farmers and their family.

Limitations of the study

The researcher selected the area for the study, i.e. Pune District, due to geographical constraints of the researcher. However, to study the area of research is geographically larger with sufficient resources available for research. Samples collected from Pune District may differ in characteristics. The study is limited for selected dairy farmers; hence the findings and results of the research may not be applicable to the whole industry.

Future research directions

The study needs to be replicated in wider regions for a deeper understanding of the resource and capability challenges involved in dairy farming as future research directions.

References

1. Dhindsa, S.S., Nanda R. and Kumar, B. (2014). Problems and constraints of dairy farming in Fatehgarh Sahib district of Punjab. Progressive Research, 9 (1) 250-252.
2. Ghosh, N., Tripathi , A., Rajeshwor and Singh R. (2017). Do producer gain from selling milk? An economic assessment of dairy farming in contemporary India. Economic and Political Weekly, 52 (25), 88-96.
3. Ghule, A.K., Verma, N.K., Cahuhan, A.K., Sawale, P. (2012). An Economic Analysis of Investment Pattern, Cost of Milk Production and Profitability of Commercial Dairy Farms in Maharashtra. Indian J. Dairy Sci., 65(4), 341-350.

4. Gould, B. W., Mitchell, P.D and Cabrera, V.E. (2009). USDA's gross margin insurance program for dairy: What is it and can it be used for risk management. Marketing and policy briefing paper, Department of Agricultural and Applied Economics, University of Wisconsin–Madison. Retrieved from http://future.aae.wisc.edu/pubs/pubs/show/339 Accessed Jul. 17, 2009.
5. Kunte, B.S. and Patankar, S. (2015). A literature review of Indian dairy industry. International Journal of Management Research & Review, 5 (6), 341-350.
6. Malhotra L. R. and Priscilla, L. Economics of milk production and its constraints in Mizoram. Indian J Dairy Sci., 69(5), 588-594.
7. Meena, G.L., Jain, D.K. (2012).Economics of Milk Production in Alwar District (Rajasthan): A Comparative Analysis. International Journal of Scientific and Research Publications, 2(8), 1-5.
8. Popescu, A. (2014). Research on milk cost, return and profitability in dairy farming. Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development, 14 (2), 219-222.
9. Paula, D. and Chandel, B.S. (2010). Improving milk yield performance of crossbred cattle in North Eastern States of India. Agricultural Economics Research Review, 23, 69-75.
10. Rajeshwaram, S., Naik, G. and Dhas R.A.C. (2014). Rise in Milk Price: A Cause for Concern on Food Security. PP: 472.
11. Saravanakumara, V. and Jain, D.K. (2009). Evolving Milk Pricing Model for Agribusiness Centres: An Econometric Approach. Agricultural Economics Research Review, 22, 155-160.
12. Kumar, S.S., Singh, R., Mishra U.K and Mishra D.J. (2012).Strategies for Sustainable Dairy Farming in India: A Review. Research Journal of Recent Sciences , 2, 42-44.
13. Sati, V.P. (2016). Livestock farming in the Uttarakhand Himalaya, India: use pattern and potentiality. Current Science, 3 (12), 1955-1960.
14. Singh KM, Meena MS, Bharati RC, Kumar A. (2012). An economic analysis of milk production in Bihar. Indian Journal of Animal Sciences, 82(10): 1233–1237.