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Comparative analysis of dairy business models existing in Gujarat: Study of milk producers

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Abstract

India is leading on top in the world for total milk production per year. Likewise Gujarat State is also leading state for milk production in the country. "Amul" pattern is well known and accepted by all the states in our country and some of the other countries also. At village level 19522 Milk Co- operative societies, 99 chilling centers and 18 Dairy processing units at district level (Dairy) are functioning in state. State Government has given full support to the Dairy Development through Dairy co-operation movement. Twelve District Co- operative Union have established Thirteen Cattle Feed Factories to produce and supply cattle feed to their members at village level at no profit no loss basis. Total production of cattle feed is 2218119.79 M.T. by above thirteen factories. Twenty Two Co-operative Dairy Unions have total 262.63 Lakh Liter per Day milk processing capacity. Milk production and per capita availability of milk in India is 187.7 (Million Tonnes) and 379 (gms/day) in 2018-19. Gujarat has milk production of 14493 ('ooo tonnes) in 2018-19 and Per Capita Availability of 626 (gms/day) in 2018-19. Gujarat has been a pioneering state in the field of dairy development. Gujarat Cooperative Milk Marketing Federation (GCMMF) has 18 milk unions, 18554 village cooperative societies and 3.6 million members and sales turnover of ₹ 38,542 crore in 2019-20, which is 17 per cent higher than the previous financial year. Mahi Milk Producer Company Limited has 2881 Milk Pooling Points (MPPs) in 2603 villages in its 11 operational districts with membership of 1,16,511 (Annual Report 2017-18).

Keywords: dairy cooperatives, milk producer, problems, suggestions, policy

Introduction

Apart from being an important sector globally, dairying is equally important in developing economies like India, for providing nutrition support, reducing rural poverty, inequity, ensuring food security for millions of rural households, and enhancing economic growth, particularly in rural areas. In the 1950s and 1960s, India was a milk deficit country, depending mostly on imports. In 1965, the government of India established the National Dairy Development Board to direct India's dairy sector development. In 1970, the government launched Operation Flood (OF), the world's largest dairy development programme, whose aim was enhancing milk production in the country. By 1998, India overtook the US to become the largest milk producer in the world.

Gujarat has been a pioneer in the dairy cooperative movement where dairy industry is more organised and efficient as compared to other states. It is one of the largest milk producing states in India with a contribution of 7.24 per cent share to the total milk production. The state has 18,149 milk cooperative societies, 89 chilling centres and 13 dairy processing units. The state government has given full support to dairy development through dairy cooperation movement. Nine district cooperative unions have established cattle feed factories to produce and supply the feed to their members at village level at no-profit and no-loss basis. To help and enhance the cattle feed production, the state government also helps the unions by providing ₹ 45 lakhs as revolving fund. The total cattle feed production by the above nine factories hovers around 1.47 million tonnes. The eighteen cooperative dairy unions in the state have a total milk processing capacity of 182.97 lakh litres per day (LLPD) (DOAH, 2015-16)^[3]. About 42 per cent of the total households in Gujarat are engaged in dairy and animal husbandry activities, which serve as a primary or secondary source of income. Despite most of the districts having active dairy cooperatives and societies, some of them still need a special attention so as to enable them with the wide dairy network (GLPCL, 2015). This research paper discusses the problems faced by milk producers and their expectations.

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Objectives of the study

1. To study profile of respondents.
2. To find out persisting issues (problems) faced by milk producers.
3. To seek expectations from milk producers for increasing their income and make it double by 2021-22
4. To suggest suitable policy interventions to be implemented for dairy industry of Gujarat to have long lasting impact for the future.

Materials and Methods

A study was done between 15th July 2020 to 28th October 2020th in Gujarat state. Research was conducted on 165 dairy farmers of Gujarat State. Multistage sampling technique was followed for selection of district, talukas, villages and respondents. Gujarat state has 33 districts and out of these 23 district were randomly selected for this study. All 165

respondent were divided in 23 District of Gujarat state. So, all 165 dairy farmers were included in the study. Consent of each respondents was taken before the interview, and nature and purpose of study were explained to them. Data collection was carried out by preformed, pre-structured, and pretested online Google form questionnaire by interview method. Data were compiled, tabulated and analyzed to get proper answers for objectives of the study.

The five points on continuum were strongly agree, agree, undecided, disagree and strongly disagree with respective weights of 5, 4, 3, 2, and 1 for the favorable statements and with the respective weights of 1, 2, 3, 4 and 5 for the unfavorable statements. The weights of Likert's technique form of a product and the total score for an individual was the sum of the product. The statistical tools used were frequency and percentage and rank.

Table 1: Selection of District, Taluka, Village and Respondents (n = 165)

Sr. No.	Name of District	Name of Taluka	Name of Villages	No. of Respondents	Total no. of respondent
1	Ahmedabad	Viramgam	Dumana	3	3
2	Amreli	Lathi	Kanchardi	2	3
			Dhasa	1	
3	Anand	Anand	Adas	1	33
			Bedva	2	
			Chikhodara	5	
			Gana	5	
			Hadgud	1	
			Lotiya bhagol	5	
			Mangalपुरa	1	
			Mogar	1	
		Vaghasi	6		
			Anklav	Kahanwadi	
	Borsad	Chuva	1		
	Petlad	Petlad	1		
	Umreth	Umreth	2		
4	Arvalli	Bhiloda	Bhavanpur	5	15
		Dhansura	Antisara	5	
		Modasa	Khambhisar	5	
5	Banaskantha	Dessa	Soyla	1	7
		Dhanera	Bhatram	6	
6	Baruch	Hansot	Shera	5	5
7	Bhavnagar	Palitana	Hanol	1	1
8	Botad	Gadhada	Haripar	10	10
9	Devbhumi dwarka	Jam khambhalia	Fot	2	2
10	Gir somnath	Sutrapada	Solaj	1	1
11	Jamnagar	Jamnagar	Dhutarpur	8	8
12	Kheda	Kapadwanj	Kapadwanj	1	1
13	Mahisagar	Lunawada	Vadhari	2	4
		Santrampr	Gamadi	2	
14	Mehasana	Kheralu	Dalisana	3	10
		Satlasana	Nava Sudasana	1	
		Unja	Maktupur	1	
		Visnagar	Kansarakui	5	
15	Morabi	Halvad	Mayapur	4	4
16	Patan	Radhanpur	Nanapura	3	5
			Mandvi	1	
			Manpura	1	
17	Rajkot	Jam-kandorana	Sanala	9	19
		Jetpur	Mandlikpur	5	
		Vichiya	Asalpur	5	
18	Sabarkantha	Himmatnagar	Jorapur	4	7
		Idar	Dungari	3	
19	Surat	Mahuva	Devasana	2	5
			Mudat	3	
20	Surendranagar	Dhrangadhra	Kankavati	4	13
		Muli	Digasar	1	

