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Abbreviations

AI	–	Artificial Insemination
CMP	–	Clean Milk Production
DCS	–	Dairy Cooperative Societies
EIAs	–	End Implementing Agencies
FGDs	–	Focus Group Discussions
HGM	–	High Genetic Merit
ICT	–	Information and Communications Technology
MIS	–	Management Information System
NDDB	–	National Dairy Development Board
NDP I	–	National Dairy Plan Phase I
OBC	–	Other Backward Class
PDO	–	Project Development Objectives
PMU	–	Project Management Unit
SC	–	Scheduled Caste
SOPs	–	Standard Operating Procedures
ST	–	Scheduled Tribe
VBMPs	–	Village Based Milk Procurement System

Acknowledgments



This is a report of the research project on “Understanding the Existing Knowledge / Skill Level and Attitude / Motivation of Rural Youth towards Dairying as an Employment Activity in NDP I Intervention Villages’ funded by the National Dairy Development Board (NDDB), Anand under NDP I project. It provides the and understanding of the existing knowledge / skill level and willingness of rural youth with respect to taking up of dairying and alternate sources of livelihoods. The study also provides insights on personal aspirations, social influences, gender norms, which are the constraints and of influence rural youth’s perceptions about of dairying. Further, it explores the level of acceptance among rural youths to become agriculture / dairy entrepreneur and accordingly recommends some initiatives that could be provided by the dairy sector to create the incentives for increased rural youth employment and entrepreneurship in dairying. We are grateful to the NDDB for providing this opportunity asking us to undertake do this study.

A team of young researchers have made significant contributions toward survey implementation, quantitative and qualitative data collection, data entry, and analysis. This acknowledgement cannot be concluded without expressing appreciation for the hard work put in by the young researchers including Abhishek, Abinash Jena, Ajay Kumar, Alka Kumari, Arundhati Kumari, Harish Kumar, Mansi Verma, Meenakshi Sharma, Monali Kumari, Nikita Assati, Rajeev Sharma, Rakesh Kumar, Renu Sain, Ruby A Singh, Sandip Surwade, Saroj Kumar, Spandan Bhanjadeo, Stella George, Sunil Rajpal, Tarique Ajiz, Varun Yadav. We are also thankful to the Director of the Institute, Prof. Manoj Panda as well as Finance, Administrative Academic Section of the Institute for their co-operation without which this work would have not been completed.

Last but not the least, credit goes to all the dairy farmers who spent their time and responded to the lengthy questionnaires with tremendous patience and without any expectation.

Dr. William Joe

Dr. Amarnath Tripathi

Executive Summary



Background

The share of youth population (in the age group of 15-34 years) in total population of India has been continuously increasing from 30.6 per cent in 1971 to 34.8 per cent in 2011 (Central Statistics Office, 2017). The youth being one of the dynamic human resource of the country has made India one of the youngest nations in the world. Youth are the carriers of new ideas and more receptive to innovation, ready to bear risk and willing to participate in community action. Rural youth having family background of farming, are active partners in various agricultural activities including dairy farming. This study aims to explore the willingness and abilities of youth to contribute toward the development of dairy sector in India.

Objectives

- To study the existing knowledge / skill level and willingness of rural youth with respect to taking up of dairying and alternate sources of livelihoods.
- To study personal aspirations, social (peer and parental) influences, gender norms, and infrastructure (land, finance, market, availability of labour and dairying knowledge) which are constraints and influence rural youth's perceptions of dairying and their interest to undertake it as an employment activity.
- To study the level of acceptance among youths to become agriculture / dairy entrepreneur.
- To recommend the initiatives to be provided by the dairy sector to create the incentives for increased rural youth employment and entrepreneurship in dairying.

Study Design and Method

The present study aims to understand the knowledge, awareness, skill, personal aspirations and willingness among youth to adopt dairy farming as an employment opportunity considering the present social inclusion, gender norms, entrepreneurship and infrastructure. Data collected through both qualitative and quantitative methods. The study adopts a multistage sampling strategy to select the survey respondents across states where National Dairy Plan Phase-I intervention has taken place; nine states are selected for the present study. These states are: Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, and Tamil Nadu. In particular, two states each were

selected from the northern, eastern, western and southern region of India, whereas one state was selected to represent the central region. These states are then classified into regions and agro-climatic zones whereby one district per region was selected for the sampling purposes.

For the selection of the districts, we listed those districts from the nine states in which both Rational Balancing Programme (RBP) and Village Based Milk Procurement System (VBMPS) programme was implemented under NDP I. Thus, overall 36 districts are selected for the study. From each of the districts, two development blocks and six villages within each block were selected for the study. The selection of intervention village was based on characteristics of DCS i.e. New DCS and Strengthened DCS under NDP I across the various selected regions of the country.

Overall, quantitative and qualitative data was collected from 144 villages from 36 districts of 9 states. On average 15 youths were randomly selected thus leading to a total 2160 youth interviews for the present study. The youth were selected from the age group of 18-35 years. The selected youths were from the families, who must be the member of DCS. For the present study all those youths were covered who were either working as dairy farmers or migrated to urban areas for education or occupation to understand their perception towards dairy farming. FGD guidelines has been used to collect the qualitative data in the study areas. Few case studies were also collected to reveal more information on the subject.

Key Findings

- **Knowledge on dairy sector:** Basic awareness regarding dairy-farming is high among young dairy farmers (67.5 percent) is high but there is further scope to improve specific knowledge on various aspects of dairy farming. It is observed that awareness about ration balancing programme (54.5 percent) was maximum among youth involved in dairy farming. On the other hand, information on specific schemes like calf protection was lacking as only 25.4 percent reported awareness on these issues. In order to have a holistic understanding regarding level of knowledge among youth about different dairy farming activities, knowledge index was estimated based on Principle Component Analysis (PCA). Overall, it is noted that percentage of youth in higher knowledge bracket is significantly high for those involved in dairy farming compared to those who are in any other occupation.
- **Family and Relatives as main source of knowledge:** Evidently 68.6 percent of male and 56.3 percent of female youth farmers have acquired knowledge from family members. This implies that a majority of youth involved in dairy farming inherit the knowledge about it from their families and therefore it is highly likely that youth who have inherited dairy farming will have higher knowledge.

This also provides an opportunity to develop institutional and formal mechanisms for promotion of dairy sector knowledge among the youth.

- **Youth from vulnerable populations benefit from trainings:** It was found that higher percentage of youth from socially and economically backward background received training on VBMPS. For instance, about 36.6 percent of youth from lower asset index received training on VBMPS against 31.7 percent from upper 50% of asset index. This gap (about 15.3 percent) was even much higher in case of training on ration balancing program. The value of correlation between youth with higher knowledge of RBP and who have received training on RBP is significantly positive and high. Clearly, higher level of training is positively correlated with higher level of knowledge among youth farmers. The estimates from logistic regression further confirms the association.
- **Need for training in various areas:** The percentage of male and female requiring trainings is: Basic dairy training is 69.5% and 82.8%; Disease control 65.5% and 72.7%; Value added milk products 50.7% and 52.3%; Manure management 45.7% and 50.2%; Ration balancing 69.2% and 70%; Fodder cultivation and preservation 66.4% and 68.5%; Waste management 49% and 55.2%; Milk storage 58.4% and 63.1%; Hygiene practices 69% and 75.9%; Infrastructure development 64% and 65.4%; Record and book keeping 59.7% and 61.1%. There is significant and positive correlation between youth with higher knowledge and their need for training. For instance, the value of Pearson correlation coefficient for those having knowledge about RBP and need training on RBP is 0.277. It can be inferred that knowledgeable youth are not satisfied with the current level of knowledge and are interested in further understanding the sector and activities.
- **Knowledgeable youth are concerned about dairy sector prospects:** Econometric analysis suggests that knowledgeable youth involved in dairy farming are 44% less likely to have a favorable opinion regarding dairy as a better job opportunity as compared to their counterparts. Same group also have 34% less likely of reporting higher job security in dairy business. This may be because with improving knowledge, the youth are increasingly aware of problems and difficulties in dairy venture. Regression estimates also shows that knowledgeable dairy farmers have higher odds of reporting struggle in starting and running dairy farming and related business. About 61.8 percent males and 60.8 percent females think that it is difficult to start (or set-up) a business venture in dairy sector. This clearly implies that a substantial proportion of youth perceive bottlenecks in starting a dairy business.
- **Willingness to choose dairy as a career option:** The willingness to engage in dairy sector is noticeably (about three times) higher among female youth (65.2 percent) compared to male youth (23.1 percent). Overall only one-in-three youth (about 33 percent) were willing to pursue dairy as

an employment activity. Willingness towards dairy business was reported to be higher among youth from marginalised groups (SC/ST) (40.0 percent) compared to OBC (35.1 percent) and general (34.2 percent) categories. Youth with secondary or higher education (25.2 percent) have lower aspiration to become a full-time dairy farmer/business person compared to those with less than secondary education (41.7 percent).

- **Constraints in shifting to dairy:** Econometric analysis suggests that youth with higher level of knowledge about dairy activities have higher odds (OR: 1.70; 95% CI: 1.10; 2.64) of reporting willingness to switch to dairy business. However, regression estimates shows that youth who are willing to switch to dairy business are less likely to have with favourable opinion regarding easy availability of loans. This indicates that further improvements in access to finance is required for those who are willing to switch to dairy business. The youth stated several other constraints including support from family, financial availability, business risk, uncertainty regarding market factors (demand), care of milch animals and their productivity etc.
- **Gendered role in dairy:** There is almost equal contribution of males and females in the feeding of animals. However, there are certain activities like milking and processing and cleaning animals, utensils and animal shed where participation of females is much higher than males. Females are much involved in indoor activities like feeding of animals, milking and processing and cleaning animals, utensils and animal shed. Males are much involved in outdoor activities like cultivation of fodder, fetching water, marketing and selling of milk, maintenance of record/book keeping and purchasing and selling of animals. Substantial proportion of youth believe that the biggest reason behind not involving females in dairy farming is the security/safety and that there is more physical capacity required. On the other hand, reasons like social and cultural norms and marketing management were found to be unpopular and insignificant among the youth.
- **Aspirations and contextual factors play critical role:** Factors such as socio-economic and demographic characteristics, parental influence, educational level, peers influence /pressure, lived experiences influence the aspirations in the youth. These factors are similar in all regions. Local context and agro-climatic environment, like increasing input cost, stagnating procurement prices, unavailability of fodder and water scarcity, land-holdings are the factors which affect their willingness and modify their perceptions towards dairy farming.

Major Recommendations

- **Access to financial services:** Rural youth will be engrossed towards dairy farming profession only if it becomes economically viable and business friendly. The NDP can support the vulnerable

groups through apprenticeship programmes and identifying potential for financial services for participants through their engagement in the dairy farms established by the union.

- **Formal education and capacity building:** Upscaling the number of institutes which can offer technical education or short-courses on the dairy sector such as dairy technology, dairy chemistry, dairy microbiology, dairy engineering, veterinary science etc with an affordable fee structure (and scholarships) to attract youth toward the dairy sector.
- **Training and skill development:** Training to be provided at Panchayat level for taking up the dairy farming as an income generating opportunity. Proper exposure visits of rural youths in dairy farming should be conducted by stakeholders making them convincing.
- **Strengthening of extension services:** Dairy extension activities need to be strengthened with an emphasis on understanding the role of dairy farming in livelihood, food security, women empowerment, and other gender specific issues in technologies in the changing context of dairying. Conserving, encouraging and blending of traditional methods with modern technologies can be gainful with active implementation of dairy policies.
- **Reducing income loss and uncertainties:** The price of milk based on FAT and SNF levels is sensitive to market demand. This should be countered by a suitable policy of milk pricing. Youth farmers to be encouraged to take the insurance policies of all their livestock. Furthermore, there is lack of veterinary doctors in the rural areas of most of the states and this should be improved to provide timely and cost-effective care and treatment.
- **Working conditions and input requirements:** To overcome the perception of unattractive working conditions among the youth by proper policy support which can improve input requirements such as fodder cultivation, silage or use of modern equipment. Simultaneously sensitising them through training, mechanization and application of technologies.
- **Youth specific awareness campaign:** Apart of that the effective training and campaign should be held in the village in which the youth from the dairy and non-dairy family and village level farmers participate with effective monitoring and supervision.
- **Youth dairy farmer recognition and rewards:** The dairy cooperatives at the village, district block and state level should develop programmes and events to felicitate young dairy farmers through rewards and recognition for their performance and contribution toward the dairy development by setting up a competitive environment within the villages, blocks, districts and states.
- **Participation of women and youth through self-help group models:** Sensitisation of households involved in dairy farming to incorporate both men and women in all the activities of dairy farming as how they can support each other to reduce the work-load each carrying out individually. To

develop a transparent multi-stakeholder mechanism to ensure coherence, coordination and cooperation with government institutions to engage more women and youth from the vulnerable groups in dairy farming.

- **Issues for specific policymaking:** The long-term approaches to withstand and enhance potential of new generation of farmers to encourage the milk and milk product market to add value and enhance employment.
- **Demand generation and commercial dairying:** It has been noticed that there is lot of scope for commercial dairying across states which needs to be enhanced. State specific customized schemes for animal husbandry and dairying need to effectively in place.

Limitations

Information on knowledge about dairy farming activities is self-reported. Also, with time and resource constraints the knowledge assessment does not cover all the components of training given under several programmes and schemes. Future studies can devise more standardized scales and questions for an objective assessment of knowledge. The available information is restricted to youth age between 15-35 years and with limited sample size it does not allow a thorough disaggregation of same. Nevertheless, the prime objective of the study required direct focus on the aggregate estimates for total sample youth. Additionally, asset index based on principle component analysis of several asset holdings is used as the proxy for family's income and overall well-being. In the absence of data on household income, asset holdings is mostly used to understand the associations of analytical variables with household well-being.

1 Introduction

1.1. Background

The youth constitutes around 1/5th of India's population and a significant majority of them reside in villages. The youth living in rural area comprising about 30% of the total population between the age group of 15-35 years which constitutes a vital and vibrant human resource of the nation. They have a right as well as obligation to make their contribution in rural development. Dairying could be the single most important source which can provide employment and economic well-being to these youths. They happen to be critical segments of the population as future development dairying will depend upon their attitude, skills and leadership qualities. Therefore, investing in them seems to be the best way to leverage the demographic dividend of India for the development of dairy sector. Further, youth by nature are more dynamic, sensitive and receptive hence they can be better utilized in rapid dissemination of innovations in the field of dairying and animal husbandry to their communities. This calls for an understanding of existing knowledge, skill level, attitude/motivation of rural youth towards dairying as an employment activity, so that inputs can be obtained for appropriately packaging dairying interventions / training and capacity building efforts for greater involvement of rural youth.

1.2. Objectives

The major objectives of the study are as follows:

- 1) To study the existing knowledge / skill level and willingness of rural youth with respect to taking up of dairying and alternate sources of livelihoods.
- 2) To study personal aspirations, social (peer and parental) influences, gender norms, and infrastructure (land, finance, market, availability of labour and dairying knowledge) which constrain of influence rural youth's perceptions of dairying and their interest to undertake it as an employment activity.
- 3) To study the level of acceptance among youths to become agriculture / dairy entrepreneur.
- 4) To recommend the initiatives to be provided by the dairy sector to create the incentives for increased rural youth employment and entrepreneurship in dairying.

2 Study Design

2.1. Study Design

The present study aims to understand the knowledge, awareness, skill, personal aspirations and willingness among youth to adopt dairy farming as an employment opportunity considering the present social inclusion, gender norms, entrepreneurship and infrastructure in NDP I intervention villages. While examining these issues it is important to use a combination of quantitative and qualitative methods to enhance the quality of results and reduce the chance of bias. Data collected through quantitative methods are designed to ensure objectivity, reliability and generalizing of the findings. Quantitative methods provide estimates based on statistical underpinnings and can be useful while deciding upon choices regarding policy and developmental needs.

Although, such data are robust and objectively verifiable but they may not completely capture the factors and perspectives that can be useful for policy. On the other hand, qualitative data is obtained from recordings of interviews, notes of observations, and analysis of documents as well as reflective notes of the researcher. This information have to be organized, summarized, described and interpreted. The key methods involved in qualitative data collection are reviews from direct observations, key informant interviews (KII), focused group discussions (FGD) and participatory rapid appraisal (PRA).

