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RESEARCH ARTICLE

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## CONSTRAINTS FACED BY DAIRY FARMERS FOR ADOPTION OF DIFFERENT MANAGEMENT PRACTICES IN KAMRUP DISTRICT OF ASSAM, INDIA

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### ABSTRACT

This study aims to identify various constraints faced by the dairy farmers in adoption of different management practices. Data was collected from randomly selected 240 dairy farmers through personal interview with the help of structured interview schedule. The study identified several inter-related constraints affecting 240 sampled dairy farmers in Kamrup district. These constraints were broadly classified into management, production and marketing. The study revealed that high operational cost (87%), non availability of credit facilities (63%) and low water profile and irrigation facilities (62%) were major constraints in management practices. Whereas, high cost of feed (77%), high cost of medicine (73%) and low milk yield animal (63%) were major constraints in production. Non-remunerative price of milk (82%) and involvement of middleman were major marketing constraints faced by the dairy farmers. Hence, good extension services along with suitable plan for development could mitigate the constraints faced by dairy farmers.

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## INTRODUCTION

Agriculture, including dairy farming, plays a crucial role in the Indian economy, contributing to the GDP and providing employment to a significant portion of the workforce. Milk production in India has increased significantly over the years, with a per capita availability of milk higher than the world average. Dairying is important for improving the socio-economic condition of dairy farmers, reducing poverty, and providing livelihood security. The dairy sector is considered not only a source of sustainable livelihood but also a means of socio-economic development. Dairy farming is an essential component of rural economies, particularly in agrarian societies where it provides a source of income, food, and livelihood. The Cattle population constitutes the largest group with more than ten million. Out of the total Cattle indigenous /non-descript cattle comprises 1.1 crore while crossbred cattle population comprises 7.6 lakhs (Economic Survey Assam, 2021-22). In many rural areas of India, including the Northeast, livestock farming is deeply ingrained in the lifestyle and culture of local communities. Dairy production in Assam is mostly characterized by rural smallholder production using indigenous cattle and buffalo, with pockets of more specialized dairy production. While increasing farm-level production and productivity will require more improved animals, improved fodder/feed technology and access to livestock services, access of smallholders to reliable markets to absorb more milk at remunerative prices may remain a critical constraint. Organized marketing of milk in Assam remains relatively insignificant, despite past efforts to develop and

promote collective market mechanisms (Saha, 2015). The traditional markets for fresh liquid milk and traditional dairy products such as sweets account for most of the market opportunities for farmers. Production performance of dairy animals depends generally on the management practices under which they are reared and these practices vary significantly throughout various agro-ecological regions due to many aspects. There are some constraints in adoption of improved management practices varying from area to area and farmer to farmer.

### Objective

To identify problems faced by the dairy farmers and suggest measures for improvement.

## MATERIALS AND METHODS

Mixed-method research approach was employed to investigate the constraints faced by the dairy farmers in Kamrup district of Assam. Firstly, Kamrup district was selected due to largest number of households are dependent on dairy farming for their livelihood. Secondly, two blocks viz., Dimoria and Chandrapur selected from the Kamrup district. Ten villages from each block selected for their prominence as the most vibrant dairy farms. A total 240 samples were collected from the respective blocks. The survey schedule included multiple choice questions and open-ended queries to gather quantitative and qualitative data.

## RESULTS AND DISCUSSION

**Socio Economic Profile of the Respondents:** Table 1 represents the gender of the dairy farmers which classified as male and female. Out of 240 respondents, 229 (95.4%) belonged to male while the rest 11 (4.6%) belonged to female. The results indicated that males take up more responsibility when it comes to farming activities. Out of 42 small farmers 33 (78.6%) belonged to male while the rest 9 (21.4%) belonged to female. On the other hand, out of 59 medium farmers, 58 (98.3%) were male and 1 (1.7%) were female. Out of 139 large farmers, 138 (99.3%) were male and 1 (0.7%) were female.

**Table 1. Gender of the respondents**

Sl. No.	Gender	Small	Medium	Large	Total
1.	Male	33(78.6)	58(98.3)	138(99.3)	229(95.4)
2.	Female	9(21.4)	1(1.7)	1(0.7)	11(4.6)
3.	Mean	1.21	1.02	1.01	1.05
4.	S.D.	.415	.130	.085	.210

**Table 2. Age of the respondents**

Sl. No.	Age group	Small	Medium	Large
1	Young age (Less than 35 years)	7 (16.7)	4 (6.8)	5 (3.6)
2	Middle age (35 - 50 years)	26 (61.9)	36 (61.0)	71 (51.1)
3	Old age (above 50 years)	9 (21.4)	19 (32.2)	63 (45.3)
4	Total	42 (100)	59 (100)	139 (100)
5	Mean	2.05	2.25	2.42
6	S.D.	.623	.575	.563