		Sayala	Chhadiyali	1	
		Thangadh	Sarsana	4	
		Vadhavan	Khodu	3	
21	Vadosara	Padara	Jalalpura	1	1
22	Valsad	Dharampur	Karanjveri	5	5
23	Tapi	Dholvan	pati	3	3
Total					165

Result and Discussion

Profile of the respondents

Table 2: Distribution of respondents according their age (n = 165)

Sr. No.	Age	Frequency	Percentage
1	18 to 30 Years	12	07.27
2	31 to 50 Years	110	66.67
3	Above 51 Years	43	26.06
Total		165	100.00

Majority (66.67 per cent) of the respondents were found in the 31 to 50 years and was, followed by 26.06 per cent above 51 years age group and rest 07.27 per cent of respondents in 18

to 30 years group. It is inferred that majority of the respondents, belonged to 31 to 50 years age group.

Table 3: Distribution of respondents according their gender (n = 165)

Sr. No.	Gender	Frequency	Percentage
1	Female	17	10.30
2	Male	148	89.70
Total		165	100.00

Majority (89.70 per cent) of the respondents were found in male category and was, followed by 10.30 per cent of the

respondents were found in female category.

Table 4: Distribution of respondents according their education (n = 165)

Sr. No.	Education	Frequency	Percentage
1	Illiterate	16	09.70
2	Primary Education (1 to 7 Std.)	46	27.88
3	Secondary Education (8 to 10 Std.)	44	26.67
4	Higher Secondary Education (11 to 12 Std.)	30	18.18
5	Graduation and above	29	17.58
Total		165	100.00

Slightly less than one third (27.88 per cent) of the respondents had primary level education, and was, followed by 26.67, 18.18 and 17.58 per cent of them had secondary, higher

secondary, and graduation and above level of education respectively. 09.70 per cent of respondents were illiterate.

Table 5: Distribution of respondents according their type of family (n = 165)

Sr. No.	Type of family	Frequency	Percentage
1	Nuclear	75	45.45
2	Joint	90	54.55
Total		165	100.00

More than half (54.55 per cent) of respondents belonged to joint type of family and rest 45.45 per cent of respondents had

nuclear type of family.

Table 6: Distribution of the respondents according their number of family members (n = 165)

Sr. No.	Number of Family Members	Frequency	Percentage
1	Up to 5 Members	89	53.94
2	6 to 8 Members	58	35.15
3	9 to 12 Members	18	10.91
Total		165	100.00

Majority (53.94 per cent) of the respondents had up to 5 members of family, and was followed by 35.15 and 10.91 per

cent of them had 6 to 8 members and 9 to 12 members respectively.

Table 7: Distribution of the respondents according their occupation (n = 165)

Sr. No.	Occupation	Frequency	Percentage
1	Only Animal Husbandry	13	07.88
2	Animal Husbandry + Farming	134	81.21
3	Animal husbandry + Farming + Business	01	00.61
4	Animal Husbandry + Farming + Service	11	06.67
5	Animal Husbandry + Service	6	03.64
Total		165	100.00

Majority (81.21 per cent) of the respondents were engaged in animal husbandry + farming, followed by 07.88, 06.67 and 03.64 per cent of the respondents engaged in only animal

husbandry, animal husbandry + farming + service, animal husbandry + service respectively. Only 00.61 per cent engaged in animal husbandry + farming + business.

Table 8: Distribution of the respondents according their land holding (n = 165)

Sr. No.	Land Holding	Frequency	Percentage
1	land less	04	02.42
2	Marginal (Up to 1.00 ha.)	10	06.06
3	Small (1.1 ha. to 2.00 ha.)	22	13.33
4	Medium (2.1 ha. to 4.00 ha.)	63	38.18
5	Large (above to 4.01 ha.)	66	40.00
Total		165	100.00

Two fifth (40.00per cent) of the respondents had large size of land holding, whereas 38.18, 13.33 and 06.06 per cent of the respondent possessed medium, small and Marginal size of

land holding, respectively. Rest 02.42 per cent of the respondent were landless.

Table 9: Distribution of the respondents according their land type (n = 165)

Sr. No.	Land type	Frequency	Percentage
1	land less	04	02.42
2	Irrigated	148	89.70
3	Non Irrigated	13	07.88
Total		165	100.00

Majority (89.70 per cent) of the respondents had irrigated land and was followed by 07.88 per cent of the respondent's

possess non-irrigated land. Rest 02.42 per cent of the respondent were landless.