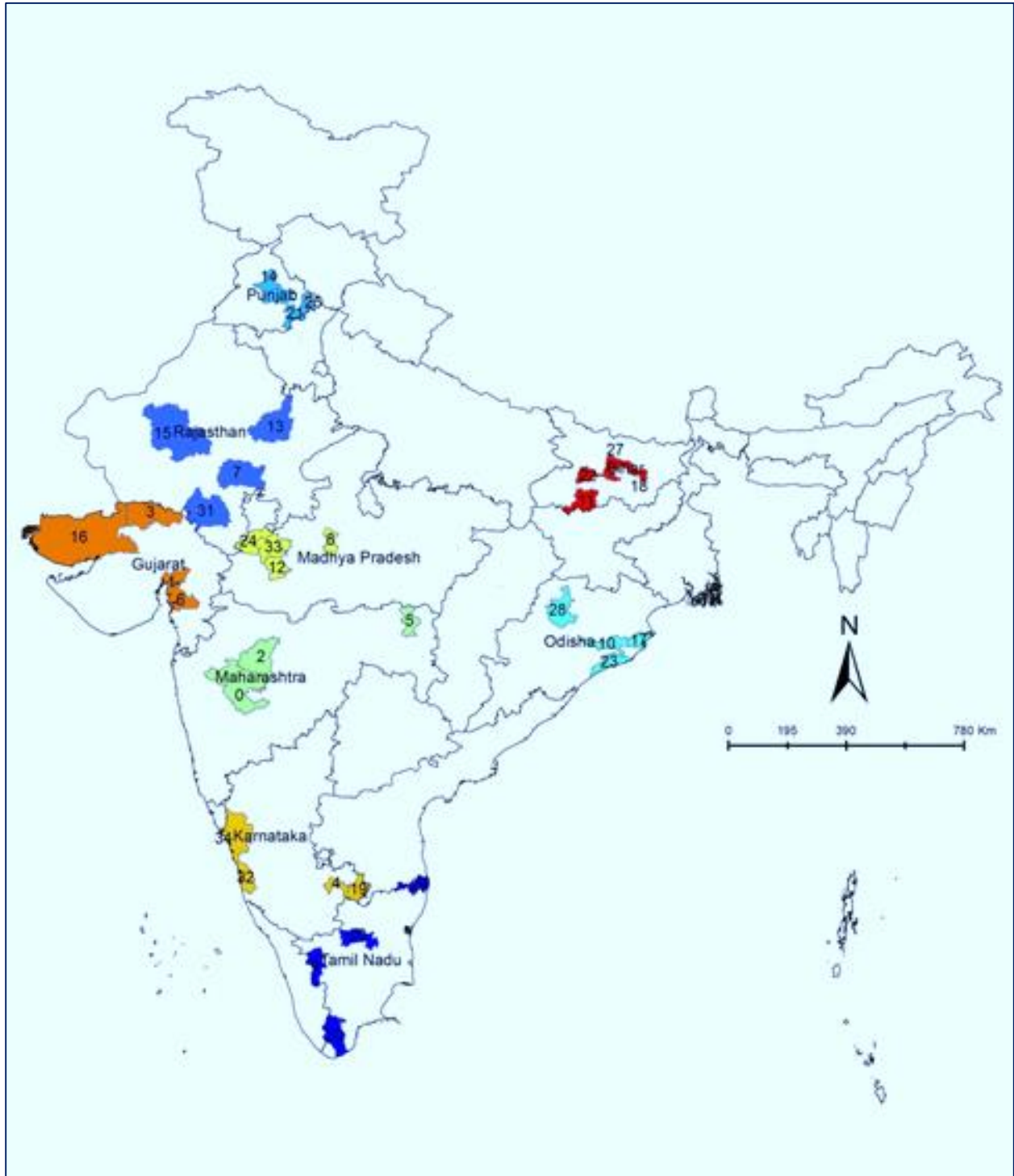
The study adopts a multistage sampling strategy to select the survey respondents. Out of the eighteen states where NDP-1 intervention has taken place, nine states are selected for the present study. These states are: Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, and Tamil Nadu. In particular, two states each were selected from the northern, eastern, western and southern region of India, whereas one state was selected to represent the central region. These states are then classified into regions and agro-climatic zones whereby one district per region was selected for the sampling purposes. For the selection of the districts, we listed those districts from the nine states in which both Rational Balancing Programme (RBP) and Village Based Milk Procurement System (VBMPS) programme was implemented under NDP I. Thus, overall 36 districts are selected.

From each of the districts, two development blocks and 5-6 villages within each block were selected for the study. The selection of intervention village was based on characteristics of DCS i.e. New DCS and Strengthened DCS under NDP-I across the various selected regions of the country. Overall, quantitative and qualitative data was collected from 144 villages from 36 districts of 9 states. On average 15 youths were randomly selected thus leading to a total 2160 youth interviews for the present study. The youth were selected from the age group of 18-35 years. The selected youths were from the families, who must be the member of DCS. For the present study all those are covered who were either working as dairy farmers or migrated to urban areas for education or occupation to understand their perception towards dairy.

Table 2.1: List of districts selected for the study

State	Zone	Districts (RBP + VBMPS)
Maharashtra	East	Bhandara
	West	Aurangabad
	South	Kolhapur
	Central West	Ahmednagar
Karnataka	South	Udupi
	East	Kolar
	West	Uttar Kannada
	South West	Rural Bangalore
Punjab	East West	Patiala
	East	SAS Nagar
	South	Bhatinda
	Central	Ludhiana
Odisha	East	Kendrapara
	South East	Puri
	Centre	Cuttack
	North west	Sambalpur
Bihar	Central	Patna
	South	Gaya
	North	Samastipur
	East	Khagaria
Rajasthan	East	Jaipur
	South	Udaipur
	South	Bhilwara
	West	Jodhpur
Madhya Pradesh	West	Ratlam
	West	Ujjain
	Centre	Bhopal
	South	Indore
Tamil Nadu	North	Tiruvallur
	West	Coimbatore
	South	Tirunelveli
	Central	Salem
Gujarat	Central	Anand
	West	Kutch
	North	Banas
	South	Bharuch

Map 2.1: Selected Districts for the Study



Note: The states selected for the study are: Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, and Tamil Nadu.

From each of these districts, two development blocks were selected and further 4 villages were chosen from each of them. The selection of intervention village was based on characteristics of DCS i.e. New DCS and Strengthen DCS under NDP-I across four regions of the country for the present study. The selection of districts and villages were made on the RBP and VBMP programs have been implemented. The selection of control village was based on the basis of non-intervention of NDP-I.

Overall, the data was collected from 144 villages from 36 districts of 9 states. In total 28 respondents were selected randomly from 144 intervention villages leading to a total of 4032 respondents (inclusive of women, small holders and SC/ST group people). The selected respondents must be the member of DCS. Also, 7 respondents were selected randomly from 144 control villages leading to a total of 1008 respondents (inclusive of women, small holders and SC/ST group people).

2.2. Field Implementation

The study implementation involved a large team of individuals with various skills in field surveys. The study team organized training workshops to train the field supervisors as well as personnel at IEG who were engaged in monitoring and supervision of the field survey activities. The main objective of the training was to ensure uniformity in field implementation approach and procedures adopted for data collection in various states and districts. The field supervisors as well as IEG personnel further organized district-level training workshop with the interviewers in all the selected districts. Study coordinators and senior project staff from IEG were the resource persons for the trainings. Data coordinator was trained for editing the questionnaires as well as for data entry in software (CSPPro).

The fieldwork in each state was carried by a number of interviewing team. Interviewers were hired by IEG specifically for the conduct of the study. The selection aimed to consider aspects such as local language and conditions. The quantitative questionnaires were translated in local language in selected states. The Milk Unions across various districts was also approached to understand local contexts for the survey. Field testing of study tools team was conducted in Jaipur during March 2018. The field survey was conducted across the various states and districts during June 2018 to February 2019.



Interaction with young dairy farmers in Cuttack, Odisha



Interview of young dairy worker in Ludhiana, Punjab



Introductory meeting with field investigators at Udupi, Karnataka



Interview with senior official at Bhilwara, Rajasthan

3 Key Findings

3. Analyses and Findings

3.1. Demographic and Socioeconomic Profile

The demographic and socioeconomic distribution of sample youth is depicted in table 3.1. About 16 percent of sample youth who are involved in dairy farming are less than 25 years. It can also be observed that approximately 53 percent of sample dairy farmers have attained secondary education. Similar pattern emerged for those who are involved in other occupation. About 14 percent of sample youth dairy farmers belong to schedule castes or schedule tribes. About 45.6 and 40.5 percent of youth are from General and Other Backward Classes (OBC) category. About three-fourth of sample youth who were involved dairy farming belong to lower wealth quintile. This pattern was also consistent in case of non-dairy farmers as well.

Table 3.1: Socioeconomic Characteristics of Respondent

	Dairy Farmers	Others
	%	%
Age of Respondent		
Less than equal to 25	16.1	28.9
More than 25 years	83.9	71.1
Education of Respondent		
Below or completed primary	47.1	46.3
More than Primary education	52.9	53.7
Caste of Respondent		
General	45.6	43.1
SC/ST	13.9	13.2
OBC	40.5	43.8
Wealth quintile		
Quintile 1	74.6	76.3
Quintile 2	25.4	23.7
Total	43.6	56.4

Further, state wise distribution of sample youth by occupation is presented in table 3.2. Highest proportion of dairy farmers were observed in Madhya Pradesh (69.6 percent) followed by Maharashtra (62.9 percent) and Tamil Nadu (61.8 percent). On the other percentage of sample youth involved in dairy farming was observed to be lowest in Bihar (35.06 percent) followed by Punjab (42.67

percent). In addition, about 62.92 percent of sample youth from Karnataka were reported to be involved in dairy farming. Similarly, 61.40 percent of sample of youths from Odisha were dairy farmers.

Table 3.2. State-Wise Distribution of Sample by Occupation

State	Others	Dairy Farmers	Total
Bihar	35.06	64.94	100
Gujarat	54.33	45.67	100
Karnataka	60.67	39.33	100
Madhya Pradesh	69.62	30.38	100
Maharashtra	62.92	37.08	100
Odisha	61.40	38.6	100
Punjab	42.67	57.33	100
Rajasthan	55.42	44.58	100
Tamil Nadu	61.78	38.22	100
Total	56.38	43.62	100

Table 3.3. Percentage Distribution of Households Possession by Caste

Asset	Total	General	SC/ST	OBC
	%	%	%	%
Refrigerator	21	22	12	21
TV	50	51	45	50
Washing Machine	12	13	5	12
Motorcycle	43	42	34	47
Scooter	9	11	9	9
Cycle	24	29	23	21
Car	5	8	3	3
Fan	46	48	42	45
Cooler	15	16	7	18
AC	3	6	1	2
Phone	45	49	33	44
Sewing Machine	10	13	10	8

To further understand the socioeconomic profile of sample, it is relevant to understand the distribution of assets owned by households across social categories. Across social categories, it can be observed that possession of all the utilities and assets is higher among socially advanced households. However, Social disparities persist among different social groups. General households are better in comparison to other social groups. TV continues to be the most commonly possessed asset, owned by 50.9 per cent of General households, 44.5 per cent of SC/ST households, and 50.3 percent in rest of the OBC households. A higher proportion of the General and OBC households have motorcycles or a scooter while a comparatively lower proportion of SC/ST has these assets. The

percentage households who own phone are 48.9 percent of General households, 44.3 percent of OBC households and 32.7 per cent of SC/ST households. Just a miniscule population owns air conditioner. A large majority (28.6 per cent) of General households, followed by SC/ST households (23.2 per cent) and 20.9 per cent of OBC households own a bicycle.

Table 3.4. Percentage Distribution of Households by Quintiles and Social Groups

	Quintile 1	Quintile 2	Total
	%	%	%
General	49	51	100
SC/ST	58	42	100
OBC	50	50	100
Total	51	49	100

Table 2.8 below presents the percent distribution of social groups by quintile. More than half of the SC/ST households (58.3 per cent) belong to lower quintile. Similarly a little above 50 per cent of General and OBC households belong to upper quintile. Clearly, the percentage of households belonging to lower quintile is higher among the socially disadvantaged groups. Household characteristics such as type of house, availability of electricity, clean cooking fuel, toilet and source of drinking water are significant measure of the socioeconomic status of the household; and also important to the health of its family members. Table below shows the information on housing characteristics such as type of house, availability of electricity, cooking fuel and toilet. More than 95 per cent of the sampled population has electricity and more than 80 per cent of households have reported a ration card. However, the proportion of households with electricity varies widely by social groups. A large proportion of households (97.2 per cent) belonging to general category and OBC category (97.1 per cent) have access to electricity comparing with 95.3 per cent in SC/ST category.

Smoke from fuels like Dung cakes, wood, charcoal is seriously hazardous to health. We also collected the data on type of fuel used for cooking and the place for cooking. Fourteen per cent of households cook with kerosene/coal or cow-dung and 50.9 per cent cook with LPG/Bio-gas/ others. However this percentage shows a significant difference in the types of cooking fuel used among different social groups. In SC/ST category cooking is largely done with firewood. Among SC/ST households, 35 per cent use firewood, 16.6 per cent uses Kerosene/coal and cow dung; and 48.3 percent uses LPG/bio-gas for cooking. Also, a higher percentage of SC/ST households live in Kutcha houses (31.3 per cent) and do not have a toilet (24.9 per cent). Clearly, it seems that SC/ST households are on a lower socio-economic plane.

Table 3.5. Percent Distribution of Social Groups and Total Households by Household Characteristics

	General	SC/ST	OBC	Total
Type of house	%	%	N	%
Kutcha	20	31	30	26
Pucca	61	46	49	53
Semi-Kutcha	20	23	21	21
Electricity				
No	3	5	3	3
Yes	97	95	97	97
Toilet				
No	10	25	15	14
Yes	91	75	85	86
Source of drinking water				
Handpump outside dwelling	29	33	30	30
Public tap/standing pipe	26	29	31	29
Piped water into dwelling/plot/premises	29	23	18	23
Bottle water, tubewell and others(tank,drum,etc)	16	16	22	19
Type of Fuel				
Firewood	27	35	43	36
Kerosene/coal/cowdung	12	17	14	14
LPG/Bio gas/others	61	48	43	51
Ration Card				
No	13	12	11	12
Yes	87	88	89	88

3.2. Knowledge, Skill and Awareness

3.2.1. Knowledge

Table 3.6 present information regarding knowledge among youth about different activities under dairying business. In general, the basic awareness regarding dairy-farming is high among both dairy farmers (67.5 percent) and non-dairy farmers (71.5 percent) as well. It was observed that awareness about ration balancing programme (54.5 percent) was maximum among youth involved in dairy farming. On the other hand, information on specific schemes like calf protection was not popular among youth farmers as only 25.4 percent of youth were aware about it.

Table 3.6 Percentage of Youth with Knowledge about Dairy Activities

Knowledge About:	Dairy Farmers (%)	Others (%)
Dairy Farming	67.5	71.5
Welfare Schemes	30.6	15.5
Interest Free Loans	22.6	16.3
Cattle Insurance Schemes	52.2	41.2
Green Fodder Project	39.5	31.9
Calf Protection Scheme	25.4	17.9
Fodder Subsidy	43.5	30.9
Ration Balancing Programme	54.5	55.1
VBMPS	50.1	38.5
Veterinary Services	41.7	36.9
AI Facility	44.9	41.6

Table 3.7 Marginal Effects of Components Factor Score by PCA

Component	Scoring Factor	Mean	SD	Scoring Factor/SD
Dairy Farming	0.117	0.686	0.464	0.253
Welfare Schemes	0.284	0.198	0.398	0.713
Interest Free Loans	0.282	0.179	0.384	0.736
Cattle Insurance Schemes	0.292	0.439	0.496	0.589
Green Fodder Project	0.297	0.332	0.471	0.630
Calf Protection Scheme	0.305	0.204	0.403	0.756
Fodder Subsidy	0.349	0.334	0.472	0.740
Ration Balancing Programme	0.354	0.518	0.500	0.707
VBMPS	0.356	0.413	0.493	0.722
Veterinary Services	0.328	0.361	0.480	0.683
AI Facility	0.281	0.412	0.492	0.571

In order to have a holistic understanding regarding level of knowledge among youth about different dairy farming activities¹, knowledge index was estimated based on Principle Component Analysis (PCA). Marginal effects based on factor score obtained from PCA reveals the effect of each component in overall index estimate. It may be noted that components such as basic knowledge of dairy farming has limited influence on the overall knowledge index score. The marginal effects of this component of dairy farming is 0.253 whereas for most of the other components the marginal effects is around 0.7-0.75. This indicates that the knowledge index is robust and provides adequate weight to

¹ knowledge regarding dairy farming in general, welfare schemes, interest free loans, cattle insurance, green fodder development project, calf protection scheme, fodder subsidy scheme, ration balancing programme, VBMPs, Free veterinary services and AI facility.

knowledge components which are more unique than other wide components such as knowledge of basic practices in dairy.

Table 3.8. Distribution of Youth by Knowledge index³ (PCA based) across socioeconomic Background, selected State, India

Knowledge Index	Dairy farmers (%)		Others (%)		All (%)	
	Low ¹	High ²	Low ¹	High ²	Low ¹	High ²
Age						
Below 25 years	51.5	48.5	51.6	48.4	51.56	48.44
Above 25 Years	44.2	55.8	54.4	45.6	49.48	50.52
Gender						
Male	47.9	52.1	53.8	46.2	51.74	48.26
Female	35.2	64.8	52.8	47.2	43.48	56.52
Social Group						
SC/ST	44.6	55.4	41.9	58.1	43.09	56.91
OBC	42.5	57.5	56.6	43.5	51.2	48.8
General	47.4	52.6	53.4	46.6	50.76	49.24
Asset Index						
Below 50%	44.3	55.7	54.2	45.8	50.25	49.75
Top 50%	48.0	52.0	50.3	49.7	49.11	50.89
Education Level						
Below Secondary	44.1	55.9	55.6	44.4	50.51	49.49
Above Secondary	46.3	53.4	51.9	48.1	49.59	50.41

1- Lower 50 Percent of Knowledge Index

2- Upper 50 percent of Knowledge Index

3- PCA (Principle component analysis) based Knowledge index comprises youth's knowledge regarding dairy farming in general, welfare schemes, interest free loans, cattle insurance, green fodder development project, calf protection scheme, fodder subsidy scheme, ration balancing programme, VBMPs, Free veterinary services and AI facility.

In this regard, table 3.8 present estimates regarding distribution of sample youth by level of knowledge (based on PCA based index) across socioeconomic characteristics. Overall, it can be observed that percentage of youth in higher knowledge bracket is significantly high for those involved in dairy farming compared to those who are in any other occupation. It may also be noted that overall about half of the total sample youth does belongs to lower knowledge index bracket. Higher percentage of females involved in dairy farming were estimated in top 50% of knowledge index. Similarly, it can also be observed that 53.4 percent educated youth in dairy farming belong to upper 50% of index and 55.4 percent of youth without secondary education belong to same category. However, no significant differences in distribution were observed across wealth asset index, which shows that knowledge regarding dairy farming activities are not significantly associated with household's wealth components.