**Table 3. Educational qualification of the respondents**

Sl No.	Educational level	Small (%)	Medium (%)	Large (%)
1	Illiterate	7.1	10.2	10.8
2	Primary school	14.3	11.9	10.8
3	Middle school	31.0	22.0	23.7
4	High school	23.8	30.5	28.1
5	Higher Secondary school	19.0	13.6	14.4
6	Graduate and above	4.8	11.9	12.2
Total		100	100	100

**Table 4. Family Size of the respondents**

Sl. No.	Category	Family Size			
		Minimum	Maximum	Mean	Standard Deviation
1	Small	3	7	4.60	1.13
2	Medium	3	7	4.61	0.98
3	Large	3	7	5.12	0.99
Overall		3	7	4.90	1.03

Table 2 indicates that the majority of the small farmers (61.9%), medium farmers (61%) and large farmers (51.1%) are in the age group of 35 to 50 years of age. Whereas, 21.4% small farmers, 32.2% medium farmers and 45.3% large farmers are belongs from the age group of above 50 years. Only 16.7% small farmers 6.8% medium farmers and 3.6% large farmers were in the age group of young age that is less than 35 years of age. Educational qualification plays a significant role in shaping the management efficiency, adoption of improved dairy practices, and decision-making ability of farmers. In the present study, dairy farmers of the selected area were grouped into seven categories: Illiterate, Primary, Middle school, High school, Higher secondary and Graduate and above. Table 3 depicts that most of the farmers (31%) having small farms are Middle school passed. The result also reveals that 23.8% of these farmers are high school passed followed by higher secondary pass (19%), primary school (14.3) and illiterate (7.1%). On the other hand, only 4.8% of the farmers having small farms have attended graduation and above. Whereas, 30.5% of the farmers having medium farms are High school passed followed by middle school (22%), higher secondary school (13.6%), primary school and graduation (11.9%) and illiterate 10.2%. In context of large farmers most of the farmers (28.1) completed high school followed by middle school (23.7%), higher secondary school (14.4%), graduation and above (12.2%) and illiterate and primary

school (10.8%). From the results it shows that the dairy farmers are very much conscious about the education. However, it can be concluded that higher education is not an essential qualification to run and manage dairy farms for livelihood. Family size plays an important role in determining the availability of family labour, management capacity, and participation of family members in dairy farming. In rural areas, especially in Assam, dairy farming is often a family-based enterprise where household size significantly influences labour allocation for milking, feeding, fodder collection, and marketing. The average family size was 4.60 members in small category of dairy farming households, 4.61 in medium category of dairy farming households and 5.10 in large category of dairy farming households (Table 4).

The overall family size of the dairy farmer was 4.90 ranging from a minimum of 3 to a maximum of 7 members with a standard deviation of 1.0. The average family size of large and medium dairy farmer was dominance because they were not the first-generation of dairy farmers. They have taken dairy farming as a continuation of their family business from their parents. Medium and large households tended to have greater availability of family labour, which is particularly important in dairy activities such as cleaning the shed, providing feed and water, milking, and grazing. Similar findings were reported by Kumar et al. (2019) and Rahman & Baruah (2021), who observed that dairy farmers with larger families rely more on family labour to reduce production costs. Table 5 represents the different categories of respondents according to family size. Majority (64.2%) of the dairy farms had family size of 5-7 members while only 35.8 percent of the dairy farms had family size up to 4 members in the household. Category wise data shows that majority of the small (52.4%) and large (75.5%) farmers belonged to the category of 5 to 7 members whereas, 54.2 percent medium farmers belonged to family size up to 4 members.

**Challenges and Constraints:** Table 7 represents the management related problems experienced by the dairy farmers of the Kamrup district of Assam. Majority of the dairy farmers (87%) reported that

they faced the problem to manage the dairy farms because of high operational costs. The study also reveals that there is scarcity of skilled labour force (55%).

diseases like FMD and Ticks etc. It is revealed that 63 percent farmers expressed the problem of low milk yield animal, whereas 41 percent farmers expressed that poor quality of semen also effect on

**Table 5. Categorization of respondents according to family size**

Sl. No.	Family Size	Category			Total
		Small	Medium	Large	
1	Up to 4 members	20 (47.6)	32 (54.2)	34 (24.5)	86 (35.8)
2	5 to 7 members	22 (52.4)	27 (45.8)	105 (75.5)	154 (64.2)
Total		42 (100)	59 (100)	139 (100)	240 (100)