Table 10: Distribution of the respondents according their no. of animal holding (n = 165)

Sr. No.	No. of Animal Holding	Frequency	Percentage
1	Up to 2 Animals	28	16.97
2	3 to 4 Animals	55	33.33
3	5 to 6 Animals	32	19.39
4	7 to 8 Animals	23	13.94
5	Above 8 Animals	27	16.36
Total		165	100.00

Slightly more than one third (33.33 per cent) of the respondents possess 3 to 4 animals and was followed by 19.39, 16.97 and 16.36 per cent of the respondent possessing

5 to 6 animals, up to 2 animals and above 8 animals, respectively. Rest 13.94 per cent of the respondent possess 7 to 8 animals.

Table 11: Distribution of the respondents according to herd size (n = 165)

Sr. No.	Heard size	No. of animal	Percentage
1	Indigenous Cow (Adult Milch)	123	12.60
2	Indigenous cow (Adult Dry)	39	04.00
3	Indigenous Heifer (More than 1 Year but yet not calved)	38	03.89
4	Indigenous Calf (Less than a 1 Year)	47	04.82
5	Indigenous Bullock	18	01.84
6	Cross-Bred (Adult Milch)	101	10.35
7	Cross-Bred (Adult Dry)	26	02.66
8	Cross-Bred Heifer (More than 1 Year but yet not calved)	28	02.87
9	Cross-Bred Calf (Less than a 1 Year)	41	04.20
10	Cross-Bred Bullock	05	00.51
11	Buffalo (Adult Milch)	257	26.33
12	Buffalo (Adult Dry)	83	08.50
13	Buffalo Heifer (More than 1 Year but yet not calved)	68	06.97

14	Buffalo Calf (Less than a 1 Year)	89	09.12
15	Buffalo Bullock	13	01.33
Total		976	100

Following is the animal holding pattern by respondents: indigenous cow (adult milch) 12.60%, indigenous cow (adult dry) 04.00%, indigenous heifer (more than 1 year but yet not calved) 03.89%, indigenous calf (less than a year) 04.82%, indigenous bullock 01.84%, cross-bred (adult milch) 10.35%, cross-bred (adult dry) 02.66%, cross-bred heifer (more than 1 year but yet not calved) 02.87%, cross-bred calf (less than a

1 year) 04.20%, cross-bred bullock 00.51%, Buffalo (Adult Milch) 26.33, Buffalo (Adult Dry) 08.50%, Buffalo Heifer (More than 1 Year but yet not calved) 06.97%, Buffalo Calf (Less than a 1 Year) 09.12%, Buffalo Bullock 01.33%.

Problems Pricing of milk

Table 12: Do you think that the price offered for the milk is low (n=165)

Sr. No	Price offered for the milk is low	Frequency	Percentage
1	No problem	26	15.76
2	Low severity	31	18.79
3	Moderate	43	26.06
4	High	65	39.39
Total		165	100.00

Nearly two fifth (39.39 per cent) of the respondent had high problem with offered price, followed by 26.06 and 18.79 per cent of the respondent had moderate to low severity problem

respectively. 15.76 per cent respondent had no problem with offered milk price.

Table 13: Do you face problem of variation in fat and thereby less price obtained by you while selling milk (n = 165)

Sr. No	Variation in fat and thereby less price obtained by you while selling milk	Frequency	Percentage
1	No problem	19	11.52
2	Low severity	40	24.24
3	Moderate	45	27.27
4	High	61	36.97
Total		165	100.00

Less than two fifth (36.97 per cent) of the respondent had high problem with variation in fat and thereby less price obtained by while selling milk, followed by 27.27 and 24.24 per cent of the respondent had moderate to low severity problem respectively. 11.52 per cent respondent had no

problem with variation in fat and thereby less price obtained by while selling milk.

Animal Purchase

Table 14: Do you face problem of lack availability of milch animals in nearby area / town / villages (n = 165)

Sr. No	Lack availability of milch animals in nearby area/town/ villages	Frequency	Percentage
1	No problem	49	29.70
2	Low severity	47	28.48
3	Moderate	44	26.67
4	High	25	15.15
Total		165	100.00

Less than one third (29.70 per cent) of the respondent had no problem with lack of availability of milch animals in nearby area/town/villages, 28.48 and 26.67 per cent of the respondent

had low severity to moderate problem respectively. 15.15 per cent respondent had high problem with lack of availability of milch animals in nearby area/town/villages.

Table 15: Do you face problem of "False claim by seller of milch animals (n = 165)

Sr. No	False claim by seller of milch animals	Frequency	Percentage
1	No problem	56	33.94
2	Low severity	36	21.82
3	Moderate	51	30.91
4	High	22	13.33
Total		165	100.00

Slightly more than one third (33.94 per cent) of the respondent had no problem with false claim by seller of milch animals, 30.91 and 21.82 per cent of the respondent had

moderate to low severity problem respectively. 13.33 per cent respondent had high problem with false claim by seller of milch animals.

Table 16: Do you face problem due to high cost of milch animals (n = 165)

Sr. No	High cost of milch animals	Frequency	Percentage
1	No problem	26	15.76
2	Low severity	30	18.18
3	Moderate	38	23.03
4	High	71	43.03
Total		165	100.00

More than two-fifth (43.03 per cent) of the respondent had high problem with high cost of milch animals, 23.03 and 18.18 per cent of the respondent had moderate to low severity problem respectively. 15.76 per cent respondent had no

problem with high cost of milch animals.

Yield Related

Table 17: Do you face problem of limited availability of water (n=165)

Sr. No	Limited availability of water	Frequency	Percentage
1	No problem	79	47.88
2	Low severity	29	17.58
3	Moderate	37	22.42
4	High	20	12.12
Total		165	100.00

Nearly half (47.88 per cent) of the respondent had no problem with limited availability of water, 22.42 and 17.58 per cent of the respondent had moderate to low severity problem

respectively. 12.12 per cent respondent had high problem with limited availability of water.