Figure 3.1: Distribution of Youth by Source of Knowledge (involved in Dairy Farming) about Dairy Farming, India

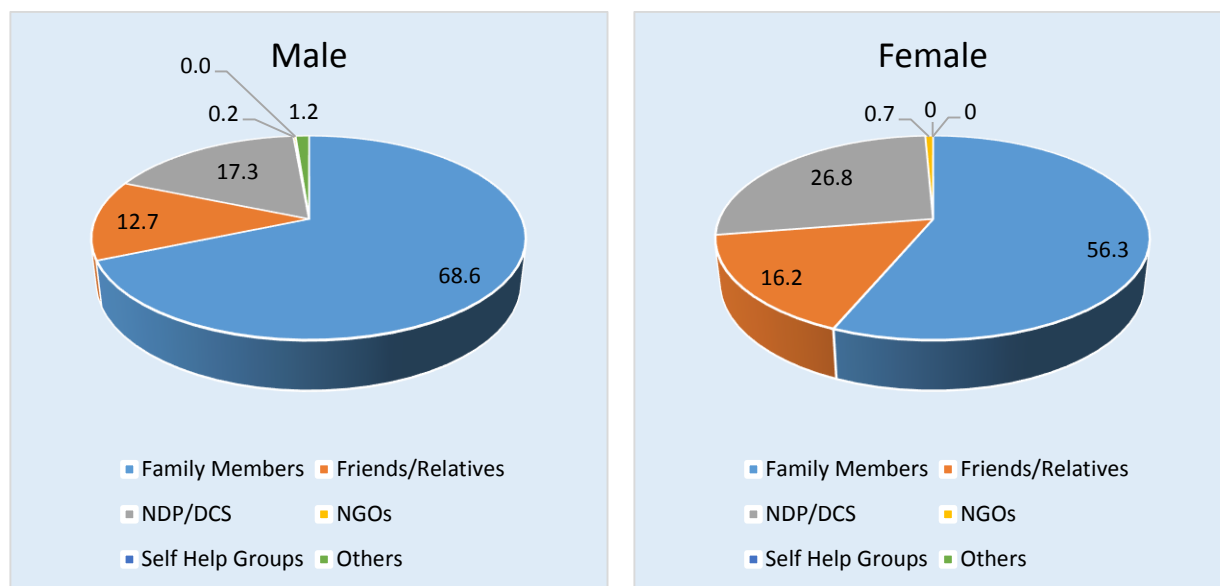


Figure 3.1 shows the distribution of male and female youth who are involved in dairy farming by source of knowledge. Evidently 68.6 percent of male and 56.3 percent of female youth farmers have acquired knowledge from family members. This implies that a majority of youth involved in dairy farming inherit the knowledge about it from their families and therefore it is highly likely that youth who have inherited dairy farming will have higher knowledge.

Table 3.9. Percentage Distribution of Sample Youth (involved in Dairy Farming) by Source of Knowledge, India

State	Family Members	Friends/Relatives	NDP/DCS	NGOs	Others
Bihar	30.6	37.0	30.6	0.9	0.9
Gujarat	82.0	16.9	1.1	0.0	0.0
Karnataka	96.1	3.9	0.0	0.0	0.0
Madhya Pradesh	65.8	13.2	19.3	0.9	0.9
Maharashtra	57.9	29.8	9.9	0.0	2.5
Odisha	63.2	11.8	22.1	1.5	1.5
Punjab	94.8	3.5	1.7	0.0	0.0
Rajasthan	47.1	9.4	42.4	0.0	1.1
Tamil Nadu	73.4	3.5	23.1	0.0	0.0
Total	63.8	14.7	20.4	0.3	0.8

Further, across states, in states like Karnataka (96.1 percent), Punjab (94.8) and Tamil Nadu (73.4 percent), the major source of knowledge about dairy farming activities is family members (Table 3.9). However, in Rajasthan, about 42.4 percent of youth's source of knowledge is government initiatives like NDP/DCS.

3.2.2. Training

It is crucial for youth to be provided with adequate training to escalate the efficiency and productivity of the venture. In this regard, table 3.10 present estimates for percentage of youth who received training on specific domains of dairy farming across socioeconomic correlates. Higher percentage of younger cohort (below 25 years) received training on VBMPS (40.3 percent) compared to those above 25 years (34.1 percent). It was also found that higher percentage of youth from socially and economically backward background received training on VBMPS. For instance, about 36.6 percent of youth from lower asset index received training on VBMPS against 31.7 percent from upper 50% of asset index. This gap (about 15.3 percent) was even much higher in case of training on ration balancing program. Estimates suggest that there is need to increase uptake of training among less educated.

In order to understand the association between knowledge level and training received among youth, table 3.11 shows the Pearson correlation estimates. The value of correlation between youth with higher knowledge of RBP and who have received training on RBP is significantly positive and high. This implies that higher level of training is positively correlated with higher level of knowledge among youth farmers. However, we do not observe a higher value of coefficient for other parameters.

Table 3.10. Percentage of Youth received Training on VBMPS, Ration Balancing programme, Fodder Development, Selected States, India

Age	VBMPS	RBP	Fodder Development
Below 25 years	40.3	34.5	19.7
Above 25 Years	34.1	28.6	13.3
Social Group			
SC/ST	45.2	35.7	16.7
OBC	39.8	36.1	16.5
General	30.1	24.9	14.5
Asset Index			
Below 50%	36.6	33.9	16.4
Top 50%	31.7	18.6	10.9
Education Level			
Below Secondary	35.3	25.1	13.9
Above Secondary	35.6	34.6	15.7

Table 3.11. Correlation Matrix: Youth who Received Training and have higher Knowledge

	Training: VBMPs	Training: RBP	Training: Fodder Development
Knowledge about VBMPs	0.143***	0.128***	0.062
Knowledge about RBP	0.124***	0.301***	0.048
Knowledge about Fodder Subsidy	0.069	0.052	-0.126***
Knowledge about Green Fodder Development	0.219***	0.037	0.061
Knowledge about Dairy Farming	0.226***	0.124***	0.109***

Estimations are *significant at 0.10 ** at 0.05 level *** at .01 level.

The estimates from logistic regression further confirms the positive and significant association. For instance, compared to youth with no training on VBMPs, the odds of having higher knowledge about dairy activities is significantly higher for those who have received training (OR: 1.77; 95% CI: 1.36; 2.31). Similarly, the likelihood of having higher knowledge is double (OR: 2.11; 95% CI: 1.80; 2.82) for youth who received training on ration balancing compared to those who do not. This clearly implies that providing adequate training to youth can significantly enhance the knowledge level of youth involved in dairy farming.

Table 3.12. Logistic Regression Estimates Regarding association between Dairy Knowledge among Youth and Training received adjusted for Socioeconomic Correlates, Selected State, India

	Higher Knowledge about Dairy Farming				
		VBMPs		Ration Balancing	
Training	OR	95% CI		OR	95% CI
No [®]	1.00			1.00	
Yes	1.77***	[1.36; 2.31]		2.11***	[1.8; 2.82]
Sex					
Male [®]	1.00			1.00	
Female	1.07	[0.80; 1.43]		0.75*	[0.55; 1.04]
SC/ST					
No [®]	1.00			1.00	
Yes	1.67**	[1.12; 2.49]		1.40	[0.92; 2.12]
Asset Index					
Low [®]	1.00			1.00	
High	1.01	[0.73; 1.37]		1.07	[0.77; 1.47]
Secondary Education					
No [®]	1.00			1.00	
Yes	1.22	[0.95; 1.56]		1.05	[0.80; 1.36]
Dairy Farmer					
No [®]	1.00			1.00	
Yes	1.46***	[1.13; 1.90]		1.47***	[1.11; 1.96]

[®] refers to the reference category. Model adjusted for Sex, Social Group, Education, Asset Index and Major Occupation. Estimations are *significant at 0.10 ** at 0.05 level *** at .01 level.

Table 3.13. Youth Responses towards Need for Training in Different Areas of Dairy Farming, India

Training on:	Male	Female	Total
Basics	69.5	82.8	73.6
Disease Control	65.5	72.7	67.8
Value Added Milk Products	50.7	52.3	51.2
Manure Management	45.7	50.2	47.1
Ration Balancing	69.2	70.0	69.4
Fodder Cultivation and Preservation	66.4	68.5	67.0
Waste Management	49.0	55.2	51.0
Milk Storage	58.4	63.1	59.8
Hygiene Practices	69.0	75.9	71.1
Infrastructure Development	64.0	65.4	64.5
Record and Book Keeping	59.7	61.1	60.1

Table 3.13 shows responses on need for training in various areas of dairy farming by gender. The responded percentage by male and female on: Basic training is 69.5% and 82.8%; Disease control 65.5% and 72.7%; Value added milk products 50.7% and 52.3%; Manure management 45.7% and 50.2%; Ration balancing 69.2% and 70%; Fodder cultivation and preservation 66.4% and 68.5%; Waste management 49% and 55.2%; Milk storage 58.4% and 63.1%; Hygiene practices 69% and 75.9%; Infrastructure development 64% and 65.4%; Record and book keeping 59.7% and 61.1%.

Table 3.14 Correlation Matrix: Knowledge and Need for Training

	Need for Training on:				
	Basic Training	Ration Balancing	Fodder Cultivation	Milk Storage	Value Added Milk Products
Knowledge: VBMPs	0.184***	0.164***	0.161***	-0.041	0.015
Knowledge about RBP	0.162***	0.277***	0.199***	-0.001	-0.021
Knowledge: Fodder Subsidy	0.176***	0.266***	0.203***	0.027	0.001
Knowledge GFD	0.125***	0.13***	0.101***	0.067	-0.045
Knowledge: Dairy Farming	0.168***	0.176***	0.151***	0.099***	0.100***

Note: GFD: Green Fodder Development

Estimations are *significant at 0.10 ** at 0.05 level *** at .01 level.

From an analytical point, it is crucial to identify whether youth's perception regarding need for training is associated with their knowledge level. In this regard, estimates from table 3.14 suggest that there is significant and positive correlation between youth with higher knowledge and their need for training. For instance, the value of Pearson correlation coefficient for those having knowledge about RBP and need training on RBP is 0.277. This directly implies that youth with higher level of knowledge have higher need for training. It can be inferred that somehow present level of training among youth is not sufficient and therefore youth is not satisfied with the current level of knowledge.

Further, logistic regression estimates from table 3.15 suggest that youth involved in dairy farming have higher odds of reporting need for training on RBP, fodder cultivation, milk storage, and value-added milk products. For instance, it can be observed that the value of odds ratio for those reporting need for training on value added milk products is 1.38 (95% CI: 1.12; 1.70). On the contrary, compared to youth not involved in dairy farming, the likelihood of reporting need for basic training is less for those who are dairy farmers (OR: 0.91; 95% CI: 0.73; 1.13). This shows that youth who are involved in dairy farming does not need much for basic training, however they demand for training on few particular domains of dairy farming. From table 3.15, it can also be observed that likelihood of reporting need for training on ration balancing (OR: 1.43; 95% CI: 1.07; 1.90), milk storage (OR: 1.48; 95% CI: 1.14; 1.93) is higher for youth from richer households compared to those belong to lower asset index. This indirectly implies that richer section has higher awareness regarding salience of training in dairy business. Also, it may be noted that youth from deprived sections may find it difficult to pursue the training and do not report for training requirements.

Table 3.15. Logistic Regression Estimates Regarding association between Need for Basic Training among Youth and Socioeconomic Correlates, Selected States, India

	Need for Training on:				
	Basic Training	Ration Balancing	Fodder Cultivation	Milk Storage	Value Added Milk Products
Dairy Farmer	OR	OR	OR	OR	OR
No [®]	1.00	1.00	1.00	1.00	1.00
Yes	0.91*	1.19*	1.10*	1.17	1.38***
95% CI	[0.73; 1.13]	[0.95; 1.15]	[0.89; 1.37]	[0.95; 1.45]	[1.12; 1.70]
Sex					
Male [®]	1.00	1.00	1.00	1.00	1.00
Female	1.42***	1.06	1.14	1.27	1.07
95% CI	[1.10; 1.82]	[0.82; 1.35]	[0.89; 1.44]	[1.01; 1.61]	[0.85; 1.35]
SC/ST					
No [®]	1.00	1.00	1.00	1.00	1.00
Yes	0.78	1.07	1.04	0.93	0.70**
95% CI	[0.58; 1.06]	[0.75; 1.45]	[0.77; 1.39]	[0.69; 1.24]	[0.52; 0.93]
WQ					
Low [®]	1.00	1.00	1.00	1.00	1.00
High	1.04	1.43**	0.93**	1.48**	1.49**
95% CI	[0.83; 1.29]	[1.07; 1.90]	[0.72; 1.20]	[1.14; 1.93]	[1.16; 1.93]
Secondary Education					
No [®]	1.00	1.00	1.00	1.00	1.00
Yes	1.04	1.24	1.19	1.31*	1.25
95% CI	[0.83; 1.29]	[0.99; 1.54]	[0.97; 1.47]	[1.06; 1.61]	[1.01; 1.53]

[®] refers to the reference category. Model adjusted for Sex, Social Group, Education, Asset Index and Major Occupation. Estimations are *significant at 0.10 ** at 0.05 level *** at .01 level.

Table 3.16. Youth Responses towards Need for Different Modes of Training in Different Areas of Dairy Farming, India

Are of Training	Training Centres of Department	Training At your Place/Cattle Field	Digital Modes (Audio/Visual/Mobile Application Based)	Training by Radio/Television	Others
Basic Training	55.8	28.43	10.97	3.83	0.96
Disease Control	46.32	35.86	12.7	3.74	1.39
Value Added Milk Products	43.56	32.06	16.93	6.28	1.17
Manure Management	39.74	36.77	15.73	5.95	1.81
Ration Balancing	36.9	39.62	15.72	6.29	1.47
Fodder Cultivation and Preservation	41.43	36.28	15.14	6.2	0.95
Waste Management	37.94	40.84	14.47	5.47	1.29
Milk Storage	36.91	40.77	13.84	6.76	1.72
Hygiene Practices	38.04	38.36	16.44	6.01	1.16
Infrastructure Development	39.98	37.66	14.77	5.8	1.79
Record and Book Keeping	42.06	34.32	16.31	5.3	2.01

Table 3.16 shows the responses on different modes of required training in dairy farming. In this, respondents were given different options to choose the mode though which they think the training can be feasible and effective. The different modes of training suggested were (i) Training centres of Department (ii) Training at your place/cattle field (iii) Digital modes (Audio/Video/Mobile application based) (iii) Training by Radio/Television (iv) Others. The highest frequencies have been noticed under training centres of departments, and training at your place/cattle field. On the other side, youth have responded in favour of digital media mode moderately and training by Radio/Television was observed on lowest priority.

3.2.3. Knowledge and Outlook towards Dairy Farming

In order to unravel whether youth with knowledge about dairy farming have a favorable perception regarding dairy as a full-time employment, table 3.17 present logistic regression estimates regarding association between former and latter. Estimates suggest that youth involved in dairy farming and have higher knowledge also are less likely to have a favorable opinion regarding dairy as an better job opportunity (OR: 0.56; 95% CI: 0.40; 0.78). Same group also have lesser odds of reporting higher job security in dairy business (OR: 0.66; 95% CI: 0.47; 0.90). On the contrary, dairy farmers from lower knowledge index have higher odds of reporting favorable opinion about dairy as a better job opportunity as well as better in terms of job security. This may be because youth with higher

knowledge level aware of problems and difficulties arise in running dairy venture. Regression estimates from table 3.17 also shows that dairy farmers with knowledge have higher odds of reporting struggle in starting and running dairy farming and related business.

