

Internship Training at
Public Health Foundation of India

Is small dairy farming dying out?
An In-depth study

by

Mansi

PG/15/045

Under the guidance of

Dr. Sanjiv Kumar
Prof. Divya Aggarwal
Dr. Dhananjay Srivastava

Post Graduate Diploma in Hospital and Health Management
2015-17



International Institute of Health Management Research
New Delhi

DISSERTATION at
Public Health Foundation of India
Supported by
International Livestock Research Institute

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PUBLIC
HEALTH
FOUNDATION
OF INDIA

May 12, 2017

The certificate is awarded to

MANSI

in recognition of having successfully completed her
Internship in the department of

Roadmap to Combat Zoonoses in India (RCZI)

and has successfully completed her Project on

**“Is small scale Dairy Farming dying out? An In-depth
study”**

(1st Jan 2017 to 10th May 2017)

Public Health Foundation of India

She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning

We wish him/her all the best for future endeavors.

Dr. Manish Kakkar
Senior Public Health Specialist,
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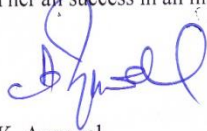
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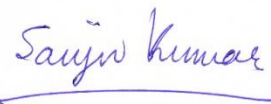
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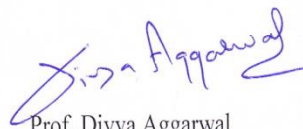
I wish her all success in all his future endeavors.



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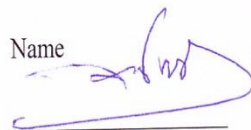
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The following dissertation titled "Is Small scale dairy farming dying out? An In-depth study" at "PUBLIC HEALTH FOUNDATION OF INDIA" is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

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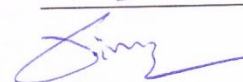
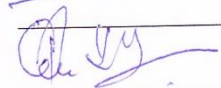
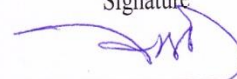


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Certificate from Dissertation Advisory Committee

This is to certify that **Mansi**, a graduate student of the Post Graduate Diploma in Health and Hospital Management (PGDHM) has worked under our guidance and supervision. She is submitting this dissertation titled “**Is small scale Dairy Farming dying out? An In-depth Study**” at “**PUBLIC HEALTH FOUNDATION OF INDIA**” in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.



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CERTIFICATE BY
SCHOLAR

This is to certify that the dissertation titled "**Is small scale dairy farming fying out? An indepth study**" and submitted by **Mansi** Enrollment No. PG/15/045 under the supervision of Prof. Divya Aggarwal for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 1st Jan 2017 to 10th May, 2017 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Mansi
Signature

FEEDBACK FORM

Name of the Student: **Mansi**

Dissertation Organisation: **Public Health Foundation of India**

Area of Dissertation: **Research Capacity building Programme under RCZI**

Attendance: **100%**

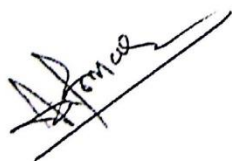
Objectives achieved: **Yes**

Deliverables: **Qualitative Research, Network Establishment for
different stakeholders of small scale dairy farms at
Hodal and Project Management.**

Strengths: **Willingness to learn, Receptive and Proactive attitude**

Suggestions for Improvement: **None**

Suggestions for Institute: **None**



Signature of the Officer-in-Charge

Dr Anjana Tomar

Project Coordinator

Roadmap to Combat Zoonosis in India Initiative

Public Health Foundation of India

Abstract

Background: Dairy is currently the top-ranking commodity in India. Dairy development practices are one of the key components for poor development. The lives and livelihoods of small farmers are becoming increasingly vulnerable. Hence, an in-depth study was designed to know about presence of small scale dairy farmer and to identify challenges, threats and opportunities of small dairy farmers. The objectives of study are to identify reasons of small scale dairy farming dying out, to study challenges faced by small dairy farmers and to understand the influence of animal health on small scale dairy farms.

Methodology: A Qualitative Exploratory study was carried out in Peri-urban area of Hodal, Haryana from January to May 2017. The dual strategies of purposive and snowball sampling were employed. The participants of the study were Current small scale dairy farmer, ex small scale dairy farmer, Household member and other stakeholders. In-depth Interview was used for the investigation. Different interview guides were used. All interviews were audio-recorded, transcribed, translated and cross checked against the original recordings.

Result: In total 26 interviews were carried out across the sites. After analyzing the data, the results are presented divided in five core themes which is further divided in subthemes.

Conclusion: Small scale dairy farming is still present in peri urban area of Hodal but there is decrease in number of small scale dairy farmer. The major reasons are shrinking Fringes, access to cattle provender, tepid interest of future generation, increased cost of cattle and cattle health.