Table 18: Do you face problem of low average milk yield of milch animals (n=165)

Sr. No	Low average milk yield of milch animals	Frequency	Percentage
1	No problem	20	12.12
2	Low severity	25	15.15
3	Moderate	46	27.88
4	High	74	44.85
Total		165	100.00

More than two-fifth (44.85 per cent) of the respondent had high problem with low average milk yield of milch animals, 27.88 and 15.15 per cent of the respondent had moderate to low severity problem respectively. 12.12 per cent respondent

had no problem low average milk yield of milch animals.

Feed and Fodder

Table 19: Do you face problem of unavailability of green fodder throughout the year (n=165)

Sr. No	Unavailability of green fodder throughout the year	Frequency	Percentage
1	No problem	64	38.79
2	Low severity	39	23.64
3	Moderate	40	24.24
4	High	22	13.33
Total		165	100.00

Less than two-fifth (38.79 per cent) of the respondent had no problem with unavailability of green fodder throughout the year, 24.24 and 23.64 per cent of the respondent had moderate

to low severity problem respectively. 13.33 per cent respondent had high problem with unavailability of green fodder throughout the year.

Table 20: Do you face problem of high cost of green fodder (n = 165)

Sr. No	High cost of green fodder	Frequency	Percentage
1	No problem	54	32.73
2	Low severity	39	23.64
3	Moderate	46	27.88
4	High	26	15.76
Total		165	100.00

Slightly less than one-third (32.73 per cent) of the respondent had no problem with high cost of green fodder, 27.88 and 23.64 per cent of the respondent had moderate to low severity

problem respectively. 15.76 per cent respondent had high problem with high cost of green fodder.

Table 21: Do you face problem of unavailability of cattle feed throughout the year (n = 165)

Sr. No	Unavailability of cattle feedthrough out the year	Frequency	Percentage
1	No problem	61	36.97
2	Low severity	48	29.09
3	Moderate	40	24.24
4	High	16	09.70
Total		165	100.00

More than one-third (36.67 per cent) of the respondent had no problem with unavailability of cattle feed throughout the year, 29.09 and 24.24 per cent of the respondent had low severity to

moderate problem respectively. 09.70 per cent respondent had high problem with high cost of green fodder.

Table 22: Do you face problem of high cost of cattle feed and mineral mixtures (n = 165)

Sr. No	High cost of cattle feed and mineral mixtures	Frequency	Percentage
1	No problem	29	17.58
2	Low severity	30	18.18
3	Moderate	39	23.64
4	High	67	40.61
Total		165	100.00

Slightly more than two-fifth (40.61 per cent) of the respondent had high problem with high cost of cattle feed and mineral mixtures, 23.64 and 18.18 per cent of the respondent

had moderate to low severity problem respectively. 17.58 per cent respondent had no problem with high cost of cattle feed and mineral mixtures.

Table 23: Do you face problem lack of "Gauchar land" for grazing of cattle's (n = 165)

Sr. No	Lack of "Gauchar land" for grazing of cattle's	Frequency	Percentage
1	No problem	62	37.58
2	Low severity	35	21.21
3	Moderate	40	24.24
4	High	28	16.97
Total		165	100.00

Nearly two-fifth (37.58 per cent) of the respondent had no problem with lack of "gauchar land" for grazing of cattle's, 24.24 and 21.21 per cent of the respondent had moderate to low severity problem respectively. 16.97 per cent respondent

had high problem with lack of "gauchar land" for grazing of cattle's.

Veterinary & Healthcare

Table 24: Do you face problem of non-availability of veterinary hospitals / dispensary in nearby area (n = 165)

Sr. No	Non-availability of veterinary hospitals / dispensary in nearby area	Frequency	Percentage
1	No problem	39	23.64
2	Low severity	47	28.48
3	Moderate	53	32.12
4	High	26	15.76
Total		165	100.00

Slightly less than one third (32.12 per cent) of the respondent had Moderate problem with non-availability of veterinary hospitals/dispensary in nearby area, 28.48 and 23.64 per cent

of the respondent had low severity to no problem respectively. 15.76 per cent respondent had high problem with non-availability of veterinary hospitals/dispensary in nearby area.

Table 25: Do you face problem of high incidence of diseases in animals (n = 165)

Sr. No	High incidence of diseases in animals	Frequency	Percentage
1	No problem	37	22.42
2	Low severity	58	35.15
3	Moderate	47	28.48
4	High	23	13.94
Total		165	100.00

More than one third (35.15 per cent) of the respondent had low severity problem with high incidence of diseases in animals, 28.48 and 22.42 per cent of the respondent had

moderate to no problem respectively. 13.94 per cent respondent had high problem with high incidence of diseases in animals.

Table 26: Do you face problem of high cost of veterinary services (n = 165)

Sr. No	High cost of veterinary services	Frequency	Percentage
1	No problem	30	18.18
2	Low severity	35	21.21
3	Moderate	43	26.06
4	High	57	34.55
Total		165	100.00

More than one third (34.55 per cent) of the respondent had high problem with high cost of veterinary services, 26.06 and 21.21 per cent of the respondent had moderate to low severity respectively. 18.18 per cent respondent had no problem with

high cost of veterinary services.

AI Services/ Natural Services

Table 27: Do you face problem of non-availability of semen at AI centers (n = 165)

Sr. No	Non-availability of semen at AI centers	Frequency	Percentage
1	No problem	78	47.27
2	Low severity	30	18.18
3	Moderate	37	22.42
4	High	20	12.12
Total		165	100.00

Slightly less than half (47.27 per cent) of the respondent had no problem with non-availability of semen at AI centers, 22.42 and 18.18 per cent of the respondent had moderate to

low severity respectively. 12.12 per cent respondent had high problem with non-availability of semen at AI centers.

Table 28: Do you face problem of unavailability of high genetic merit bull for natural services (n = 165)

Sr. No	Unavailability of high genetic merit bull for natural services	Frequency	Percentage
1	No problem	55	33.33
2	Low severity	40	24.24
3	Moderate	36	21.82
4	High	34	20.61
Total		165	100.00

Slightly than one third (33.33 per cent) of the respondent had no problem with unavailability of high genetic merit bull for natural services, 24.24 and 21.82 per cent of the respondent

had low severity to moderate respectively. 20.61 per cent respondent had high problem with unavailability of high genetic merit bull for natural services.