Table 3.17: Logistic Regression estimates regarding association between Youth’s perception towards dairy as an employment and Knowledge about Dairy Sector adjusted for Socioeconomic Correlates, Selected States, India

Dairy as an Employment				
	Job Opportunity	Profits	Job Security	Struggle
	OR	OR	OR	OR
Dairy Farmer*Knowledge				
Others & Low Ki®	1.00	1.00	1.00	1.00
Others & High Ki	1.07	0.70	1.99	1.08
95% CI	[0.78; 1.47]	[0.49; 1.00]	[0.62; 1.13]	[0.76; 1.52]
DF & Low Ki	2.03***	1.62*	2.00***	1.78***
95% CI	[1.33; 3.08]	[1.01; 2.60]	[1.36; 2.92]	[1.15; 2.74]
DF & High Ki	0.56***	0.91*	0.66	1.23
95% CI	[0.40; 0.78]	[0.61; 1.35]	[0.47; 0.90]	[0.83; 1.79]
Sex				
Male®	1.00	1.00	1.00	1.00
Female	1.21	1.28	1.26	0.83
95% CI	[0.89; 1.65]	[0.89; 1.00]	[0.94; 1.68]	[0.60; 1.15]
SC/ST				
No®	1.00	1.00	1.00	1.00
Yes	0.57***	0.76	0.65	0.73
95% CI	[0.39; 1.81]	[0.50; 1.13]	[0.46; 0.92]	[0.49; 1.07]
Wealth Quintile				
Lower®	1.00	1.00	1.00	1.00
Higher	1.41	0.59**	1.12***	0.57**
95% CI	[1.03; 1.93]	[0.43; 0.81]	[0.83; 1.48]	[0.42; 0.78]
Secondary Education				
No®	1.00	1.00	1.00	1.00
Yes	0.87	0.65**	1.99	0.90
95% CI	[0.67; 1.12]	[0.48; 0.87]	[0.57; 0.92]	[0.67; 1.18]

® refers to the reference category. Model adjusted for Sex, Social Group, Education, Asset Index and Major Occupation. Estimations are *significant at 0.10 ** at 0.05 level *** at .01 level. DF- Dairy Farmer

3.3. Perception and Willingness towards Dairy Farming Activities

3.3.1. Perception

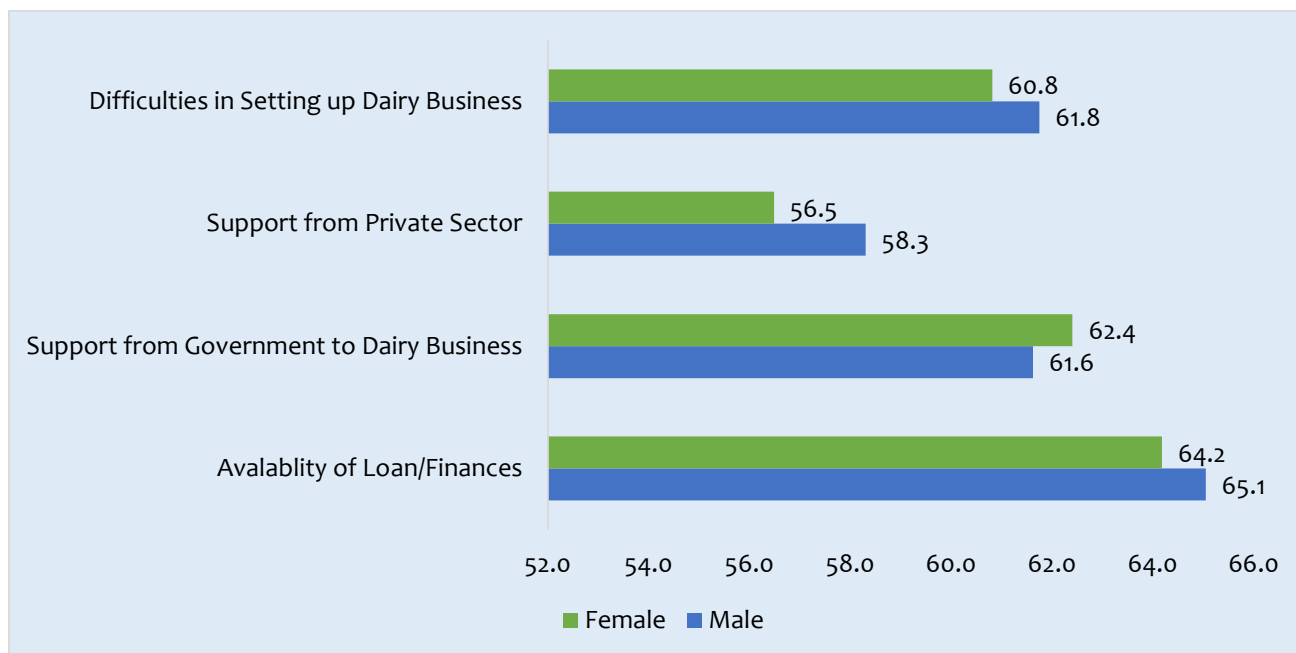
The percentage of youth who agrees that the dairy farming is a better employment is presented in Table 3.18. Among all the indicators mentioned where dairy farming is taken as a better employment, more than 80% of the study population has mentioned that the dairy farming is cost effective and has flexibility in the working hours.

Table 3.18 Percentage of Youth Agrees with Dairy As a better Employment, India

Dairy Farming as Employment	Male	Female	All
Job Opportunity Compared to Other Agricultural Jobs	66.3	63.2	65.4
Profit in Dairy Farming	77.9	77.5	77.8
Cost and Expenses in Dairy Farming	84.6	80.1	83.3
Struggle/Efforts in Dairy Farming	76.8	70.5	74.9
Working Hours in Dairy Farming	83.0	81.5	82.5
Skill Requirements	76.4	70.3	74.5
Incentive in Dairy Farming for Marginalised Social Groups	76.6	77.3	76.8
Work Safety in Dairy Farming	70.7	73.6	71.6
Youth Involvement in Dairy Farming	77.2	70.8	75.3
Job Security in Dairy Farming	63.7	61.8	63.1

Around 77% percent mentioned about better profitability; 76% mentioned about better incentives to marginalised groups; 75% youth involvement and 63% job security. Figure 3.2 present estimates regarding proportion (percentage) of youth who see dairy as a better employment opportunity to start. In the same vein, it can be observed from figure 2 that about 61.8 percent of male youth and 60.8 percent of female youth think that it is difficult to start (or set-up) a business venture in dairy sector. This clearly implies that a substantial proportion of youth perceive bottlenecks in starting a dairy business. Further, the support from existing businesspersons from both and public and private sector plays a significant role for a fresher to enter into the market. Estimates from Figure 2 suggest that about 58.3 percent of male youth and 56.5 percent of female youth think that private sector is supportive in starting a dairy business. Further 61.6 percent of male youth agrees that there is ample support from government to follow dairy as a full-time career prospect. Interestingly about 62.4 percent of female also concur with the same opinion. It is crucial for a dairy start-up to be provided with support from government organisations, and institution.

Figure 3.2: Youth's Perception Towards Dairy as an Employment, India



3.3.2. Willingness

In order to understand the youth's aspirations towards choosing career in dairy business or farming, table 3.19 presents percentage of youth's who responded in favour of choosing dairy business/farming. It is evident from table 3.19 that, willingness to choose dairy as a career option is noticeably (about three times) higher among female youth (65.2 percent) compared to male youth (23.1 percent). Overall about 33 percent of sample youth were reported to willingly pursue dairy as an employment activity. Across age stratification, willingness to choose dairy farming as a full-time activity was higher among those above 25 years (36.8) compared to those below 25 years (21.0 percent) of age. However, this gap is much higher in male youth as percentage male youth above 25 years (26.6 percent) is double than those below 25 years (13.8 percent).

Across social groups, overall, willingness towards dairy business was reported to be higher among youth from marginalised groups (SC/ST) (40.0 percent) compared to OBC (35.1 percent) and general (34.2 percent) categories. Further, no significant gap in willingness was reported across wealth classification. For instance, 35.9 percent of youth from top 50 percent wealthy households were reported to have willingness, whereas, it was 32.4 percent for those from lowest 50 percent. However, this gap was observed to be higher among female youth across wealth index, i.e. 52.5 percent and 73.3 percent among top and bottom 50 percent asset holders.

Table 3.19. Percentage of Youth with willingness to Switch to Dairy Business, Selected States, India

Background Characteristics	Male (%)	Female (%)	Total (%)
Age			
Below 25 years	13.8	41.9	21.0
Above 25 Years	26.6	71.2	36.8
Social Group			
SC/ST	27.7	64.7	40.0
OBC	27.1	64.9	35.1
General	22.2	66.7	34.2
Asset Index			
Below 50%	27.3	62.9	35.9
Top 50%	21.7	69.6	32.4
Education Level			
Below Secondary	26.3	73.3	41.7
Above Secondary	20.9	52.5	25.3
State			
Bihar	37.1	85.7	51.7
Gujarat	01.8	0.0	31.4
Karnataka	44.4	9.1	25.0
Madhya Pradesh	50.0	85.7	79.4
Maharashtra	25.3	67.9	35.7
Odisha	75.0	93.0	83.3
Punjab	36.4	89.0	50.0
Rajasthan	19.0	25.0	20.0
Tamil Nadu	12.0	20.0	13.1
All	23.4	65.1	33.0

It is also important to understand whether educated youth is willing to opt for dairy as a full-time business. Table 3.19 in this regard shows that overall youth with secondary or higher education (25.2 percent) have lower aspiration to become a full-time dairy farmer/business person compared to those with less than secondary education (41.7 percent). This pattern is also evident in both male and female youth.

Estimates from logistic regression model regarding association between youth willing to switch to dairy business and knowledge level is presented in table 3.20. Evidently, youth with higher level of knowledge about dairy activities have higher odds (OR: 1.70; 95% CI: 1.10; 2.64) of reporting willingness to switch to dairy business. This implies that increasing awareness and knowledge among youth is significantly associated with the youth's willingness. In addition, it may also be noted that females are more likely to report about willingness to switch to dairy business. On the other hand, compared to less educated youth, those with secondary education are less likely to switch to dairy business.

Table 3.20. Logistic Regression estimates, association between Youth willing to switch to Dairy Business and Knowledge about Dairy adjusted for Socioeconomic Correlates, Selected States, India.

	Willingness to Switch to Dairy business	
Knowledge	OR	95% CI
Low [®]	1.00	
High	1.70***	[1.10; 2.64]
Sex		
Male [®]	1.00	
Female	2.59***	[1.63; 4.12]
SC/ST		
No [®]	1.00	
Yes	0.95	[0.53; 1.70]
WQ		
Low [®]	1.00	
High	0.64	[0.35; 1.15]
Secondary Education		
No [®]	1.00	
Yes	0.41***	[0.26; 0.62]

[®] refers to the reference category. Model adjusted for Sex, Social Group, Education, Asset Index and Major Occupation. Estimations are *significant at 0.10 ** at 0.05 level *** at .01 level.

Precisely, regression estimates presented in table 3.21 shows that youth who are willing to switch to dairy business are less likely to have with favourable opinion regarding easy availability of loans. Although the estimates are not statistically significant but a negative association indicates that further improvements in access to finance is required for those who are willing to switch to dairy business.

Table 3.21. Logistic Regression estimates regarding association between Youth willing to switch to Dairy Business and opinion about availability of loans, Selected States, India.

	Easy Availability of Loan	
Willingness to Switch to Dairy business	OR	95% CI
No [®]	1.00	
Yes	0.97	[0.66; 1.43]
Sex		
Male [®]	1.00	
Female	1.05	[2.19; 4.67]
SC/ST		
No [®]	1.00	
Yes	1.21	[0.61; 1.59]
WQ		
Low [®]	1.00	
High	1.13	[0.35; 1.02]
Secondary Education		
No [®]	1.00	
Yes	0.67	[0.30; 0.62]

[®] refers to the reference category. Model adjusted for Sex, Social Group, Education, Asset Index and Major Occupation. Estimations are *significant at 0.10 ** at 0.05 level *** at .01 level.

Table 3.22. Econometric Association between youth’s perception towards availability of finance and occupation adjusted for Socioeconomic Correlates, Selected States, India

Dairy Farmer	Easy availability of Finance		Difficult to Start a Dairy Business/Farming	
	OR	95% CI	OR	95% CI
No [®]	1.00		1.00	
Yes	1.83***	[1.48; 2.77]	1.45***	[1.18; 1.79]
Sex				
Male [®]	1.00		1.00	
Female	0.88	[0.69; 1.12]	0.86	[0.68; 1.08]
SC/ST				
No [®]	1.00		1.00	
Yes	1.10	[0.81; 1.50]	0.76*	[0.57; 1.02]
WQ				
Low [®]	1.00		1.00	
High	0.95	[0.74; 1.22]	1.20	[0.94; 1.54]
Secondary Education				
No [®]	1.00		1.00	
Yes	0.57***	[0.46; 0.69]	0.85	[0.69; 1.04]

[®] refers to the reference category. Model adjusted for Sex, Social Group, Education, Asset Index and Major Occupation. Estimations are *significant at 0.10 ** at 0.05 level *** at .01 level.

In addition, it was also observed through logistic regression estimates that youth who are involved in dairy farming are more likely (OR: 1.83; 95% CI: 1.48; 2.77) to report favourable perception towards access to loans and finances (table 3.22). However, it may also be noted from same table that odds of reporting higher difficulties in setting up dairy business is significantly higher (OR: 1.45; 1.18; 1.79) for those involved in dairy farming. This implies that although youth involved in dairy find it easier to get access to loans for dairy farming, but they do not find it easy to start and run any dairy related venture. This significantly reflect sthat mere getting loans does not ensure the youth’s willingness to easily pursue the dairy business, it also involves several other entrepreneurial factors to start up a dairy business.

3.4. Gender and Social Norms

This section also discerns the youth’s opinion about the involvement of females in different activities of dairy farming. Table 3.23 is presents distribution of various activities between males and females of the selected states of India. The data is showing that there is almost equal contribution of males and females in the feeding of animals but we can see a slight difference in percentages when it comes to taking animals for grazing, which being 47% and 53% respectively.

Table 3.23. Distribution of Activities/Tasks between Males and Females, Selected States, India

Activities	Male (%)	Female (%)
Feeding of Animals	50	51
Taking Animals for Grazing	47	53
Healthcare and Management	60	40
Cultivation of Fodder	58	42
Fetching Water	53	47
Milking and Processing	41	59
Cleaning Animals, Utensils and Animal Shed	43	58
Marketing and Selling of Milk	60	41
Maintenance of Record/Book keeping	70	30
Purchasing and Selling of Animals	79	21

The data shows that males are more involved in activities like healthcare and management as compared to females as 60% of males are involved in healthcare and management and only 40% of females have such involvement. When it comes to activities like cultivation of fodder and Fetching water then again, the involvement of males are higher than females i.e. 58% and 53% of males and 42% and 47% of females respectively. We can see that there are activities like milking and processing and cleaning animals, utensils and animal shed where participation of females is much higher than males. 59% of females are involved in milking and processing while only 41% of males are involved. Similarly, 58% of females are involved in and cleaning animals, utensils and animal shed while only 43% of males are involved in same. Activities like marketing and selling of milk, maintenance of record/book keeping and purchasing and selling of animals are much male oriented as we can a huge involvement of male in these activities as compared to female. 60% of males are involved in marketing and selling of milk while only 41% of females are doing the same. Similarly, 70% and 79% of males are involved in maintenance of record/book keeping and purchasing and selling of animals while the involvement of females is just 30% and 21% respectively. From Table 3.23 suggest that females are much involved in indoor activities like feeding of animals, taking animals for grazing, milking and processing and cleaning animals, utensils and animal shed. We can see a huge participation of females in these activities while the males are much involved in outdoor activities like cultivation of fodder, fetching water, marketing and selling of milk, maintenance of record/book keeping and purchasing and selling of animals where they are participation in huge numbers.

The above table 3.24 presents information regarding the Percentage of youth with broad reasons to not involve Female in Dairy Farming of India. The large amount of Youths belonging to male and female categories believes that the biggest reason behind not involving females in dairy farming is the security/safety issues and that there is more physical capacity required. About 30 percent of male

youth and 34 percent of female youth believes that the reason behind not involving female in dairy farming is security/safety issues while 33 percent of male youth and 38 percent of female youth believes that the reason behind not involving female in dairy farming is that there is more physical capacity required. Similarly, 16% of male youth and 21% of female youth believes that the reason behind not involving female in dairy farming is Social and Cultural Norms, 7% of male youth and 4% of female youth believes that the reason behind not involving female in dairy farming is that they cannot Manage Marketing and Sale while 13% of male youth and 3% of female youth believes that there are some other reasons behind not involving female in dairy farming.

Table 3.24. Percentage of Youth with Broad Reasons to Not Involve Female in Dairy Farming, India

Reasons	Male (%)	Female (%)
Security/Safety Issues	30	34
More Physical Capacity Required	33	38
Social and Cultural Norms	16	21
Cannot Manage Marketing and Sale	7	4
Any Other	13	3

Table 3.25. Youth response Towards Starting of Dairy Business/Farming in their Households, Selected States, India

State	Male				
	Encouraged by Parents/Relatives/Friends	Introduced by NDP/DCS	Motivated by Government NGO	Self-Motivated	Inherited
Bihar	32	48	5	4	11
Gujarat	41	16	16	26	1
Karnataka	87	3	6	0	3
MP	50	30	2	4	15
Maharashtra	50	15	1	28	6
Odisha	62	17	5	14	2
Punjab	88	0	0	12	0
Rajasthan	47	24	5	7	17
Tamil Nadu	65	35	0	0	0
All	53	24	5	13	7
State	Female				
	Encouraged by Parents/Relatives/Friends	Introduced by NDP/DCS	Motivated by Government NGO	Self-Motivated	Inherited
Bihar	30	56	0	2	12
Gujarat	25	25	17	33	0
Karnataka	76	17	7	0	0
MP	3	97	0	0	0
Maharashtra	75	14	3	6	3
Odisha	72	19	3	6	0
Punjab	100	0	0	0	0
Rajasthan	22	54	9	1	13
Tamil Nadu	65	30	0	4	0
All	43	45	4	3	4

Table 3.25 reports the Youth response towards Starting of Dairy Business/Farming in their Households in Selected States of India. Bulk of the males are motivated because of parents/relatives and friends. Similarly, females in Karnataka, Maharashtra, Odisha and Punjab are into dairy farming majorly because of motivation from parents/relatives and friends which makes it 76%, 75%, 72% and 100% respectively. The Youth comprising both male and female of other states are also getting motivated by both NDP/DCS and their own parents, relatives and friends to start the dairy business. Though motivation by NGOs, self-motivation and inheritance are also responsible for the dairy business but it does not have a visible impact.

Table 3.26. Logistic Regression estimates regarding association between Self-Motivated Youth in Dairy Business and Socioeconomic Correlates, Selected State, India

	Self-Motivated Youth in dairy Business	Encouraged by Parents/relatives/Inherited for Dairy Business	Introduced by NGOs/DCS/NDP
	OR	OR	OR
Knowledge			
Low®	1.00	1.00	1.00
High	0.40***	1.22**	1.53***
95% CI	[0.26; 0.60]	[0.97; 1.52]	[1.19; 1.96]
Sex			
Male®	1.00	1.00	1.00
Female	0.30***	1.02	1.69***
95% CI	[0.15; 0.57]	[0.77; 1.32]	[1.28; 2.24]
SC/ST			
No®	1.00	1.00	1.00
Yes	0.97	0.84	1.15
95% CI	[0.52; 1.80]	[0.59; 1.17]	[0.79; 1.65]
WQ			
Low®	1.00	1.00	1.00
High	0.43***	1.29**	0.87
95% CI	[0.24; 0.76]	[0.98; 1.69]	[0.64; 1.17]
Secondary Education			
No®	1.00	1.00	1.00
Yes	0.97	1.29**	0.91
95% CI	[0.66; 1.42]	[1.02; 1.61]	[0.70; 1.16]

® refers to the reference category. Model adjusted for Sex, Social Group, Education, Asset Index and Major Occupation. Estimations are *significant at 0.10 ** at 0.05 level *** at .01 level.