**Table 7. Management Related Problems experienced by the Dairy Farmers**

Sl. No.	Reason	Frequency (N=240)	Percentage
1.	High operational costs	209	87
2.	Lack of skilled labour	131	55
3.	Non availability of credit facilities	151	63
4.	Lack of Knowledge about improved dairy farming practices	113	47
5.	Low water profile and irrigation facilities	149	62
6.	Lack of regular health services	117	49
7.	Non availability of green fodder	99	41
8.	No land for cultivation of fodder	56	23

**Table 8. Production Related Problems experienced by the Dairy Farmers**

Sl. No.	Reason	Frequency (N=240)	Percentage
1.	High cost of feed	184	77
2.	High cost of medicine	176	73
3.	Problems of parasitic disease	74	31
4.	Low milk yield animal	150	63
5.	Poor quality of semen	98	41
6.	Climatic variation highly affected the quantity of milk production	44	18

**Table 9. Marketing Related Problems experienced by the Dairy Farmers**

Sl. No.	Reason	Frequency (N=240)	Percentage
1.	Delay in payments from cooperative & consumers	48	20
2.	Non remunerative price of milk	197	82
3.	Lack of transport for marketing of milk	98	41
4.	Distance to main market	111	46
5.	Involvement of middleman	147	61
6.	Competition from established and large units	11	5
7.	Poor extension support from govt	56	23
8.	Unavailability of cold storage	58	24
9.	Unorganized market	103	43

The 63 percent of the farmers have stated that they were not getting easy access to credit facilities for the operation and expansion of the dairy farms. Adequate knowledge of dairy farming is essential for the smooth and efficient operation of dairy farms but 47 percent farmers revealed that there is lack of knowledge about improved dairy farming practices in Kamrup district. It is also revealed that poor knowledge of feeding and health care of some of the small farmers in the district is the cause for the low milk yield of cows in their farms. It is also revealed that 62 percent of the farmers expressed the problem of poor irrigation facilities. The farmers (49%) revealed that lack of regular health services affect them to manage their dairy farms. 41 percent dairy farmers have stated that rearing of crossbreed cows is a challenge for them particularly due to non-availability of green fodder in the winter season, direct and indirect impact of natural calamity like flood. The farmers (23%) revealed that cultivation of highly nutritious green fodder such as napier, sorghum, guinea, maize etc. is almost absent in the region. The production related problems faced by the farmers of Kamrup district is presented in Table 8. It shows that most of the dairy farmers (77%) face the problem because of the high cost of feed which leads to decrease the production. This finding is supported by Kale *et al.* (2013), followed by high cost of medicines (73%) also impacts on the production. The findings is in line with that of Rani *et al.* (2009). The farmers (31%) have also stated that low cost of the production is also because of

the production. It is also found that 18 percent of the farmers faced the problem due to climatic variation like hot and humid climate which highly affect the quantity of milk production and operation of dairy farms.

Table 9 represents the marketing related problems experience by the dairy farmers. Majority of the farmer (82%) stated that the price of milk received from the market was non-remunerative. The farmers (20%) faced the problems because of delay in payments from cooperative and consumers. Some of the small farmers (41%) of Kamrup district were incurring higher transport cost due to distant location of their farm from the market, distant location to main markets expressed by 46 percent dairy farmers. Involvement of middleman as selling agent for milk is one of the most important problems faced by the 61 percent of dairy farmers. Some farmers (23%) feel the need of extension support from the government. Milk being a highly perishable product is required to be processed or cooled as soon as possible after milking. However, to ensure this, there is a need of refrigerated milk silos for storage which are not present at the study area. 24% of farmers said there is a shortage of refrigerated vans and insulated tankers for ferrying the chilled milk to the processing plants. They have to carry this milk to the distant collection centers where there is a cooling facility or else the milk goes waste on delay. The unorganized market competes with the

organized market in relation to prices. A large fraction of the consumers (43%) were still dependent on the informal and unorganized market channels.

## CONCLUSION

This study concludes that dairy farming is an indispensable livelihood activity in Kamrup district of Assam. Livestock is not only a source of income but also provides nutritional support to rural families. However, the practices followed by most farmers remain traditional and under-informed, with minimal reliance on scientific inputs or preventive healthcare. It can be concluded that majority of dairy farmers had high operational cost, high cost of feed and medicine, non-availability of credit facilities, lack of knowledge, involvement of middleman, non remunerative price of milk, low milk yield animal and lack of regular health services as major constraints in adoption of improved dairy management practices. These interconnected challenges collectively limit the productivity, health, and sustainability of rural livestock systems in the region. Addressing these issues requires a multipronged approach that includes better veterinary infrastructure, regular and practical training, effective scheme outreach, and improved access to inputs and medicines. Indigenous knowledge must be respected and scientifically evaluated, while new techniques should be introduced in culturally acceptable formats. If these gaps are systematically addressed, dairy farming can emerge as a strong pillar of rural development and economic resilience in Kamrup district and similar regions.

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