Table 29: Do you face problem of poor conception rate through AI (n = 165)

Sr. No	Poor conception rate through AI	Frequency	Percentage
1	No problem	47	28.48
2	Low severity	48	29.09
3	Moderate	40	24.24
4	High	30	18.18
Total		165	100.00

Less than one third (29.09 per cent) of the respondent had low severity problem with poor conception rate through AI, 28.48 and 24.24 per cent of the respondent had no problem to moderate respectively. 18.18 per cent respondent had high

problem with poor conception rate through AI.

Training & Extension

Table 30: Do you face problem of lack of training for good AH practices on scientific lines (n = 165)

Sr. No	Lack of training for good AH practices on scientific lines	Frequency	Percentage
1	No problem	62	37.58
2	Low severity	46	27.88
3	Moderate	35	21.21
4	High	22	13.33
Total		165	100.00

Nearly two fifth (37.58 per cent) of the respondent had no problem with lack of training for good AH practices on scientific lines, 27.88 and 21.21 per cent of the respondent had

low severity to moderate respectively. 13.33 per cent respondent had high problem with lack of training for good AH practices on scientific lines.

Membership (VDCS, MPC, Private dairy)**Table 31:** Do you think price offered to you for your milk is less compare to competitors (n = 165)

Sr. No	Price offered to you for your milk is less compare to competitors	Frequency	Percentage
1	No problem	56	33.94
2	Low severity	39	23.64
3	Moderate	40	24.24
4	High	30	18.18
Total		165	100.00

Slightly more than (33.94 per cent) of the respondent had no problem with price offered to you for your milk is less compare to competitors, 24.24 and 23.64 per cent of the

respondent had moderate to low severity respectively. 18.18 per cent respondent had high problem with price offered to you for your milk is less compared to competitors.

Table 32: Do you think there are governance issues (More Political than profit orientation) with the model you are attached with (n = 165)

Sr. No	Governance issues (More Political than profit orientation) with the model you are attached with	Frequency	Percentage
1	No problem	32	19.39
2	Low severity	39	23.64
3	Moderate	60	36.36
4	High	34	20.61
Total		165	100.00

Slightly more than (36.36 per cent) of the respondent had moderate problem with governance issues (more political than profit orientation) with the model they are attached with, 23.64 and 20.61 per cent of the respondent low severity to high problem respectively. 19.39 per cent respondent had no

problem with governance issues (more political than profit orientation) with the model they are attached with.

Socio, Psychological and Profitability**Table 33:** Do you think that next generation of dairy farmers are not interested in dairy business (n = 165)

Sr. No	Next generation of dairy farmers are not interested in dairy business	Frequency	Percentage
1	No problem	16	09.70
2	Low severity	20	12.12
3	Moderate	40	24.24
4	High	89	53.94
Total		165	100.00

More than half (53.94 per cent) of the respondent had high problem with question of 'next generation of dairy farmers are not interested in dairy business?', 24.24 and 12.12 per cent of the respondent moderate to low severity problem

respectively. 09.70 per cent respondent had no problem with next generation of dairy farmers are not interested in dairy business.

Table 34 Do you think that keeping 1 or 2 animals is now a problem rather than a profitable option (n = 165)

Sr. No	Keeping 1 or 2 animals is now a problem rather than a profitable option	Frequency	Percentage
1	No problem	32	19.39
2	Low severity	32	19.39
3	Moderate	57	34.55
4	High	44	26.67
Total		165	100.00

More than one third (34.55 per cent) of the respondent had moderate problem with question of 'keeping 1 or 2 animals is now a problem rather than a profitable option?', 26.67 and 19.39 per cent of the respondent have high to low severity

problem respectively. 19.39 per cent respondent had no problem with keeping 1 or 2 animals is now a problem rather than a profitable option.

Table 35: Expectations/suggestions to overcome the problems (n = 165)

Sr. No	Expectations/suggestions to overcome the problems	Frequency	Percentage	Rank
1	Government institutions should make facility for rearing good milch animals that can be make available for selling to milk producers at appropriate price.	125	75.76	2
2	Cattle feed should be subsidized.	105	63.64	5
3	Electricity supply problem	95	57.58	6
4	Everyday increase the maintained cost and reduce profit level	68	41.21	9
5	focus on breed improvement which has low numbers of animal	56	33.94	11
6	Give proper training for the diet of animal in different age and also special for pregnant cow.	61	36.97	10
7	Some scheme should be designed for small dairy farmers, it also encourage us and help to grow.	122	73.94	3

8	The price of dry fodder is very high and the concentrate feed and mineral mixture price is very high but the milk price is low	109	66.06	4
9	Give the perfect price of selling milk.	78	47.27	8
10	Give the good service of veterinary.	87	52.73	7
11	To spread awareness about milch animal and provide good service at animal health center.	45	27.27	12
12	Good medical service, and veterinary service, and high price of milk	135	81.82	1

As seen from the Table the expectations/suggestions to overcome the problems: Good medical service, and veterinary service and high price of milk (81.82 per cent) was ranked 1st, Government institutions should make facility for rearing good milch animals that can be make available for selling to milk producers at appropriate price 75.76 per cent was ranked 2nd, some scheme should be designed for small dairy farmers, it also encourage us and help to grow 73.94 per cent was ranked 3rd, the price of dry fodder is very high and the concentrate feed and mineral mixture price is very high but the milk price is low 66.06 per cent was ranked 4th, cattle feed should be subsidized 63.64 per cent was ranked 5th, electricity supply

problem 57.58 per cent was ranked 6th, give the good service of veterinary 52.73 per cent was ranked 7th, give the perfect price of selling milk 47.27 per cent was ranked 8th, everyday increase the maintained cost and reduce profit level 41.21 per cent was ranked 9th, give proper training for the diet of animal in different age and also special for pregnant cow 36.97 per cent was ranked 10th, focus on breed improvement which has low numbers of animal 33.94 per cent was ranked 11th, to spread awareness about milch animal and provide good service at animal health center 27.27 per cent was ranked 12th.