Logistic regression estimates from table 3.26 shows that youth with higher level of knowledge about dairy farming activities are less likely (OR: 0.40; 95% CI: 0.26; 0.60) to have started dairy business by self-motivation. It can also be observed that the likelihood of reporting inherited dairy business is higher for those with significantly higher (OR: 1.22; 95% CI: 0.97; 1.52) level knowledge about dairy farming activities. This also reflects that promoting dairy business via government and social interventions are more likely to yield better results.

4 Qualitative Insights

4.1. Knowledge, Skills and Awareness

Dairy Animal Breeds

- The young dairy farmers in Punjab are knowledgeable on the type of breeds recommended for high production. The most common cow breed was Holstein Friesian (HF) and Jersey, whereas the Murrah was common among Buffaloes. Likewise, in Odisha, young dairy farmers have considerable knowledge about various breeds and also showed awareness that due to climatic factors certain breeds (such as Holstein Friesian) are not suitable for rearing in parts of Odisha.
- In Bihar, several young dairy farmers belonged to marginalized sections of the society but displayed good knowledge and awareness about the breeds of cows and buffaloes in the region. Also, young women dairy farmers had good understanding of the various breeds.
- The knowledge, however, was more appropriate from a local contextual perspective. For instance, in Tamil Nadu the young dairy farmers reported knowledge of only locally available breeds. Nevertheless, they also demonstrated awareness on issues around breed productivity and expenses. For example, several young farmers know that Jersey and HF are cross breeds with good productivity but also higher rearing expenses.
- Furthermore, compared to older generation, observations from Gujarat reveals that youth engaged in dairying have better awareness around breed type and dairy business prospects. For example, the youth perceived that there is more scope with indigenous breeds (Kankrej) in future as the maintenance and rearing is easier. Nevertheless, young men demonstrated greater knowledge than women in market and cost related knowledge of breeds.
- Youth who are not directly or indirectly engaged in dairy farming had considerable less knowledge of breeds, their productivity potential and rearing expenses.

Feeding Practices

- Rural youth in Punjab reported that the productivity of milk can be increased by feeding relatively large quantity of green fodder, good portion of dry fodder and some essential supplements and minerals. In fact, youth belonging to large landholding families made pit silage to save the green fodder during dry period.
- Knowledge of fodder was found to be associated with milk union membership and participation of the youth in such associations. For instance, in Bihar young dairy farmers associated with milk unions had relatively better knowledge of feeding practices than those who are not. In fact, such dairy farmers continue to engage with customary or family practices in cattle feeding. Some young dairy farmers also reported that feeding of mineral mixture can help to increase milk production by about 0.5 litres per cattle.
- In Madhya Pradesh, young dairy farmers reported awareness around ration balancing or balanced nutrition for enhancing productivity of milch animals. The feeding material of animals comprised of dry fodder, green fodder and concentrate including the grazing. In fact, young women possessed more knowledge than their male counterpart regarding the feeding requirements. This is largely observed because of their active involvement in cattle rearing and management in the household.
- Knowledge of locally available plants and fodder is a critical factor in dairy sector. Youth possessed good knowledge of local plants and farm varieties used for cattle feeding. For instance, in Gujarat, youth reported using several local plants as fodder. They informed about *banni* which was high in protein and cotton seed as dry fodder. Some farmers were also informed about availability of crop cutter for green fodder at the union as it could be helpful for easy digestion. Similarly, in Karnataka young farmers reported using groundnut cakes wheat bran for increase in milk production. Most of the young dairy farmers were also knowledgeable about the prices of the various mineral mixtures and supplements.

Dairy Animal Diseases and Veterinary services

- Awareness levels among youth regarding type of diseases among dairy animals varied across regions as well as by gender. Young males directly engaged in dairy sector had relatively more information on type of diseases. For instance, some of the commonly reported diseases in Punjab are: Haemorrhagic Septicaemia (HS), Ticks Manifestation, Foot & Mouth Disease (FMD), Pneumonia, Mastitis, Indigestion, Brucellosis (Zoonotic diseases) and Dystocia (problems during

labour stage). Youth interactions in Maharashtra, Bihar, and Rajasthan reveals lower information and awareness on dairy animal diseases.

- Most of the youth engaged in dairy had knowledge about specific periods for occurrence of some key diseases (mainly occurred during rainy and summer season). However, it is observed that most of them had limited information regarding precautionary measures against contagious diseases. Awareness about cleanliness and hygiene also varied.
- Young dairy farmers had knowledge about different vaccines and their dosage (bi-yearly) for some of the common needs or diseases among animals like de-worming FMD etc. The farmers in most of the villages were aware about preventive care which needed to be provided to the animals to avoid any kind of prevalent morbidities especially in the rainy season. Also, in some states, such as Gujarat, young farmers had knowledge of veterinary camps held at least once a week where they could take their animals for free check-up and vaccinations.
- In Rajasthan, youth were aware of the veterinary services in the region. But it was observed that awareness levels are much better among those having higher levels of education. However, it is also noted that mostly young males are involved in approaching the veterinary doctor as well as informing the union about the emergency.
- Some geographical variations in knowledge and awareness regarding veterinary services is observed. For instance, youth in Bihar had limited awareness about veterinary services. In contrast, in Madhya Pradesh some of the young dairy farmers had awareness about veterinary services as well as had received training for AI. However, functioning and responsiveness of the government as well as union doctors reportedly varied across regions. But it was also reported that most of the vaccination by government or union doctors are provided either free of charge or with a minimal fee.

4.2. Awareness about Programs and Products

Clean Milk Production

- Awareness among young dairy farmers on Clean Milk Production (CMP) varied and was influenced by engagement displayed by milk union across states and districts. For instance, in Gujarat the young farmers had more knowledge of CMP which was attributable to awareness campaigns on topics related to animal hygiene and clean milk production. In Maharashtra, young dairy farmers

reported of cleaning hands before and after milking and also allowing some time for animal to be prepared for milking.

- In case of Punjab, youth who have attended the awareness camps and training programmes have adopted modern techniques and technologies in dairy farming such as animal management, breeding innovations and ration balancing programme. However, young women have limited exposure and are not much aware about the modern techniques and technologies.

RBP and VBMPS

- In Gujarat, most of the interviewed youth were not aware of the RBP programme. During interactions with the youth, it was observed that the men have greater awareness regarding different trainings than women. Nevertheless, only information disseminated through door-to-door awareness campaigns and training programmes at the DCS level seemed to reach and stay with the farmers. Farmers were not aware of any other kind of training programmes held at the union level or higher levels.
- Regional variation in awareness regarding RBP and VBMPS was also apparent. For instance, in Rajasthan and Tamil Nadu, young farmers had knowledge of RBP and its benefits of giving balanced diet to cattle. As well as the farmers were aware of the mineral mixture. Whereas, in Bihar, most of the youth have no information about VBMPS and RBP scheme. In some areas it is observed that youth from better socioeconomic categories have participated in more awareness camps and training programmes as compared to those from weaker sections.
- In Maharashtra, young participants were aware of the programme run by the Milk Union such as Clean Milk Production, Mastitis control programme, ration balancing programme, various subsidies provided by government and by Union, incentives and bonus given by DCS as well as Union. Majority of participant have discussed about these programme in FGDs and also informed that they could get subsidies for cattle feed, mineral mixture, chaff cutter machine, milking machine, calf rearing, insurance and on several vaccines. Moreover, participant had known about the various awareness programmes run by district milk union such as LRP training, secretary training, various orientation programmes, awareness camps irrespective of their social, educational and gender background in all four districts.
- There was no gender wise difference in knowledge regarding these policy programmes among participants. However, participants aged below 23 and who were not belong to dairy farming

business had less knowledge about ration balancing, subsidies and incentives for cattle owners in their respective districts.

- In Karnataka, majority of participants had knowledge about clean milk production programme. But they were unaware of RBP since the acceptance of RBP was less in Karnataka due to unavailability of required fodder. It was observed that youth were aware about calf rearing scheme which was subsidised programme in Karnataka. The awareness about various scheme on subsidies, trainings such as farmers training, orientation programmes, training provided by Karnataka Milk Federation were high among the participants in Rural Bangalore and in Udupi than in the participants in Uttar Kannada district.

4.3. Gender and Social Norms

- Compared to young men, the participation of young women was widespread and large in respect of dairy farming than the cultivation of crops in the various states. There was more or less similar levels of engagement in milking activities. However, role and participation of women in decision making was lower. The young women have low participation in decision making in aspects related to land and placement for animal shed, vaccination against contagious diseases, grazing of animals and breeding practices. They had limited role in decision making around utilization of income from milk. However, women have more participation in decision making about the milk consumption at the household level.
- Knowledge around issues related to animal rearing differed by gender. The interviews reveal that young women farmers have low knowledge in the area of artificial insemination or other aspects of health care such as vaccinations against the diseases. Women also had less grip on issues related to dairy marketing. Nevertheless, they displayed good knowledge of daily care including fodder management and milking activities. In some states such as Tamil Nadu, women had far more detailed knowledge about feeding practices than male youth.
- Young women in most of the DCS were aware of Clean Milk Production (CMP) practices as separate trainings were provided to them as part of the VBMPS scheme. The female of the household is usually engaged in cleaning, feeding and milking but when it comes to taking the cattle to field for grazing, it is mostly done by the male of the household. Participation of females is particularly higher if the number of cattle is low.

- However, education level affects their interest and level of engagement in dairy activities. For instance, in Madhya Pradesh young women with higher education seemed less interested in daily rearing activities but were more interested in aspects of dairy management.
- The transportation of milk from house to DCS depends upon the distance at which the DCS is located. If the DCS is located nearby, the female takes the can to the DCS and if it is located at a distant place then transportation is done by male. Women DCSs has more participation of unmarried youth and this could be because the married ones are also engaged for other household activities.
- Awareness around policies and schemes of the government or the milk union was largely determined by education level of the youth. Young and educated women were more aware and informed about the various benefits and bonuses available to dairy farmers.
- Young men and women from a dairy farming background have more knowledge and experience about milk collection and processing than those with non-dairy background. Irrespective of the caste and educational background, all the young men deliver milk to dairy cooperative societies considering it as a labour intensive job to be performed only by the young men in the family.
- Nevertheless, exceptions are also noted. For instance, in Ujjain young women have demonstrated that dairy can be operated successfully irrespective of one's gender or socioeconomic background. The case of Nayakhedi village of Ujjain is of high relevance as this DCS is fully managed by women dairy farmers and entrepreneurs. Both the secretary and LRP, 22 and 19 years old respectively had keen interest in dairy farming. DCS has enabled them to gain confidence in their dairy management skills, while allowing income-earning opportunities through the process.
- Both young men and women often help their families in dairy activities. While the men preferred to do outside activities such as transporting milk to DCS, taking cattle to veterinary doctors and making feeding arrangements, the women helped in feeding, cleaning and milking activities.
- In the villages of Gujarat, where RBP was adopted, both the male and female youths were aware of the importance of mineral mixture which was to be provided to the animals however there were problems found in its adoption as a practice. The female youth could only adopt dairy farming after their marriage if it was the main occupation in the other house. Besides, men had more knowledge about subsidies than the female members.

- In Bihar, young women had less participation in dairy activities. The social norms, particularly around marriage and dairy work perception in the community were major barriers. This was more relevant when the youth belonged to relatively advantaged socioeconomic background. Nevertheless, the perception of youth towards young women being engaged in dairy farming was positive and participants were acknowledging the efforts women put in dairy farming.
- Digital transactions were limited in the village level dairy sector. This also has shaped gender roles. In particular, women farmers have more financial inclusion and autonomy where payment mechanisms are linked with bank and pouring members are women. However, in case of cash transactions the role of males is more dominant.
- In fact, young women participants from Udipi suggested that dairy has provided opportunities for women to be engaged outside the household domain. The potential of women in dairy farming and various avenues that are available to dairy farmers and entrepreneurs was also recognized.

4.4. Willingness and Perceptions

- There was mixed response among youth as regards their willingness to engage and undertake dairy farming as an employment avenue for income prospects. It is revealed that their willingness and attitude towards dairy farming is contingent upon several factors and they acts as constraints to dairy farming. However, with some active policy support such as loans and subsidies for several dairy related inputs, participants were willing to engage more in dairy farming.
- Local context and agro-climatic environment were key enabling factors that were shaping the willingness of the youth to undertake dairy farming. It is observed that more favourable responses were associated with contexts displaying good availability of water and fodder as well as considerable landholding. In the absence of favourable conditions, youth would consider engagement in dairy only as a subsidiary occupation to farming. With increasing population, there is a pressure on landholding which is shrinking because of both expansion of household size as well as pressure from non-agricultural activities. This has created concerns around grazing prospects as well as fodder availability and prices.
- Majority of the participants were not of the view that their children should continue dairy farming citing reasons like increasing input cost, stagnating procurement prices, unavailability of fodder

and water scarcity. Participants who were also enrolled for higher education were not willing to pursue dairy farming and were aspiring for securing regular salaried employment. However, participants aged 25 years and above had no major alternatives and were continuing dairy farming in the absence of other employment opportunities.

- Attitude and willingness toward dairy farming also differed across some districts. For instance, female participants in Kolhapur and Ahmednagar were more positive about pursuing dairy farming as a source of self-employment but demanded for safeguarding against income loss and livestock-related uncertainties. Similarly, in Karnataka, dairy sector was perceived as an important avenue for sustained livelihoods and self-employment.
- In Tamil Nadu, the youth are less interested in dairy farming but are pursuing this activity because of lack of opportunities in non-farm sectors. To put it differently, non-farm activities among the youth have taken the centre stage. Most of the youth participating in dairy farming acquired land from parents (inherited) whereas very few reported of any land purchase for this purpose. Scarcity of natural resources including land as well as financial constraints are important concerns requiring greater governmental or policy support.
- Nevertheless, dairy is a main subsidiary activity alongside agriculture and is an important source of income for small and marginal landholding families. The introduction of VBMPs as well as some essential DCS level infrastructure such as BMCs and Chilling Centres (CCs) have helped employ a few youth members as contractual staff and labourers for cleaning and maintenance purposes.
- In Madhya Pradesh, some of the youths in the entire study group wanted to continue their family's business in dairy sector. They were willing to participate in dairy farming without any compulsion by their parents. In fact, majority of them wanted to pursue dairy farming in the future. Educated youth in rural areas are keen to enter into dairy enterprise by learning new techniques and thus extending support to their families through this increasingly competitive sector. Unlike agriculture sector where the younger generation seemed reluctant to take up the traditional farming activities, it was observed that the youth had positive inclination towards dairy farming. It was because they perceived dairy as a more profitable avenue than farming and also because dairy farming provided a steady and regular source of income as against income from agriculture which is seasonal.
- Furthermore, in Madhya Pradesh, the youth possess great vigour and enthusiasm when it comes to learning and using knowledge to bring about a transformative change. They are more inclined

to work with new technologies and more likely to have attained a higher level of education level than the generations before them. During discussions, peer-to-peer learning, inter-generational exchange of experiences/knowledge in dairy sector and trainings were noted to be some of the key motivational factors for youth to engage in dairy sector. Young women managing an entire DCS in Nayakhedi (Ujjain) act as role models and motivators to other females on constant day to day basis.

- Availability of loans and credit for dairy farming is an important constraint in Bihar. Youth belonging to poorer families often receive loans for purchasing of cattle from the private sector and repay the loan by selling their milk produce to the loan providers. These youth are interested in obtaining loans at lower rate of interest from government or milk union and are expecting facilitation from milk unions for joining dairy business.
- In Gujarat, the interest of the youth in dairy varied from district to district with multiple factors affecting the same. Though the youth acknowledged the efforts of the government to encourage dairy including the different schemes, programmes, trainings and subsidies that are provided, they still felt that the rate at which the prices of cattle feed and the likes increase is much higher than the rate at which the prices received by the farmer based on fat level increases. Similarly, in Rajasthan the low and fluctuating profitability and low wage earnings in dairy industry are major factors. Consequently, the youth do not perceive dairy farming as an ideal sector for business or employment. In many of the places dairy was a secondary occupation of agricultural farmers.

4.5. Aspirations among Youth

- It was observed that aspirations toward life among youth were shaped by several factors such as socio-economic and demographic characteristics, parental influence, educational level, peers influence /pressure, lived experience etc. The youth largely aspire to be engaged in formal sectors as regular salaried employee.
- Majority of the youth perceive that dairy sector lacks income and employment security and is vulnerable to natural calamities such as drought, animal fatalities as well as price fluctuations in market. However, due to lack of diversification, majority of the youth continue to be involved in dairy farming. However, in states such as Bihar and Gujarat a more favourable attitude toward dairy farming is observed. This is attributable to thriving business models such as those in Anand or in the form of milk unions in Bihar.

