

Constraints Perceived by the Dairy Farmers in Irrigated Ecosystem: A Case Study from Damodar Command Area, West Bengal

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Abstract

Dairy farming in India is important not only in view of fulfilling the demand of milk in the country, but it has become necessary in the perspective of the reintroduction of organic farming. Despite West Bengal being one of the leading milk producing states in India, the associated bottlenecks need to be identified and solved in time so that further progress in dairy farming is not hindered. The present study in the Damodar command area of District Bardhaman, West Bengal, one of the intensive agricultural zones; was done to identify the social, socio-economical, feeding, livestock management, breeding, healthcare and marketing related constraints as perceived by the common dairy farmers in this region. And non-availability of pasture land, repeat breeding problem and non-availability of artificial insemination (AI) centers, distress sell, non-remunerative price of milk and lack of proper training; were identified as some of the major limiting factors in the area. The study indicated that proper planning and action plan need to be developed to support the growth of dairy farming in West Bengal.

Keywords: Socio-economic constraints, live stock management, breeding constraints, marketing constraints

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INTRODUCTION

Dairying is an integral component of agricultural management system for sustainable crop production [1]. For restoring soil health, it is necessary to check exploitation of chemical fertilizer and increase the use of organic manure which is extremely dependent upon dairy farming. The livestock, particularly the bovine sector, has emerged as a vital segment of the expanding and diversified agricultural sector in the Indian economy [2, 3]. Better correlation between crop production and bovine husbandry in rural sector is owing to uplift socio-economic status of the sector.

In the last three decades, world milk production has increased by more than 50%, from 500 million tonnes in 1983 to 769 million tonnes in 2013. India is the world's largest milk producer, with 18% of global production, followed by the United States of America, China, Pakistan and Brazil [4]. Top 10 states that contributed its part in

milk production were Tamil Nadu, Maharashtra, Punjab, Kerala, Karnataka, Andhra Pradesh, West Bengal, Gujarat, Uttar Pradesh and Bihar. West Bengal is in 7th position with estimated milk production of 2120.72 thousand tonnes that was 6.5% of total milk production in India. Still, West Bengal is not self sufficient in milk production. So, for the improvement of the dairy sector towards betterment of the rural economy along with sustainable crop production, it is necessary to solve the problems emerging in the dairy sector. In this context therefore, the present study was aimed with the following objectives:

- (i) To identify constraints perceived by the farmers in the adoption of animal husbandry and dairy technology.
- (ii) To find out the areas where training is needed as per the dairy farmers.

MATERIALS AND METHODS

The study area lies in between 23°14' to 23°15' 30"N and 87°55' to 87°56' 20"E

covering three villages of Naopara, Syamsundarpur and Kantia in Barddhaman sadar, Barddhaman district, West Bengal, under world bank funded project ‘Land Use Planning for Management of Agricultural Resources-Irrigated Eco-system’ (Under NATP, Mission Mode-4). A random sampling technique was employed for the study. A total no. of 80 respondents were interviewed as per structured interview schedule prepare to reflect the constraints in the field. Primary data were collected from the selected/surveyed households on bovine husbandry with respect to socio-economic characteristics, milk production, cost, other expenses in the milk production, factors associated with milk production and constraints faced by farmers in management of bovine husbandry.

RESULT AND DISCUSSION

Dairy is one of the important sectors after crop production in the study area. Farmers of the area undertake dairy as secondary source of income to support the maintenance of their livelihood. So, improvement in dairy sector reflects in the upliftment of socio-economic status of the area. The constraints perceived by the local farmers have been investigated and presented in this section.

Social Constraints

Dairy farming is deeply related with Indian traditional culture and Hindu methodology. Some dairy farming operations opposing traditional social concepts make hindrance towards dairy farming. Table 1 reveals the social constraints perceived by the local farmers in the field of milk production. Religion is the main constraint followed by caste, social status and customs respectively. Basically, social constraints like religion and caste create problems for selling milk products in the local market, while it does not change any such decision affecting the wholesale market.

Table 1: Social Constraints as Perceived by Dairy Farmers.

Social Constraints	Frequency N=80	Percent	Rank
Social status	35	43.75	III
Religion	47	58.75	I
Caste	39	48.75	II
Custom	31	38.75	IV

Socio-Economic Constraints

Several socio-economic factors were analyzed and attempts were made to find out the socio-economic constraints and ranked according to their importance. Table 2 reveals that, non-availability of pasture land is the major problem, because, according to the cropping sequence, there is very little time in a year, when the fields are vacant for grazing the animals. Lack of pasture land is followed by high initial cost, poverty and others respectively. Size of land holding ranked V, poor land holding status is one of the major constraints in the way of improving infrastructural facilities.

Table 2: Socio-Economical Constraints as Perceived by Dairy Farmers.

Socio-Economical Constraints	Frequency N=80	Percent	Rank
Size of land holding	53	66.25	V
Poor infrastructure	69	86.25	III
Non-availability of pasture land	74	92.5	I
High initial cost	65	81.25	II
Unemployment	43	53.75	VI
Poverty	57	71.25	IV
Nature of occupation	41	51.25	VII
Long gestation period	35	43.75	VIII

Feeding Constraints

Constraints faced by the dairy farmers related to the feeding of animals are presented in Table 3. The main problem related to the feeding is feeding materials. According to Koeleman, the availability of green fodder in India is limited and with the limited land under fodder cultivation, there is need to focus to improve productivity of fodder crops and common grazing lands [5]. With the increasing price of feeding materials, cost of milk production also increases. This is followed by non-availability of quality feeds, ignorance about balance feeding and method of feeding respectively. Ignorance about balance feeding not only hampered milk production, but milking life span of the animals is also shortened.