Part: Satisfaction level with services of cooperative

Table 36: Distribution of the respondents according their satisfaction with veterinary camp services (n = 165)

Sr. No	Veterinary camp	Frequency	Percentage
1	Not satisfied	18	10.91
2	Low Satisfaction	25	15.15
3	Moderately Satisfied	49	29.70
4	Highly Satisfied	73	44.24
Total		165	100.00

More than two fifth (44.24 per cent) of the respondent were highly satisfied with veterinary camp, 29.70 and 15.15 per cent of the respondent were moderately to low satisfied

respectively. Rest 10.91 per cent respondent were not satisfied with veterinary camp.

Table 37: Distribution of the respondents according their satisfaction with Insurance schemes for animals (n = 165)

Sr. No	Insurance schemes for animals	Frequency	Percentage
1	Not satisfied	52	31.52
2	Low Satisfaction	47	28.48
3	Moderately Satisfied	38	23.03
4	Highly Satisfied	28	16.97
Total		165	100.00

Less than one third (31.52 per cent) of the respondent were not satisfied with insurance schemes for animals, 28.48 and 23.03 per cent of the respondent were low to moderately

satisfied respectively. Rest 16.97 per cent respondent were highly satisfied with insurance schemes for animals.

Table 38: Distribution of the respondents according their satisfaction with Animal Husbandry training programme (n = 165)

Sr. No	Animal Husbandry training programme	Frequency	Percentage
1	Not satisfied	21	12.73
2	Low Satisfaction	28	16.97
3	Moderately Satisfied	49	29.70
4	Highly Satisfied	67	40.61
Total		165	100.00

Slightly more than two fifth (40.61 per cent) of the respondent were highly satisfied with Animal Husbandry training programme, 29.70 and 16.97 per cent of the respondent were

moderately to low satisfied respectively. Rest 12.73 per cent respondent were not satisfied with Animal Husbandry training programme.

Table 39: Distribution of the respondents according to their satisfaction with Facility of AI (n = 165)

Sr. No	Facility of AI	Frequency	Percentage
1	Not satisfied	26	15.76
2	Low Satisfaction	40	24.24
3	Moderately Satisfied	32	19.39
4	Highly Satisfied	67	40.61
Total		165	100.00

Slightly more than two fifth (40.61 per cent) of the respondent were highly satisfied with facility of AI, 24.24 and 19.39 per cent of the respondent were low to moderately satisfied

respectively. Rest 15.76 per cent respondent had not satisfied with facility of AI

Table 40: Distribution of the respondents according to their satisfaction with Fodder seed distribution (n = 165)

Sr. No	Fodder seed distribution	Frequency	Percentage
1	Not satisfied	25	15.15
2	Low Satisfaction	30	18.18
3	Moderately Satisfied	37	22.42
4	Highly Satisfied	73	44.24
Total		165	100.00

Slightly more than two fifth (44.24 per cent) of the respondent were highly satisfied with fodder seed distribution, 22.42 and 18.18 per cent of the respondent were moderate to low

satisfied respectively. Rest 15.15 per cent respondent were not satisfied with fodder seed distribution.

Table 41: Distribution of the respondents according to their satisfaction with Cattle feed distribution (n = 165)

Sr. No	Cattle feed distribution	Frequency	Percentage
1	Not satisfied	22	13.33
2	Low Satisfaction	32	19.39
3	Moderately Satisfied	39	23.64
4	Highly Satisfied	72	43.64
Total		165	100.00

Slightly more than two fifth (43.64 per cent) of the respondent were highly satisfied with cattle feed distribution, 23.64 and 19.39 per cent of the respondent were moderate to low

satisfied respectively. Rest 13.33 per cent respondent had not satisfied with cattle feed distribution.

Table 42: Distribution of the respondents according to their satisfaction with Life insurance policy (n = 165)

Sr. No	Life insurance policy	Frequency	Percentage
1	Not satisfied	60	36.36
2	Low Satisfaction	32	19.39
3	Moderately Satisfied	43	26.06
4	Highly Satisfied	30	18.18
Total		165	100.00

Slightly more than one third (36.36 per cent) of the respondent were not satisfied with life insurance policy, 26.06 and 19.39 per cent of the respondent were moderate to low

satisfied respectively. Rest 18.18 per cent respondent were highly satisfied with life insurance policy.

Table 43: Distribution of the respondents according to their satisfaction with Ration Balancing Program (n = 165)

Sr. No	Ration Balancing Program	Frequency	Percentage
1	Not satisfied	24	14.55
2	Low Satisfaction	35	21.21
3	Moderately Satisfied	45	27.27
4	Highly Satisfied	61	36.97
Total		165	100.00

More than one third (36.97 per cent) of the respondent were highly satisfied with Ration Balancing Program, 27.27 and 21.21 per cent of the respondent were moderate to low

satisfied respectively. Rest 14.55 per cent respondent were not satisfied with Ration Balancing Program.

Table 44: Distribution of the respondents according to their satisfaction with Animal Purchase Support / Subsidy (n = 165)

Sr. No	Animal Purchase Support / Subsidy	Frequency	Percentage
1	Not satisfied	27	16.36
2	Low Satisfaction	39	23.64
3	Moderately Satisfied	42	25.45
4	Highly Satisfied	57	34.55
Total		165	100.00

More than one third (34.55 per cent) of the respondent were highly satisfied with animal purchase support / subsidy, 25.45 and 23.64 per cent of the respondent were moderate to low

satisfied respectively. Rest 16.36 per cent respondent were not satisfied with animal purchase support / subsidy.