- Some of the participants showed disinterest toward dairy farming. Majority of them were more educated than others and they grew different aspiration from labour market. White collar jobs, jobs in public sector were preferred among educated youth. Especially it was revealed from FGDs that educated men mostly preferred to settle in cities. It is observed that people thought that the migration from village to cities may bring them betterment and prosperity. In case of Punjab, international migration was a preferred option among youth.
- Most of the parents do not wish their children should do dairy farming. Parental and peer influence does matter in shaping the aspiration. Farmers who have large landholding, wish their children to conduct dairy business at a managerial level given the fixed price and other incentives for dairy farming. The unmarried youth were of the opinion that time devoted in dairy farming is much more than any other job. Besides, the dairy farmer has to be punctual in all activities like milking, feeding, cleaning, vaccinations etc. Further, it is revealed that ‘shame’ is attached to dairy farming that one need to clean animals and sheds. Lack of skill development and training programs keeps the youth away from dairy farm whose families already are not engaged in this sector.
- The youth in Gujarat considered the possibility of dairy being one of the many businesses. This also did not mean that they were comfortable with rearing and cleaning the cattle. Thus, if they were convinced that dairy could be a business which could be ventured into, they would hire labour to the work. The thought process behind this is mainly that as the standard of living increases, the youths would prefer giving their precious hours of work in activities that would require less of physical labour and earn more returns. There also seemed to be a higher risk involved in dairy as compared to other business, which was also observed to be another de-motivating factor for the youth to adopt dairy.
- Youth are disadvantaged in dairy farming mainly because of low levels of education and dairy related job skills. Lack of participation in awareness camps and training programmes as well as inadequate provisioning of financial services are important deterrent in encouraging dairy-related career among youth. While there are increasing number of financial services and funding opportunities such as NABARD subsidy scheme, credit facilities for purchase of animals but increasing awareness and inclusion in these programmes is an important concern.
- In addition, lack of timely insemination, high cost of concentrates and mineral mixture, high cost of veterinary services are among the major concerns encountered by dairy farmers. Infrastructure and family outlook toward dairy farming also affected participation of youth in dairy farming. This was

largely attributable to variations in landholdings, access to natural resources and also social and gender roles of youth in dairy.

4.6. Case Studies

Komaleshwari Vyas, 19 years

Local Resource Person (LRP), Nayakhedi DCS, Ujjain

Komleshwari Vyas hails from Nayakhedi village in the Ujjain District of Madhya Pradesh. This 19-year-old girl has revolutionized the dairy sector by displaying exemplary commitment toward strengthening the role and participation of women for involvement in the dairy sector. Komleshwari works as LRP in Nayakhedi DCS since April 2018 wherein her family members are also the DCS members. She is pursuing graduation from Ujjain. Her keen interest in animal husbandry has inspired her to join the Animal Health Worker Training Program from Madhavnagar Veterinary Hospital in Ujjain. She is now fully trained to perform AI activities in Nayakhedi village. Ms Vyas aspires to become a veterinary doctor and continue to serve the animals. She works tirelessly from dawn to dusk for milk collection in Nayakhedi and is engaged in all key activities such as milking and maintenance of animal hygiene. She often rides motorbike for milk collection and distribution and is also fond of driving tractors thus dismantling several gender stereotypes.

Vikas Kumar, 29 years

Dairy Farmer, Pachopur DCS, Samastipur

Vikas Kumar is a resident of Pachopur village of Rosera block of Samastipur district. He has completed elementary education from his village school. His family is engaged in agriculture but due to frequent drought conditions he had migrated to Karnal in search of better work opportunities. In Karnal, he observed that almost every household is engaged in animal husbandry and on an average possess 7-8 milch animals. He found that the cost of these animals is about Rs. 70,000/- and produce about 80-85 litres of milk per day. Vikas enrolled for dairy farming training at Karnal and on completion returned to his native place to work as a dairy farmer. He interacted with other small dairy farmers in his village and informed them about schemes and opportunities that could be availed through milk unions. They formed a DCS in Pachopur. Vikas works tirelessly to increase milk production. His household owns around 20 cows with good daily production to strengthen the role of dairy as main income generating sector. Vikas has inspired several youths from his and other neighbouring villages to take up dairy farming as an occupation.



Brajesh Kumar, Vermicompost Entrepreneur, Korai Village, Begusarai



Brajesh Kumar, Vermicompost Entrepreneur at an outreach session, Korai Village, Begusarai



Ms Komaleshwari Vyas
Local Resource Person (LRP), Nayakhedi DCS, Ujjain



Mr. Vikas Kumar, Dairy farmer, Pachopur
DCS Samastipur

Brajesh Kumar, 28 years

Vermicompost Entrepreneur, Korai Village, Begusarai

Brajesh Kumar from Korai village of Begusarai district has completed his postgraduate diploma in electronic and communication engineering from ISM Dhanbad. He worked in Delhi for 2 years in a private firm but soon returned back to his village. Sugarcane farming is the main occupation in his village and it requires vermi fertilizer inputs as it contains water-soluble nutrients and is an excellent nutrient-rich organic fertilizer and soil conditioner. Brajesh was inspired by this and experimented vermicomposting on his own by preparing a 10 feet pit. With experience, he expanded the activities and started selling vermi fertilizer to villagers who were largely dependent on rain and chemical fertilizer for sugarcane farming. Later he expanded the activities and leased about 3 acres of land for vermicomposting and received support of the Government of Bihar as well as loan from major national bank. Presently, Brajesh is producing annually 2000 quintal of vermicompost as well as 200 litres of milk per day. He also produces bio-gas and mineral mixture for animals. Brajesh has been promoting dairy farming through trainings and interactions at schools and colleges about benefits of dairy related activities such as vermicomposting.

Kishor Bhai, 35 years

Dairy Entrepreneur, Anand

Kishor bhai started dairy farming with about 6 milch animals but gradually used AI to increase the number of milch animals. He is a registered member of the dairy cooperative and has received training for employing scientific methods of dairying that is helpful in cost-effective management of dairy. The methods are helpful for him for preventing cattle diseases and also for enhancing milk productivity. He has around 25 cows in his farm and has employed 2 helpers for the purpose of cleaning, feeding and milking. He produces about 120-140 litres per day. Earlier most of the work was manual but in recent years he has started using machines for milking purposes.

Aruna Parekh, 33 years

Dairy Entrepreneur, Banchkhera Village, Bhilwara

Aruna Parekh is a widow. She is a member of Banchkhera society of Bhilwara. Though she has no proper education but she has demonstrated that dairy is a viable livelihood option. She started dairy farming with only 3 cows but over the years she is counted among the most successful members of

the milk union with 20 cattles and an annual turnover of Rs. 1 lakh. She has received awards and recognition for her success from many agencies.

Umajee Bhai Patel, 35 years

Dairy Entrepreneur, Banas

Umajee Bhai Patel is a graduate involved in dairy farming for the last 10 years. He started dairy farming with only 2 cattles but currently manages a herd of 12 cattles including 11 cows and a buffalo. Earlier when DCS was not there in his village, it was very tedious for him to carry milk in heavy cans and sell it to door to door. After BMC installation in his village, it has become convenient for him to pour milk at DCS. They accept any amount of milk if its quality is good and offer reasonable price for the produce. From the Government of Gujarat as well as the Milk Union, Umesh Bhai has received subsidies for purchase of chopping machine and milking machine. Through the Milk Union he also receives veterinary services for the vaccinations and treatment of his cattles. Productivity of cattle has increased due to veterinary services and good quality fodder. Consequently, he has increased his livestock size and is now producing around 50-60 litres of milk per day. His annual income has increased from Rs. 1-2 lakhs to Rs. 10-11 lakhs with a savings potential of about Rs. 5-6 lakh per year. His children are also interested in dairy farming and are learning business opportunities and technologies to advance this household activity.

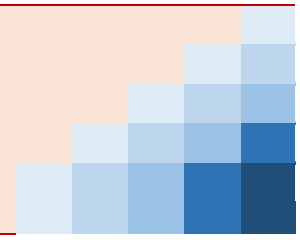
Kuldeep Kaur

Dairy Entrepreneur, Sudhar Village, Ludhiana

Kuldeep Kaur of Sudhar village is a DCS member of the Verka Milk Plant, Ludhiana. A matriculate by education and the owner of 3.0 acres of land, this young lady farmer has actually introduced the use of technology in the lives in of dairy farmers of her community. Kuldeep Kaur received training in silage preparation and demonstration under NDP I from Verka Milk Plant in Ludhiana. With the adoption of silage making, she was able to reduce expenditure on fodder. Further, this helped in saving time and labour costs. With proper management she also witnessed improvements in animal health, increase in milk production and increase in the fat content of the milk. The physical effectiveness of maize silage in the rumen improved the availability of the starch contained in all parts of the plant. As a result, the daily milk yield in the herds studied increased by up to two litres per cow. Furthermore, the rumen-friendly structure of the silage improved the health of the herd.

5

Conclusions and Recommendations



5.1. Key Conclusions

- **Knowledge on dairy sector:** Basic awareness regarding dairy-farming is high among young dairy farmers (67.5 percent) is high but there is further scope to improve specific knowledge on various aspects of dairy farming. It is observed that awareness about ration balancing programme (54.5 percent) was maximum among youth involved in dairy farming. On the other hand, information on specific schemes like calf protection was lacking as only 25.4 percent reported awareness on these issues. In order to have a holistic understanding regarding level of knowledge among youth about different dairy farming activities, knowledge index was estimated based on Principle Component Analysis (PCA). Overall, it is noted that percentage of youth in higher knowledge bracket is significantly high for those involved in dairy farming compared to those who are in any other occupation.
- **Family and Relatives as main source of knowledge:** Evidently 68.6 percent of male and 56.3 percent of female youth farmers have acquired knowledge from family members. This implies that a majority of youth involved in dairy farming inherit the knowledge about it from their families and therefore it is highly likely that youth who have inherited dairy farming will have higher knowledge. This also provides an opportunity to develop institutional and formal mechanisms for promotion of dairy sector knowledge among the youth.
- **Youth from vulnerable populations benefit from trainings:** It was found that higher percentage of youth from socially and economically backward background received training on VBMPS. For instance, about 36.6 percent of youth from lower asset index received training on VBMPS against 31.7 percent from upper 50% of asset index. This gap (about 15.3 percent) was even much higher in case of training on ration balancing program. The value of correlation between youth with higher knowledge of RBP and who have received training on RBP is significantly positive and high. This implies that higher level of training is positively correlated with higher level of knowledge among youth farmers. The estimates from logistic regression further confirms the positive and significant association.

- Need for training in various areas:** The percentage of male and female requiring trainings is: Basic dairy training is 69.5% and 82.8%; Disease control 65.5% and 72.7%; Value added milk products 50.7% and 52.3%; Manure management 45.7% and 50.2%; Ration balancing 69.2% and 70%; Fodder cultivation and preservation 66.4% and 68.5%; Waste management 49% and 55.2%; Milk storage 58.4% and 63.1%; Hygiene practices 69% and 75.9%; Infrastructure development 64% and 65.4%; Record and book keeping 59.7% and 61.1%. There is significant and positive correlation between youth with higher knowledge and their need for training. For instance, the value of Pearson correlation coefficient for those having knowledge about RBP and need training on RBP is 0.277. It can be inferred that knowledgeable youth are not satisfied with the current level of knowledge and are interested in further understanding the sector and activities.
- Knowledgeable youth are concerned about dairy sector prospects:** Econometric analysis suggests that knowledgeable youth involved in dairy farming are 44% less likely to have a favorable opinion regarding dairy as a better job opportunity as compared to their counterparts. Same group also have 34% less likely of reporting higher job security in dairy business. This may be because with improving knowledge, the youth are increasingly aware of problems and difficulties in dairy venture. Regression estimates also shows that knowledgeable dairy farmers have higher odds of reporting struggle in starting and running dairy farming and related business. About 61.8 percent males and 60.8 percent females think that it is difficult to start (or set-up) a business venture in dairy sector. This clearly implies that a substantial proportion of youth perceive bottlenecks in starting a dairy business.
- Willingness to choose dairy as a career option:** The willingness to engage in dairy sector is noticeably (about three times) higher among female youth (65.2 percent) compared to male youth (23.1 percent). Overall only one-in-three youth (about 33 percent) were willing to pursue dairy as an employment activity. Willingness towards dairy business was reported to be higher among youth from marginalised groups (SC/ST) (40.0 percent) compared to OBC (35.1 percent) and general (34.2 percent) categories. Youth with secondary or higher education (25.2 percent) have lower aspiration to become a full-time dairy farmer/business person compared to those with less than secondary education (41.7 percent).
- Constraints in shifting to dairy:** Econometric analysis suggests that youth with higher level of knowledge about dairy activities have higher odds (OR: 1.70; 95% CI: 1.10; 2.64) of reporting willingness to switch to dairy business. However, regression estimates shows that youth who are willing to switch to dairy business are less likely to have with favourable opinion regarding easy availability of loans. This indicates that further improvements in access to finance is required for

those who are willing to switch to dairy business. The youth stated several other constraints including support from family, financial availability, business risk, uncertainty regarding market factors (demand), care of milch animals and their productivity etc.

- **Gendered role in dairy:** There is almost equal contribution of males and females in the feeding of animals. However, there are certain activities like milking and processing and cleaning animals, utensils and animal shed where participation of females is much higher than males. Females are much involved in indoor activities like feeding of animals, milking and processing and cleaning animals, utensils and animal shed. Males are much involved in outdoor activities like cultivation of fodder, fetching water, marketing and selling of milk, maintenance of record/book keeping and purchasing and selling of animals. Substantial proportion of youth believe that the biggest reason behind not involving females in dairy farming is the security/safety and that there is more physical capacity required. On the other hand, reasons like social and cultural norms and marketing management were found to be unpopular and insignificant among the youth.
- **Aspirations and contextual factors play critical role:** Factors such as socio-economic and demographic characteristics, parental influence, educational level, peers influence /pressure, lived experiences influence the aspirations in the youth. These factors are similar in all regions. Local context and agro-climatic environment, like increasing input cost, stagnating procurement prices, unavailability of fodder and water scarcity, land-holdings are the factors which affect their willingness and modify their perceptions towards dairy farming.

5.2. Limitations

- Information on knowledge about dairy farming activities is self-reported. Also, with time and resource constraints the knowledge assessment does not cover all the components of training given under several programmes and schemes. Future studies can devise more standardized scales and questions for an objective assessment of knowledge.
- The available information is restricted to youth age between 15-35 years and with limited sample size it does not allow a thorough disaggregation of same. Nevertheless, the prime objective of the study required direct focus on the aggregate estimates for total sample youth.
- Additionally, asset index based on principle component analysis of several asset holdings is used as the proxy for family's income and overall well-being. In the absence of data on household income, asset holdings is mostly used to understand the associations of analytical variables with household well-being.

5.3. Major Recommendations

- **Access to financial services:** Rural youth will be attracted towards dairy farming profession only if it becomes economically viable and business friendly. A major challenge is to provide loan at a lower interest rate and simplify the procedures, particularly for the landless or the vulnerable groups who lack assets for mortgaging. Formalities to obtain farm inputs at subsidised rates were rather cumbersome. The NDP can help the vulnerable groups through apprenticeship programmes and identifying potential for financial services for participants through their engagement in the dairy farms established by the union.
- **Formal education and capacity building:** There are very limited number of institutes that offer technical education or short-courses on the dairy sector. Efforts should be made to increase the numbers of the dairy course such as dairy technology, dairy chemistry, dairy microbiology, dairy engineering, veterinary science etc with an affordable fee structure (and scholarships) to attract youth toward the dairy sector. For instance, a youth from Bharuch in Gujarat who has graduated in dairy technology informed that there is considerable scope in the dairy sector from an employment perspective but this would require skills and education in modern dairy technology.
- **Training and skill development:** There is need for training and skill-building opportunities for young dairy farmers that can mould them for active participation in decision-making processes. The youth should be trained with relevant curriculum and time to time revised short-term courses. Rural youth should be provided training at Panchayat level for taking up the dairy farming as an income generating opportunity. Proper exposure visits of rural youths in dairy farming should be conducted by stakeholders on the farms of successful progressive farmers so that rural youths may get convinced personally by seeing the farm activities which made them successful.
- **Strengthening of extension services:** Dairy extension activities need to be strengthened with an emphasis on understanding the role of dairy farming in livelihood, food security, women empowerment, and other gender specific issues in technologies in the changing context of dairying. Role of dairy experts is crucial as they have not only to make rural youths aware about existence of new technologies of dairy farming but also to guide them how to take benefits from the new technologies. Blending of traditional methods with modern technologies can be gainful with active implementation of dairy policies.

- **Reducing income loss and uncertainties:** The price of milk based on FAT and SNF levels is sensitive to market demand. This should be countered by a suitable policy of milk pricing. With increase in cross breeding, scientific farming and dairy farming, the dairy farmers should be encouraged to take the insurance policies of all their livestock. Insurance will help them to bear the economic loss due to treatment of disease as well as due to deaths of livestock also. Furthermore, there is lack of veterinary doctors in the rural areas of most of the states and this should be improved to provide timely and cost-effective care and treatment.
- **Working conditions and input requirements:** Rural youth feel that dairy farming is unattractive because of working conditions that involves considerable efforts to maintain clean and hygienic conditions. Similar, there is a perception of poor policy support to improve input requirements such as fodder cultivation, silage or use of modern equipment. Opportunities for the landless and marginal land holding farmers can be strengthened by providing fodder cultivation support and training. Youth dairy farmers should be helped to envision raising of milch animals through mechanization and application of technologies.
- **Youth specific awareness campaign:** Apart of that the effective training and campaign should be held in the village in which the youth from the dairy family and non-dairy family participate. Training to the village level farmers is also required as we saw that there is no effective monitoring or provision of the training for the dairy farmers. The training only provide to the employees in almost the states.
- **Youth dairy farmer recognition and rewards:** The dairy cooperatives at the village, district and state level should develop programmes and events to felicitate young dairy farmers through rewards and recognition for their performance and contribution toward the dairy development including their roles as dairy farmers. Such events should also be used to promote exchange of best practices and experiences among youth engaged in dairy.
- **Participation of women and youth through self-help group models:** There is need to address the core challenges faced by poor and vulnerable sections as well as women in dairy farming. Since it is difficult to carry out dairying as a business individually in case of landlessness and dearth of financial capital, it is important to work in partnership with transparent multi-stakeholder mechanism to ensure coherence, coordination and cooperation with government institutions to engage more women and youth from the vulnerable groups in dairy farming.