Lives Stock Management Constraints

Management of dairy farming is becoming more complicated day by day. Today, it is not merely a work, it is science. In this study, an

effort was made to identify the constraints related to livestock management. Table 4 reveals that construction of cattle shed is the main constraint, basically, before the small and marginal farmers. It is due to their small land resources and weaker economic profile to invest more. This problem is followed by calf care, cleaning of the cattle shed, time of milking, making the arrangement to prevent the animals from extreme cold or hot or fire and others respectively. Still today, even the large farmers of the area do not pay much attention towards scientific management of the animals, as they have no idea that how this factor adversely affects the milk production system.

Table 3: Constraints Perceived in Feeding of Animals.

Feeding Constraints	Frequency N=80	Percent	Rank
High cost of feeding	78	97.5	I
Non availability of quality feeds	71	88.75	II
Scarcity of fodder	53	66.25	IV
Ignorance about balance feeding	67	83.75	III
Method of feeding	41	51.25	V

Table 4: Constraints Perceived by Dairy Farmers Related to Management Practices.

Management Constraints	Frequency N=80	Percent	Rank
Cattle shed construction	73	91.25	I
Cleaning of cattle shed	65	81.25	III
Method of milking	36	45.00	VI
Time of milking	53	66.25	IV
Calf care	69	86.25	II
No provision for protection from extreme cold/hot/fire	47	58.75	V

Constraints in Breeding

The constraints faced by the farmers related to breeding were also investigated. Repeat breeding problem is the main problem of the area (Table 5). This is followed by other constraints like non-availability of artificial insemination (AI) centers, lack of conviction towards AI, time of service to animals not known, no pregnancy diagnosis, distance of bull owner and non-availability of healthy bull respectively. Actually, these constraints are the results of poor infrastructural facility and lack

of training of the dairy farmers as also found by some other workers [6–8].

Table 5: Constraints Perceived Related to Breeding of Dairy Animals.

Breeding Constraints	Frequency N=80	Percent	Rank
Non availability of AI centers	70	87.50	II
Non availability of healthy bull	32	40.00	VII
No pregnancy diagnosis	46	57.50	V
Repeat breeding problem	71	88.75	I
Distance of bull owner	37	46.25	VI
Lack of conviction towards AI	65	81.25	III
Time of service to animal not known	54	67.5	IV

Constraints in Health Care

In the dairy farming, disease related constraints, is one of the risk factors about which awareness level of farmers should be very high. This factor has the potential to make huge loss in this business in terms of loss of animal and productivity. Most serious fact is that, most of the farmers admit that they often fail to recognize the symptoms of various diseases. That is why this constraint ranked first (Table 6). Among the other constraints, high cost of veterinary services and lack of knowledge about vaccination schedule are the main constraints towards sustainable dairy farming. Besides this, though crossbreed animals are more susceptible to diseases, they are preferred for their higher milking ability. So, proper training and little more awareness is required to prevent the animals from various diseases.

Table 6: Ranking of Diseases Related Constraints Perceived by Dairy Farmers.

Constraints	Frequency N=80	Percent	Rank
High cost of veterinary services	75	93.75	II
Distant location of animal health centers	35	43.75	V
Lack of knowledge about vaccination schedule	71	88.75	III
Medicines are not easily available in the rural area	21	26.25	VI
Crossbreed animals are more susceptible to diseases	62	77.50	IV
Symptoms of various diseases are not known	78	97.50	I

Marketing Related Constraints

The main constraint related to milk production in the area is marketing related constraints. For the sake of saying, there is a milk cooperative. Wholesale market which is situated in Burdwan Town is not far from the area and the transport facility is not too bad. Still, major hindrance towards sustainable milk production is distress sale on remunerative market price of milk and absence of proper storage facilities (Table 7). Mismanagement rocks the cooperative and as the farmers are not united, they are often delayed in the case of payment. They are also often over-exploited by milk venders. Complications towards credit facilities and non-availability of loan during dry period of animal, especially in the case of small and marginal farmers, are the fields to look after. Lack of sufficient credit facility, farmers basically from the poorer section of the society cannot improve their basic infrastructural facilities towards sustainable milk production. Due to absence of sufficient chilling centers and inadequate market facilities, farmers are often bound to sell their produce at lower price.

Table 7: Ranking of Market Related Constraints Perceived by Dairy Farmers.

Marketing Related Constraints	Frequency N=80	Percent	Rank
Distant marketing place	22	27.50	X
Absence of credit facilities	58	72.50	VII
Absence of milk cooperative society	36	45.00	VIII
Over exploitation by milk venders	67	83.75	V
Delay in payment	71	88.75	IV
Non remunerative price of milk	78	97.50	II
Distress sale	80	100.00	I
No transport facilities	28	35.00	IX
Absence of storage facility	72	90.00	III
No possibility of loans during dry period of animal	62	75.50	VI

CONCLUSION

Indian agriculture is closely related with dairy farming. For sustainable production, improvement in dairy sector is very much needed. For the improvement of dairy farming

in the rural sector, the first thing is to do is improvement of basic infrastructural facilities like organize the farmers under cooperative, development of adequate no. of chilling centers and milk processing units, and improvement of credit facilities etc. Introduction of high yielding varieties of fodder crop in the crop calendar should be the first step towards minimizing the cost of fodder and balanced diet of the animals. Besides this, short term training schedule is required to update the dairy farmers with modern technologies and improved management system to ensure sustainable dairy farming. The farmers are needed to be trained to identify the preliminary symptoms of various diseases related to the animals. Improvement in this sector, not only rural sector inching towards sustainable milk production but it will also boost the rural economy by generating new scope of employment.

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