Table 45: Distribution of the respondents according their satisfaction with Support during drought/Flood (n = 165)

Sr. No	Support during drought / Flood	Frequency	Percentage
1	Not satisfied	30	18.18
2	Low Satisfaction	34	20.61
3	Moderately Satisfied	45	27.27
4	Highly Satisfied	56	33.94
	Total	165	100.00

Slightly than one third (33.94 per cent) of the respondent were highly satisfied with support during drought / flood, 27.27 and 20.61 per cent of the respondent were moderate to low

satisfied respectively. Rest 18.18 per cent respondent were not satisfied with support during drought/flood.

Table 46: Should India allow import of cheap milk and milk products (n = 165)

Sr. No	Should India allow import of cheap milk and milk products	Frequency	Percentage
1	Yes	38	23.03
2	No	127	76.97
	Total	165	100.00

Majority (76.97 per cent) of the respondents had answered no about Should India allow import of cheap milk and milk

products. 23.03 per cent of the respondent answered yes.

Table 47: Reason for India to allow import of cheap milk and milk products (n = 165)

Sr. No	Give specific reasons for your above answer	Frequency	Percentage
1	India have more milk quantity than the people	28	16.97
2	VDCS can improve and enhance their work	78	47.27
3	If india imports from foreign then indian farmers will not get sufficient price of their milk	97	58.79
4	It will make us bound to sell our milk at low prices. Thus loss.	46	27.88
5	India produce more milk, that's why it produce more product, so India should export to other countries, so we can get more profit	25	15.15
6	We are producing high amount of milk and we want more profit from other countries	20	12.12
7	Some local milk producer's life only depended on income by animal husbandry	36	21.82

Following are the response percentage with regard to question of reasons for allowing import of cheap milk and milk products: If India imports from foreign then Indian farmers will not get sufficient price of their milk 58.79 per cent, VDCS can improve and enhance their work 47.27 per cent, It will make us bound to sell our milk at low prices thus loss 27.88 per cent, Some local milk producer's life only depended

on income by animal husbandry 21.82 per cent, India have more milk quantity than the people 16.97 per cent, India produce more milk, that's why it produce more product, so India should export to other countries, so we can get more profit 15.15 per cent, We are producing high amount of milk and we want more profit from other countries 12.12 per cent.

Table 48: Suggestions for increasing your income and make it double by the year 2021-22 (n = 165)

Sr. No	Suggestions	Frequency	Percentage	Rank
1	System for purchasing dung at good price by dairy cooperatives.	98	59.39	4
2	Subsidy for animal purchase at lowest cost	121	73.33	2
3	Increase export of milk and milk products	34	20.61	11
4	Providing good quality of feed and fodder	145	87.88	1
5	Cooperative dairy should give us more price/fat	75	45.45	7
6	Give proper training to farmers and workers.	89	53.94	5
7	Increase rate and policy for Animal	56	33.94	9
8	Nature farming and increase price of milk	80	48.48	6
9	New products development and high price of milk and low cost service	45	27.27	10
10	Provide gauchar land or reduced the price of cattle feed.	112	67.88	3
11	Ration balancing programmes and increase price of milk	69	41.82	8
12	Scientific dairy farming	28	16.97	12

The suggestions given by the respondents were: Providing good quality of feed and fodder 87.88 per cent was ranked 1st, subsidy for animal purchase at lowest cost 73.33 per cent was ranked 2nd, provide gauchar land or reduced the price of cattle feed 67.88 per cent was ranked 3rd, system for purchasing dung at good price by dairy cooperatives 59.39 per cent was ranked 4th, give proper training to farmers and workers 53.94 per cent was ranked 5th, nature farming and increase price of

milk 48.48 per cent was ranked 6th, cooperative dairy should give us more price/fat 45.45 per cent was ranked 7th, ration balancing programmes and increase price of milk 41.82 per cent was ranked 8th, increase rate and policy for animal 33.94 per cent was ranked 9th, new products development and high price of milk and low cost service 27.27 per cent was ranked 10th, increase export of milk and milk products 20.61 per cent was ranked 11th and scientific dairy farming 12th.

Table 49: Suggest suitable policy interventions to be implemented by Government with respect to dairy industry

Sr. No	Suggestions suitable policy
1	Animal loan.
2	Animal training program regarding different dairy farming aspects.
3	Arrange animal fair.
4	Awareness for AI Technology.
5	Each year government give the feed subsidy.
6	Awareness about subsidy by camp (Animals, technology, feed & fodder).
7	Moderate price in concentrate and minerals.
8	Quality fodder seeds should be available easily at village cooperative.
9	Green fodder availability & silage production.
10	Policy should be designed for small dairy farmers.
11	Provide the some milking machine by government subsidy.
12	Regularly health survey of animal.
13	semen should be provided for buffaloes, indigenous cows (Gir, Kankrej)
14	Stop privatization

Major suggestion for suitable policy interventions to be implemented by Government with respect to dairy industry were: Animal loan, animal training program regarding different dairy farming aspects, arrange animal fair, awareness for AI technology, each year government give the feed subsidy, awareness about subsidy by camp (animals, technology, feed & fodder), moderate price in concentrate and minerals, quality fodder seeds should be available easily at village cooperative, green fodder availability & silage production, policy should be designed for small dairy farmers, provide the some milking machine by government subsidy, regularly health survey of animal, semen should be provided for buffaloes, indigenous cows (Gir, Kankrej) and stop privatization.