- **Issues for specific policymaking:** The long-term strategies to sustain and enhance potential of new generation of farmers is to be done through building of institutions which facilitate identification of potential markets, technology transfer, exchange of knowledge, financial linkages through channelizing private equity, venture capital funding, distribution, marketing and joint ventures. Like crops, animal husbandry and dairying should be covered by interest subvention so as to enhance their capacity to borrow and repay. There is a need to encourage the milk and milk product market so as to add value and enhance employment and reduce the middleman margin. Market intelligence should be in place so as to equip the producers and processors with the current and future trends of the milk and milk products. Also, policies for care, treatment or disposal of the old and out of use milch animals should be strengthened. Finally, quality control of milk and milk products is must to build confidence among the producers and the consumers in terms of remunerative prices and healthy milk and milk products.
- **Demand generation and commercial dairying:** It has been noticed that there is lot of scope for commercial dairying across states as at the moment it is mainly confined to just to an allied activity which is nearly at subsistence level. To encourage and promote commercial dairies, there is need to have a large number of trained manpower in veterinary sector. State specific customized schemes for animal husbandry and dairying need to effectively in place.

Annexure

Literature Review

Among human resources of any nation, the vital chunk happens to represent its youth; further youths have a crucially pivotal role in the development of any country (Bello et al 2015). Agriculture Sector of Indian Economy is one of the most significant aspects of India. Indian government introduced many schemes to stimulate the agriculture sector of the economy. However, it was not once seen as an attractive option nither to neither the labouring class nor the educated youths of today. The literate youth could act in a significant role in building up the agricultural tradition of India. It would be an excellent prospect to the country as well as to the educated youth of today to own an agriculture business, likewise young farmers are important for sustaining, and growing cooperatives (Soumiya 2015, Andhani 2017). With its massive potential force of one-fifth of the nation's population, their leadership qualities, attitude and skills in rural occupation decides the rural economy (Singh and Fulzele 2005).

Majorly three factors identified that influence the youth to involve in agricultural entrepreneurship; attitudes, acceptance and knowledge (Soumiya 2015). The villages and communities around them can be made better by spreading the scientific thinking and innovations of youths in the field of dairying and animal husbandry (Singh and Fulzele 2005). In a study Doddahanuilliah (1990) found that dairy was ranked first by the literate youth in compare to other agricultural occupations, small-scale industry, business and salaried jobs. While in a study of Karnataka State, Bhanu (2006) identified that majority of rural youth dairy activities ranked second followed by the poultry and piggery. Crop production activities remain the first priority of youths in the State. Likewise, Bell et al (2015) revealed that the cost of production is positively affected the youth attitudes and their decisions towards agriculture in Sudan country. It was also indicated that lack of agricultural land does not affect the youth decision towards agriculture (Bello et al 2015). Nag et al (2017) stated that the majority of farm youths showed favorable to extremely favorable attitude towards dairying. Similar findings also reported by Patel and Chauhan (2009) during their study on entrepreneurial attitude of youth. While non-farm youths display unfavorable attitude towards dairying (Nag et al 2017).

Training remains an extremely efficient tool to train the youth for urging use of modern technologies and to enhance their knowledge. It was on top found that the youths are revealing their need to receive training in dairy farming (Singh and Fulzele 2005). Although another study by Soumiya (2015) concluded the knowledge is not significant factor that prompt the drift of youth to become agricultural entrepreneurs. In a study of the China Zhao et al (2017) concluded that knowledge gaps surrounding dairy products exist in Chinese urban adults, which impact the quantity and quality of dairy intake. To further he also added that attitude always plays a crucial role in nutritional behaviors as there is often a gap between knowledge and practice, and attitude. But still this study is silent on the adoption of youths to Dairy's as a career. National Dairy Plan I (NDP I) have made several efforts to create employment and income to youths through skilled training and motivations towards dairying.

Migratory intention of rural youth towards urban area had made the primary tenet of investigating attitude of the rural farm and non-farm youth towards dairying. To a significant extent, "Rural School Children Awareness Programme" and the "Rural Youth Awareness Programme" were initiated by the milk producer companies focuses on encouraging rural youth to take up dairying as an occupation. Training/orientation programmes were also conducted for managers/facilitators of the companies and the Sahayaks operating the milk pooling points in the villages (NDDB, 2013-14). Although we have seen from more initial observation that NDP I have made many efforts in the development of youth towards dairying. In spite of that, there is a lack of enough literatures who can suggest us of orientation and attitude of the youth in the adaptation of dairy farming as an occupation. Likewise, there is no literature available on NDP I, who can instruct us in this perspective.

In a study of Indonesian and Kenyan countries Andhani (2017) found that the key constraints in participation of youths in dairy cooperatives are age issue, lower educational achievement and lack of fundamental knowledge and skill on dairy farming and cooperatives management. As well as the negative image of dairy farming and cooperatives, robust hierarchical system in dairy cooperatives, a lack of communication between young and elderly farmers, lack of access to land and long payment time represent some other main hurdles before the dairy development. Andhani (2017) also pointed out that these problems could solved by the cooperatives adopting, effective communication between young and traditional farmers, and by providing training and workshops on dairy farming and cooperative management.

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Table A1: Percentage distribution of age of the respondents by State and gender

	Less than equal to 25	More than 25 years	Total
Male	%	%	%
Bihar	29	71	100
Gujarat	19	81	100
Karnataka	39	61	100
Madhya Pradesh	23	77	100
Maharashtra	24	76	100
Odisha	40	60	100
Punjab	15	85	100
Rajasthan	55	45	100
Tamil Nadu	29	71	100
Total	29	71	100
Female			
Bihar	25	75	100
Gujarat	44	56	100
Karnataka	37	63	100
Madhya Pradesh	14	86	100
Maharashtra	31	69	100
Odisha	56	44	100
Punjab	0	100	100
Rajasthan	24	76	100
Tamil Nadu	30	70	100
Total	29	71	100

Table A2: Percentage distribution of education of the respondents by State and gender

	Below or completed primary	More than Primary education	Total
Male	%	%	%
Bihar	77	23	100
Gujarat	79	21	100
Karnataka	55	45	100
Madhya Pradesh	54	46	100
Maharashtra	68	32	100
Odisha	73	27	100
Punjab	70	30	100
Rajasthan	70	30	100
Tamil Nadu	72	28	100
Total	70	30	100
Female			
Bihar	84	16	100
Gujarat	83	17	100
Karnataka	75	25	100
Madhya Pradesh	97	3	100
Maharashtra	78	22	100
Odisha	71	29	100
Punjab	83	17	100
Rajasthan	91	9	100
Tamil Nadu	72	28	100
Total	82	18	100

Table A3: Percentage distribution of respondents by gender, age and marital status

	Female (%)	Male (%)	Total (%)
Unmarried			
Less than equal to 25	27	73	100
More than 25 years	21	79	100
Total	25	75	100
Married			
Less than equal to 25	39	61	100
More than 25 years	31	69	100
Total	32	68	100

Figure A1: Possession of Bank account, Aadhar, Job under MNREGA and Kisan Credit Card by gender of the respondent

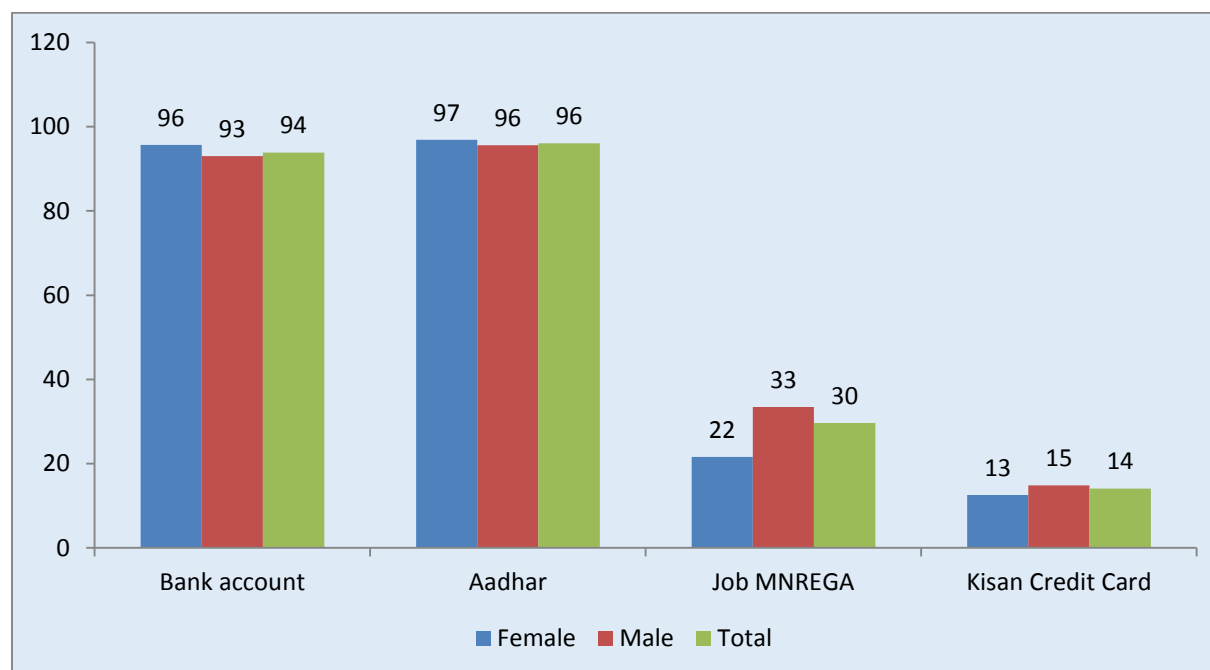


Table A4: Possession of Bank account, Aadhar, Job under MNREGA and Kisan Credit Card by social groups

	General	SC/ST	OBC	Total
	%	%	%	%
Bank account	91	96	95	94
Aadhar	97	97	95	96
Job MNREGA	32	25	29	30
Kisan Credit Card	15	16	13	14

Table A5: Possession of Bank account, Aadhar, Job under MNREGA and Kisan Credit Card by State

	Bank account	Aadhar	Job MNREGA	Kisan Credit Card
	%	%	%	%
Bihar	99	99	14	9
Gujarat	98	91	27	5
Karnataka	96	99	20	1
Madhya Pradesh	95	91	7	6
Maharashtra	88	95	46	23
Odisha	92	99	47	27
Punjab	98	100	10	22
Rajasthan	93	98	63	29
Tamil Nadu	92	98	14	3
Total	94	96	30	14

Table A6: Percentage distribution of households by quintiles and social groups

	Quintile 1	Quintile 2	Total
	%	%	%
General	49	51	100
SC/ST	58	42	100
OBC	50	50	100
Total	51	49	100

Table A7: Percentage distribution of households by quintiles and State

	Quintile 1	Quintile 2	Total
	%	%	%
Bihar	90	10	100
Gujarat	63	38	100
Karnataka	100	0	100
Madhya Pradesh	38	62	100
Maharashtra	29	71	100
Odisha	19	81	100
Punjab	7	93	100
Rajasthan	52	48	100
Tamil Nadu	47	53	100
Total	50	50	100

Table A8: Youth Response Towards Reason for Implementing NDP/DCS. Selected State, India

State	Promoting Dairy Farming	For Increasing Employment	Others
Bihar	65	25	9
Gujarat	47	52	1
Karnataka	97	3	0
Madhya Pradesh	69	30	1
Maharashtra	27	57	16
Odisha	76	17	7
Punjab	52	46	2
Rajasthan	69	21	10
Tamil Nadu	85	14	1

Table A9: Knowledge About Ingredient Requirement (Green Fodder) for Milch Animals

State	Lucerne	Napier Grass	Guinea Grass	Grass	Jowar	Others
Bihar	34.8	32.3	11.9	25.4	1.5	5.0
Gujarat	34.6	36.5	46.2	31.7	21.6	1.0
Karnataka	28.9	57.8	18.9	20.0	12.2	0.0
Madhya Pradesh	23.5	26.3	15.1	40.8	12.8	5.0
Maharashtra	22.2	27.6	13.0	46.9	41.0	4.6
Odisha	7.9	8.6	2.9	46.4	0.0	0.7
Punjab	10.0	38.3	40.0	10.0	1.7	0.0
Rajasthan	49.6	9.6	5.4	29.6	35.4	6.3
Tamil Nadu	4.0	29.8	20.0	21.3	48.4	2.7
All	26.9	25.5	16.0	35.2	26.4	4.3

Table A10: Knowledge About Ingredient Requirement (Dry Fodder) for Milch Animals

State	Paddy Straw	Wheat Straw	Jowar adbi	Sugarcane Bagasse	Sugarcane Tops	Hay	Gram Husk	Others
Bihar	26.4	48.8	23.4	31.8	14.4	14.9	13.4	0.5
Gujarat	24.0	63.0	27.4	24.5	16.3	12.0	2.9	2.4
Karnataka	30.0	33.3	34.4	28.9	12.2	3.3	0.0	0.0
Madhya Pradesh	6.1	65.4	7.3	7.3	3.4	4.5	6.1	1.1
Maharashtra	18.0	41.0	23.8	39.3	37.2	5.9	2.9	2.5
Odisha	57.1	6.4	0.7	3.6	0.7	0.0	0.7	0.7
Punjab	30.0	33.3	10.0	10.0	13.3	1.7	1.7	0.0
Rajasthan	36.7	49.6	32.5	4.2	5.4	17.5	8.8	0.0
Tamil Nadu	68.4	10.7	9.8	13.3	7.1	5.3	4.0	0.4
All	33.1	40.8	19.7	18.9	13.1	8.5	5.2	1.0

Table A11: Percentage of Youth with Knowledge of Ration Balancing Scheme by Socioeconomic Background, India

Age	Male	Female	Total
Below 25 years	58.9	70.1	62
Above 25 Years	60.3	56.6	58.4
Social Group			
SC/ST	77.4	57.1	67.5
OBC	61.9	63.1	60.1
General	52.9	56.8	53.9
Asset Index			
Below 50%	61.0	75.5	64.8
Top 50%	58.6	42.9	53.4
Education Level			
Below Secondary	57.6	55.6	57.1
Above Secondary	51.9	65.9	60.9
State			
Bihar	98.9	100.0	82.7
Gujarat	18.8	80.0	36.2
Karnataka	60.7	71.4	67.5
Madhya Pradesh	84.0	46.3	73.0
Maharashtra	62.4	73.3	64.4
Odisha	63.1	32.4	53.7
Punjab	0.0	0.0	0.0
Rajasthan	32.7	51.4	43.4
Tamil Nadu	69.4	40.4	61.1
All	59.9	59.9	59.4

Table A12: Percentage of Youth with Knowledge of Cattle Insurance Scheme by Socioeconomic Background, India

Age	Male	Female	Total
Below 25 years	54.1	51.1	53.2
Above 25 Years	44.2	53.5	47.7
Social Group			
SC/ST	59.8	50.1	58.4
OBC	54.7	62.7	56.9
General	40.6	42.1	42.5
Asset Index			
Below 50%	49.0	59.1	51.9
Top 50%	44.7	46.3	46.1
Education Level			
Below Secondary	45.3	56.9	49.4
Above Secondary	47.9	47.4	48.7
State			
Bihar	86.0	87.2	83.1
Gujarat	8.7	23.1	15.7
Karnataka	48.3	58.9	55.3
Madhya Pradesh	34.0	19.0	29.6
Maharashtra	41.2	17.8	36.8
Odisha	37.9	37.8	37.9
Punjab	5.7	0.0	5.1
Rajasthan	77.1	59.7	66.5
Tamil Nadu	74.0	88.5	77.4
All	46.8	53.0	49.0

Table A13: Percentage of Youth with Knowledge of Fodder Development Project by Socioeconomic Background, India

Age	Male	Female	Total
Below 25 years	39.2	39.8	38.6
Above 25 Years	35.1	44.9	37.3
Social Group			
SC/ST	53.7	48.1	50.1
OBC	40.1	50.8	41.9
General	26.5	32.3	28.8
Asset Index			
Below 50%	46.4	59.3	47.7
Top 50%	26.1	27.4	27.7
Education Level			
Below Secondary	35.3	45.9	38.7
Above Secondary	36.7	40.4	36.7
State			
Bihar	86.5	87.8	71.6
Gujarat	22.4	23.1	26.4
Karnataka	35.7	49.0	44.2
Madhya Pradesh	40.0	53.7	44.0
Maharashtra	30.1	31.1	30.3
Odisha	32.1	16.2	27.3
Punjab	0.0	0.0	0.0
Rajasthan	24.5	44.8	33.0
Tamil Nadu	46.3	28.0	40.6
All	36.1	43.7	37.6

Table A14: Percentage of Youth with Knowledge of Fodder Subsidy Scheme by Socioeconomic Background, India

Age	Male	Female	Total
Below 25 years	36.5	42.7	37.7
Above 25 Years	39.8	47.8	40.6
Social Group			
SC/ST	56	35.2	46.3
OBC	39.1	49.1	41.1
General	33	47.9	36
Asset Index			
Below 50%	38.8	58.3	42.2
Top 50%	38.9	34.3	37.4
Education Level			
Below Secondary	52.9	49.3	44.9
Above Secondary	36.2	42.7	36.2
State			
Bihar	95.0	78.0	82.8
Gujarat	5.3	10.0	8.5
Karnataka	30.8	38.1	35.3
Madhya Pradesh	20.0	34.1	24.1
Maharashtra	43.8	33.3	41.8
Odisha	29.8	27.8	29.2
Punjab	0.0	0.0	0.0
Rajasthan	20.8	40.6	30.7
Tamil Nadu	53.3	53.8	52.9
All	38.9	46.5	39.9