Conclusion

Profile

Majority (66.67 percent) of the respondents were found in the age group of 31 to 50 years, 89.70 percent of the respondents were found in male category, 27.88 percent of the respondents had primary level education, 54.55 percent of respondents belonged to joint type of family, 53.94 percent of the respondents had up to 5 members of family, 81.21 percent of the respondents were engaged in animal husbandry + farming, 40.00 percent of the respondents had large size of land holding, 89.70 percent of the respondents had irrigated land, 33.33 percent of the respondents possess 3 to 4 animals, respondent possessing indigenous cow (adult milch) were 12.60%, cross-bred (adult milch) were 10.35% and buffalo (adult milch) were 26.33%.

Problems

- Pricing of milk:** Slightly less than two fifth (39.39 percent) of the respondent had high problem with offered price and (36.97 percent) of the respondent had high problem with variation in fat and thereby less price obtained by while selling milk.
- Animal Purchase:** Less than one third (29.70 percent) of the respondent had no problem with lack availability of milch animals in nearby area/town/villages, 33.94 percent of the respondent had no problem with false claim by seller of milch animals and 43.03 percent of the respondent had high problem with high cost of milch animals.
- Yield related:** Nearly half (47.88 per cent) of the respondent had no problem with limited availability of water and 44.85 per cent of the respondent had high problem with low average milk yield of milch animals.

- Feed & Fodder:** Less than two-fifth (38.79 percent) of the respondent had no problem with unavailability of green fodder throughout the year, 32.73 percent of the respondent had no problem with high cost of green fodder, 36.67 percent of the respondent had no problem with unavailability of cattle feedthrough out the year, 40.61 percent of the respondent had high problem with high cost of cattle feed and mineral mixtures and 37.58 percent of the respondent had no problem with lack of "gauchar land" for grazing of cattle's.
- Veterinary & Healthcare:** Slightly less than one third (32.12 percent) of the respondent had moderate problem with non-availability of veterinary hospitals/dispensary in nearby area, 35.15 percent of the respondent had low severity problem with high incidence of diseases in animals and 34.55 percent of the respondent had high problem with high cost of veterinary services.
- AI services/Natural services:** Slightly less than half (47.27 percent) of the respondent had no problem with non-availability of semen at AI centers, 33.33 percent of the respondent had no problem with unavailability of high genetic merit bull for natural services and 29.09 percent of the respondent had low severity problem with poor conception rate through AI.
- Training & Extension:** Nearly two fifth (37.58 percent) of the respondent had no problem with lack of training for good AH practices on scientific lines.
- Membership (VDCS, MPC, Private Dairy):** Slightly more than (33.94 percent) of the respondent had no problem with price offered to them for their milk is less compared to competitors and 36.36 percent of the respondent had moderate problem with governance issues (more political than profit orientation) with the model they are attached with.
- Socio, Psychological and Profitability:** More than half (53.94 percent) of the respondent had high problem with 'next generation of dairy farmers are not interested in dairy business' and 34.55 percent of the respondent had moderate problem 'with keeping 1 or 2 animals is now a problem rather than a profitable option'.

Expectations / suggestions to overcome the problems

The major expectations/ suggestions as endorsed by the respondents to overcome their problems: Good medical service, and veterinary service and high price of milk (81.82 per cent) was ranked 1st, Government institutions should make facility for rearing good milch animals that can be make available for selling to milk producers at appropriate price

(75.76 percent) was ranked 2nd, some scheme should be designed for small dairy farmers, it also encourage us and help to grow (73.94 percent) was ranked 3rd, the price of dry fodder is very high and the concentrate feed and mineral mixture price is very high but the milk price is low (66.06 percent) was ranked 4th, cattle feed should be subsidized 63.64 per cent was ranked 5th.

Satisfaction level with services of cooperative

More than two fifth (44.24 percent) of the respondent were highly satisfied with veterinary camp, 31.52 percent of the respondent were not satisfied with insurance schemes for animals, 40.61 percent of the respondent were highly satisfied with Animal Husbandry training programme, 40.61 percent of the respondent were highly satisfied with facility of AI, 44.24 percent of the respondent were highly satisfied with fodder seed distribution, 43.64 percent of the respondent were highly satisfied with cattle feed distribution, 36.36 percent of the respondent were not satisfied with life insurance policy, 36.36 percent of the respondent were not satisfied with life insurance policy, 36.97 percent of the respondent were highly satisfied with Ration Balancing Program, 34.55 percent of the respondent were highly satisfied with animal purchase support / subsidy and 33.94 percent of the respondent were highly satisfied with support during drought / flood.

India allow import of cheap milk and milk products

Majority (76.97 percent) of the respondents had answered no about India allowing import of cheap milk and milk products and reason was if India imports from foreign then, Indian farmers will not get sufficient price of their milk (58.79 per cent), VDCS can improve and enhance their work (47.27 percent), It will make us bound to sell our milk at low prices thus loss (27.88 percent), Some local milk producer's life only depended on income by animal husbandry (21.82 percent).

Suggestions for increasing your income and make it double by the year 2021-22

Providing good quality of feed and fodder (87.88 percent) was ranked 1st, subsidy for animal purchase at lowest cost (73.33 percent) was ranked 2nd, provide gauchar land or reduced the price of cattle feed (67.88 percent) was ranked 3rd, system for purchasing dung at good price by dairy cooperatives (59.39 percent) was ranked 4th, give proper training to farmers and workers (53.94 percent) was ranked 5th.

Suggest suitable policy interventions to be implemented by Government with respect to dairy industry

Following suggestions were given by respondents: Animal loan, animal training program regarding different dairy farming aspects, arrange animal fair, awareness for AI technology, each year government give the feed subsidy, awareness about subsidy by camp (animals, technology, feed & fodder), moderate price in concentrate and minerals, quality fodder seeds should be available easily at village cooperative, green fodder availability & silage production, policy should be designed for small dairy farmers, provide the some milking machine by government subsidy, regularly health survey of animal, semen should be provided for buffaloes, indigenous cows (Gir, Kankrej) and stop privatization.

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