Table A15: Percentage of Youth with Knowledge of VBMPs by Socioeconomic Background, India

Age	Male	Female	Total
Below 25 years	50.6	51.8	51.2
Above 25 Years	49.1	55.9	51.4
Social Group			
SC/ST	60.2	53.6	55.2
OBC	55.0	69	58.3
General	42.9	37.3	42.2
Asset Index			
Below 50%	49.3	71.7	55.5
Top 50%	49.8	37.7	47.1
Education Level			
Below Secondary	49.8	57.9	53.3
Above Secondary	49.3	50.7	49.9
State			
Bihar	94.0	75.6	82.5
Gujarat	14.9	41.7	26.9
Karnataka	77.8	68.9	72.2
Madhya Pradesh	31.0	36.6	32.6
Maharashtra	41.8	28.9	39.3
Odisha	70.2	35.1	59.5
Punjab	0.0	0.0	0.0
Rajasthan	48.2	50.7	53.6
Tamil Nadu	62.0	65.4	63.4
All	49.5	54.9	51.4

Table A16: Percentage of Youth with Knowledge of Free veterinary service for Milch Animals by Socioeconomic Background, India

Age	Male	Female	Total
Below 25 years	44.9	53.2	47.4
Above 25 Years	40.3	38.9	40.2
Social Group			
SC/ST	36.2	46.4	37.9
OBC	37.6	36.3	37.3
General	46.5	49.2	47.3
Asset Index			
Below 50%	34.9	46.5	36.9
Top 50%	49.4	37.9	47.1
Education Level			
Below Secondary	42.8	40.1	42.1
Above Secondary	40.7	45.3	41.9
State			
Bihar	18.1	6.4	15.2
Gujarat	28.2	53.8	33.5
Karnataka	70.4	76.2	73.9
Madhya Pradesh	17.0	37.2	23.1
Maharashtra	46.4	66.7	50.2
Odisha	47.6	13.5	37.2
Punjab	22.7	50.0	25.0
Rajasthan	57.0	49.2	57.0
Tamil Nadu	64.5	38.5	56.0
All	41.6	42.2	42.0

Table A17: Percentage of Youth with Knowledge of AI Facility for Female Cattle Birth, by Socioeconomic Background, India

Age	Male	Female	Total
Below 25 years	44.7	37.8	43.4
Above 25 Years	44.8	44.9	45.9
Social Group			
SC/ST	45.6	37.5	41.6
OBC	49.3	50.2	49.1
General	7.6	36.9	38.5
Asset Index			
Below 50%	45.8	49.4	47.2
Top 50%	43.6	36.8	43.3
Education Level			
Below Secondary	42.8	46.3	44.5
Above Secondary	46.1	38.9	45.9
State			
Bihar	28.0	12.8	22.7
Gujarat	35.7	61.5	45.9
Karnataka	53.8	66.7	61.8
Madhya Pradesh	66.7	38.1	58.0
Maharashtra	34.4	28.9	33.3
Odisha	48.1	25.0	41.0
Punjab	0.0	0.0	0.0
Rajasthan	63.4	57.1	62.0
Tamil Nadu	52.1	58.8	54.4
All	44.76	43.23	45.30

Table A18: Youth Responses towards Need for Training in Different Areas of Dairy Farming by Gender, India

	Below Secondary	Above Secondary	Total
Basic Training	74.0	71.9	72.8
Disease Control	65.5	69.3	67.7
Value Added Milk Products	46.8	53.5	50.6
Manure Management	43.7	50.0	47.3
Ration Balancing	65.9	71.4	69.0
Fodder Cultivation and Preservation	68.6	64.9	66.5
Waste Management	47.9	51.8	50.1
Milk Storage	55.8	62.1	59.4
Hygiene Practices	70.3	71.4	71.0
Infrastructure Development	62.9	64.6	63.8
Record and Book Keeping	56.6	61.8	59.6

Table A19: Percentage of Youth Agrees with Dairy As a better Employment, India

Dairy Farming as Employment	Male	Female	All
Job Opportunity Compared to Other Agricultural Jobs	66.3	63.2	65.4
Profit in Dairy Farming	77.9	77.5	77.8
Cost and Expenses in Dairy Farming	84.6	80.1	83.3
Struggle/Efforts in Dairy Farming	76.8	70.5	74.9
Working Hours in Dairy Farming	83.0	81.5	82.5
Skill Requirements	76.4	70.3	74.5
Incentive in Dairy Farming for Marginalised Social Groups	76.6	77.3	76.8
Work Safety in Dairy Farming	70.7	73.6	71.6
Youth Involvement in Dairy Farming	77.2	70.8	75.3
Job Security in Dairy Farming	63.7	61.8	63.1
Employment Opportunity in Dairy Farming - Before NDP Intervention	66.9	61.3	65.2
Employment Opportunity in Dairy Farming - After NDP Intervention	76.8	69.1	74.5

Table A20: Percentage of Youth with favourable perception towards job opportunity in Diary compared to other Agriculture jobs, by Socioeconomic Background, India

	Male	Female	Total
Age			
Below 25 years	64.1	64.2	64.5
Above 25 Years	67.1	62.8	64.5
Social Group			
SC/ST	58.8	63.8	58.8
OBC	65.3	62.5	63.6
General	73.9	64.5	68.7
Asset Index			
Below 50%	60.8	50.2	57.5
Top 50%	72.2	76.8	71.8
Education Level			
Below Secondary	67.4	63.1	66.0
Above Secondary	65.5	63.3	63.2
State			
Bihar	13.2	3.9	12.9
Gujarat	67.5	42.9	62.0
Karnataka	58.1	45.8	50.0
Madhya Pradesh	56.6	69.9	62.0
Maharashtra	80.9	93.3	83.3
Odisha	73.0	66.7	71.0
Punjab	75.9	66.7	75.0
Rajasthan	71.1	83.3	78.0
Tamil Nadu	84.8	77.2	82.5
All	66.32	63.22	64.52

Figure A21: Youth's Perception Towards Benefits of NDP/DCS in Dairy Farming, India

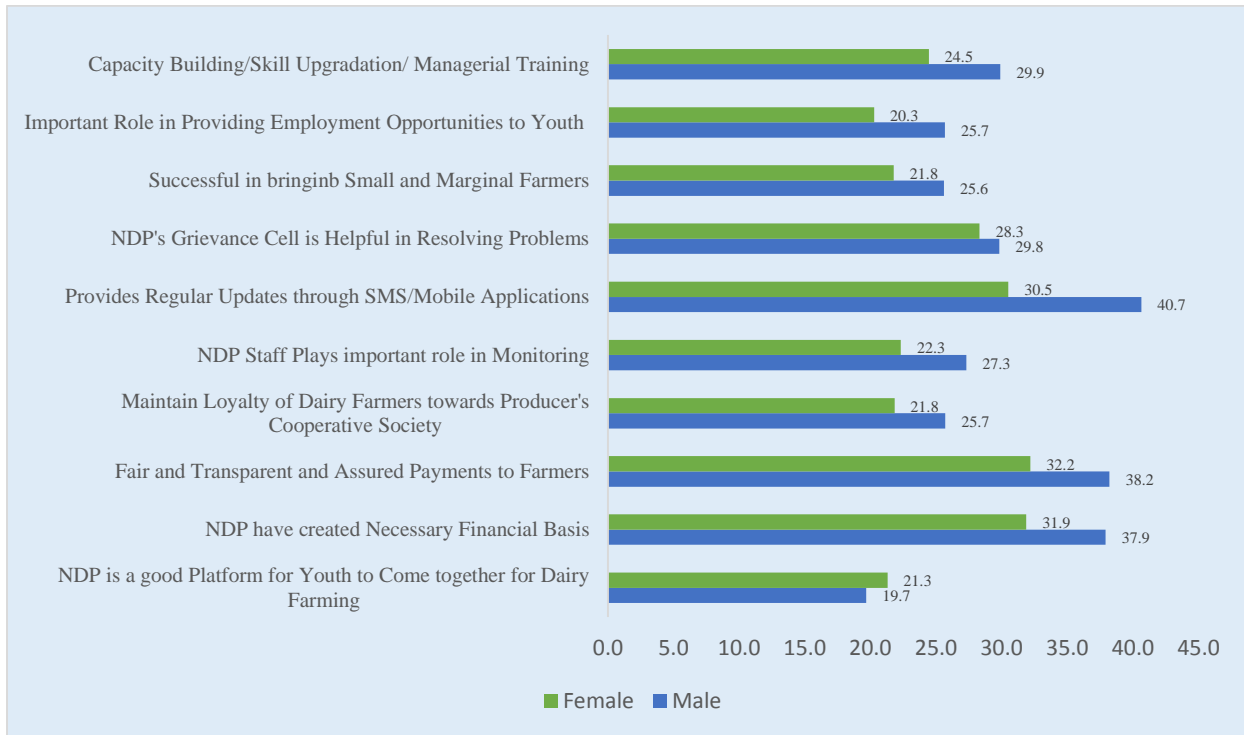


Table A22: Youth Perception Towards Role of NDP/DCS in Providing Employment Opportunities to Youth by Socioeconomic Characteristics and State, India

Background Characteristics	Male (%)	Female (%)	Total (%)
Age			
Below 25 years	22.8	10.3	19.1
Above 25 Years	26.7	23.3	26.2
Social Group			
SC/ST	21.1	18.1	22.1
OBC	25.6	17.2	24.0
General	26.3	24.2	26.0
Asset Index			
Below 50%	21.2	15.5	19.9
Top 50%	30.4	25.2	29.1
Education Level			
Below Secondary	24.9	19.5	22.7
Above Secondary	26.2	21.4	25.8
State			
Bihar	17.4	13.7	25.8
Gujarat	23.6	21.4	23.0
Karnataka	25.8	22.0	23.3
Madhya Pradesh	29.5	19.2	25.3
Maharashtra	29.4	13.3	26.4
Odisha	27.6	56.4	36.5
Punjab	42.6	33.3	41.7
Rajasthan	25.2	5.3	14.9
Tamil Nadu	18.2	25.0	20.2
All	25.7	20.3	24.5

Table A23: Youth Perception Towards Role of NDP/DCS in Creating Sufficient Financial Base in Dairy Farming Socioeconomic Characteristics and State, India

Background Characteristics	Male (%)	Female (%)	Total (%)
Age			
Below 25 years	32.1	18.6	27.9
Above 25 Years	40.0	35.9	37.2
Social Group			
SC/ST	38.2	16.7	29.5
OBC	39.1	39.5	38.0
General	35.8	30.0	33.2
Asset Index			
Below 50%	44.1	37.3	41.5
Top 50%	31.5	26.2	28.3
Education Level			
Below Secondary	39.0	32.1	36.1
Above Secondary	37.2	31.2	34.1
State			
Bihar	86.1	94.1	75.1
Gujarat	32.5	21.4	34.0
Karnataka	16.1	15.3	15.6
Madhya Pradesh	42.9	41.1	42.1
Maharashtra	45.9	20.0	41.0
Odisha	32.6	64.1	42.4
Punjab	35.8	33.3	35.6
Rajasthan	18.7	6.7	11.9
Tamil Nadu	14.9	1.9	11.0
All	37.9	31.9	35.0

Table A24: Percentage of Youth Agree with Easy Availability of Loan/Finance in Dairy Business by Socioeconomic Characteristics, Selected States, India

	Male (%)	Female (%)	Total (%)
Age			
Below 25 years	51.7	58.2	52.9
Above 25 Years	69.7	66.1	65.7
Social Group			
SC/ST	66.7	73.6	67.1
OBC	57.7	68.4	59.6
General	72.1	54.2	64.7
Asset Index			
Below 50%	73.1	70.5	60.6
Top 50%	56.3	57.4	62.9
Education Level			
Below Secondary	72.1	65.1	69.2
Above Secondary	59.9	62.1	57.3
State			
Bihar	75.9	82.4	68.4
Gujarat	91.0	64.3	78.9
Karnataka	74.2	81.4	78.9
Madhya Pradesh	44.3	45.2	44.7
Maharashtra	64.4	53.3	62.3
Odisha	41.9	65.6	49.1
Punjab	83.3	83.3	83.3
Rajasthan	47.1	67.1	54.9
Tamil Nadu	62.8	56.1	60.4
All	65.0	64.2	64.5

Table A25: Percentage of Youth Difficulties in Setting up Dairy Business by Socioeconomic Groups, Selected States, India

	Male (%)	Female (%)	Total (%)
Age			
Below 25 years	57.4	61.2	58.9
Above 25 Years	63.2	60.7	62.3
Social Group			
SC/ST	55.8	54.2	56.1
OBC	56.0	62.5	58.7
General	69.0	61.3	65.1
Asset Index			
Below 50%	60.6	59.8	60.2
Top 50%	62.9	61.8	62.8
Education Level			
Below Secondary	65.8	60.1	63.5
Above Secondary	58.7	62.3	59.9
State			
Bihar	21.3	25.5	30.1
Gujarat	73.7	57.1	66.8
Karnataka	74.2	76.3	75.6
Madhya Pradesh	48.6	38.4	44.4
Maharashtra	71.1	68.9	70.7
Odisha	68.5	62.5	66.7
Punjab	77.8	83.3	78.3
Rajasthan	55.7	69.6	65.0
Tamil Nadu	70.1	84.2	74.1
All	61.7	60.8	61.5

Table A26: Percentage of Females involved in Marketing and Selling of Milk by Socioeconomic Characteristics, India

Age	By Females (%)
Below 25 years	37
Above 25 Years	41
Social Group	
SC/ST	28
OBC	41
General	44
Asset Index	
Below 50%	41.9
Top 50%	39.1
Education Level	
Below Secondary	47
Above Secondary	36
State	
Bihar	25
Gujarat	44
Karnataka	33
Madhya Pradesh	41
Maharashtra	45
Odisha	21
Punjab	3
Rajasthan	64
Tamil Nadu	47
All	41

Table A27: Percentage of Females involved in Maintaining Record/Book Keeping in Dairy Business by Socioeconomic Characteristics, India

Age	By Females (%)
Below 25 years	26
Above 25 Years	32
Social Group	
SC/ST	33
OBC	32
General	27
Asset Index	
Below 50%	35.6
Top 50%	24.8
Education Level	
Below Secondary	31
Above Secondary	30
State	
Bihar	33
Gujarat	43
Karnataka	39
Madhya Pradesh	30
Maharashtra	18
Odisha	31
Punjab	3
Rajasthan	35
Tamil Nadu	29
All	30

Table A28: Youth's Opinion on NDP/DCS Role in providing Employment to Women and Vulnerable Social Groups, Selected States, India

State	Women	Vulnerable Social Groups
Bihar	74	25
Gujarat	75	64
Karnataka	69	72
Madhya Pradesh	72	71
Maharashtra	73	54
Odisha	60	60
Punjab	62	55
Rajasthan	90	86
Tamil Nadu	80	77
All	75	63

Table A29: Percentage of Youth Respondents Agree with Female Involvement in Dairy Farming/Business, Selected States, India

State	Volunteer Women	Elders Motivation	Respondent's Motivation	Respondent's Perception
Bihar	83	89	88	78
Gujarat	56	57	81	63
Karnataka	98	100	99	99
Madhya Pradesh	72	58	73	74
Maharashtra	91	75	95	97
Odisha	94	85	88	90
Punjab	98	100	100	85
Rajasthan	91	88	90	97
Tamil Nadu	81	91	99	98
All	83	80	89	86

Table A30: Percentage of Youth reporting Elderly Motivation towards Female Involvement in Dairy Business by Socioeconomic Characteristics, India

Age	(%)
Below 25 years	86
Above 25 Years	78
Social Group	
SC/ST	83
OBC	82
General	78
Asset Index	
Below 50%	76.9
Top 50%	82.8
Education Level	
Below Secondary	79
Above Secondary	81
State	
Bihar	89
Gujarat	57
Karnataka	100
Madhya Pradesh	58
Maharashtra	75
Odisha	85
Punjab	100
Rajasthan	88
Tamil Nadu	91
All	80

Table A31: Percentage of Youth who think Females Should be involved in Dairy Business/Farming by Socioeconomic Background, India

Age	(%)
Below 25 years	91
Above 25 Years	85
Social Group	
SC/ST	88
OBC	88
General	87
Asset Index	
Below 50%	85
Top 50%	88
Education Level	
Below Secondary	84
Above Secondary	89
State	
Bihar	78
Gujarat	63
Karnataka	99
Madhya Pradesh	74
Maharashtra	97
Odisha	90
Punjab	85
Rajasthan	97
Tamil Nadu	98
All	86

Table A32: Youth response Towards Starting of Dairy Business/Farming in their Households, Selected States, India

Male						
State	Encouraged by Parents/Relatives/Friends	Introduced by NDP/DCS	Motivated by Government NGO	Self-Motivated	Inherited	
Bihar	32	48	5	4	11	
Gujarat	41	16	16	26	1	
Karnataka	87	3	6	0	3	
MP	50	30	2	4	15	
Maharashtra	50	15	1	28	6	
Odisha	62	17	5	14	2	
Punjab	88	0	0	12	0	
Rajasthan	47	24	5	7	17	
Tamil Nadu	65	35	0	0	0	
All	53	24	5	13	7	
Female						
Bihar	30	56	0	2	12	
Gujarat	25	25	17	33	0	
Karnataka	76	17	7	0	0	
MP	3	97	0	0	0	
Maharashtra	75	14	3	6	3	
Odisha	72	19	3	6	0	
Punjab	100	0	0	0	0	
Rajasthan	22	54	9	1	13	
Tamil Nadu	65	30	0	4	0	
All	43	45	4	3	4	