Recommendations: The study recommends that subsidies and support should be provided to small scale dairy farmer for accessing land and provender. Awareness about the importance and scope of small scale dairy farming should be spread among young generation. Camps should be organized for small scale dairy farmers to sustain dairy business & to make them aware about different innovative strategies and cattle health

Acknowledgement

I Mansi, the student of IIHMR, Delhi, am extremely grateful to “Public Health Foundation Of India (PHFI)/ Roadmap to Combat Zoonoses in India (RCZI) & International Livestock Research Institute (ILRI), Kenya” for giving me opportunity to work under Research Capacity Building Programme within Indian Research initiative on peri urban Human animal Environmental Interface and for confidence bestowed in me and entrusting my project entitled “Is Small Scale Dairy Farming dying out? – An in-depth study”. The exposure I have got on working at field has been tremendous and has left me with an urge to learn more.

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A special thanks to all the respondents of Hodal for listening to me and answering to all the questions. I would like to thanks Mrs. Kiran Jatwani and Ms. Sarika Lohkna for accompanying to field during the data collection. Last but not least, I offer my regards and gratitude to all those who supported me in any way during my project.

Mansi

IIHMR, New Delhi

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List of Abbreviations

| | | |
|------|---|--|
| IDI | - | In Depth Interview |
| NDDB | - | National Dairy Development Board |
| RCBP | - | Research Capacity Building program |
| RCZI | - | Roadmap to Combat Zoonoses in India |
| VLDA | - | Veterinary Livestock Development Assistant |
| WHO | - | World Health Organization |

LIST OF APPENDIX

- 1. Interview guide and consent form**
- 2. Picture of field Experience**

PART 1: INTERNSHIP REPORT

1) ORGANIZATION PROFILE

1.1 About PHFI

The Public Health Foundation of India (PHFI) is a public private initiative that has collaboratively evolved through consultations with multiple constituencies including India & international academia, state and central governments, multi & bi-lateral agencies and civil society groups. PHFI is a response to redress the limited institutional capacity in India for strengthening training, research and policy development in the area of Public Health.

Structured as an independent foundation, PHFI adopts a broad, integrative approach to public health, tailoring its endeavors to Indian conditions and bearing relevance to countries facing similar challenges and concerns. The PHFI focuses on broad dimensions of public health that encompass promotive, preventive and therapeutic services, many of which are frequently lost sight of in policy planning as well as in popular understanding.

1.2 Vision, mission, Goals

VISION

Our vision is to strengthen India's public health institutional and systems capability and provide knowledge to achieve better health outcomes for all

MISSION

- Developing the public health workforce and setting standards
- Advancing public health research and technology

- Strengthening knowledge application and evidence informed public health practice and policy

VALUES

Transparency

- Uphold the trust of our multiple stakeholders and supporters
- Honest, open and ethical in all we do, acting always with integrity

Impact

- Link efforts to improving public health outcomes, knowledge to action
- Responsive to existing and emerging public health priorities

Informed

- Knowledge based, evidence driven approach in all we do
- Drawing on diverse and multi-disciplinary expertise, open to innovative approaches

Excellence

- Aim for highest standards in all aspects of our work
- Encourage, recognise and celebrate our achievements

Independence

- Independent view & voice, based on research integrity & excellence
- Support academic and research freedom, contributing to public health goals and interests

Inclusiveness

- Strive for equitable and sustainable development, working with communities
- Collaborate and partner with other public health organisations

1.3 Roadmap to Combat Zoonoses in India (RCZI)

RCZI is a young initiative that was set up in March 2009 with its focus and ideology rooted in the ‘One World One Health’ concept. The initiative approaches strengthening inter-sectoral collaboration by bringing together core sectors (human, veterinary and wildlife health) around collaborative research, capacity building and advocacy/ health promotion on zoonoses.

By fostering a transparent and non-threatening academic/ research collaboration around these functional areas, RCZI aims to build confidence, demonstrate value, stimulate need and influence policy makers and programme implementers to allow joint action for zoonoses prevention and control. It also hopes to develop a vision of intersectoral collaboration for prevention and control of zoonoses and other Emerging Infectious Diseases (EIDs).

The Roadmap to Combat Zoonoses in India’s (RCZI) mission is to identify specific outcomes that can be integrated into mainstream systems through innovative approaches that can help combat, prevent, and control zoonotic infections. It aims to do this

- Integrating research and training by experts in the field of human, animal, and vector-borne illnesses
- Identifying partners and developing mechanisms and resources for multi sectoral collaboration and initiatives
- Encouraging advocacy and communication strategies to raise awareness amongst different stakeholders involved in zoonotic infections\ transmission, prevention, and control

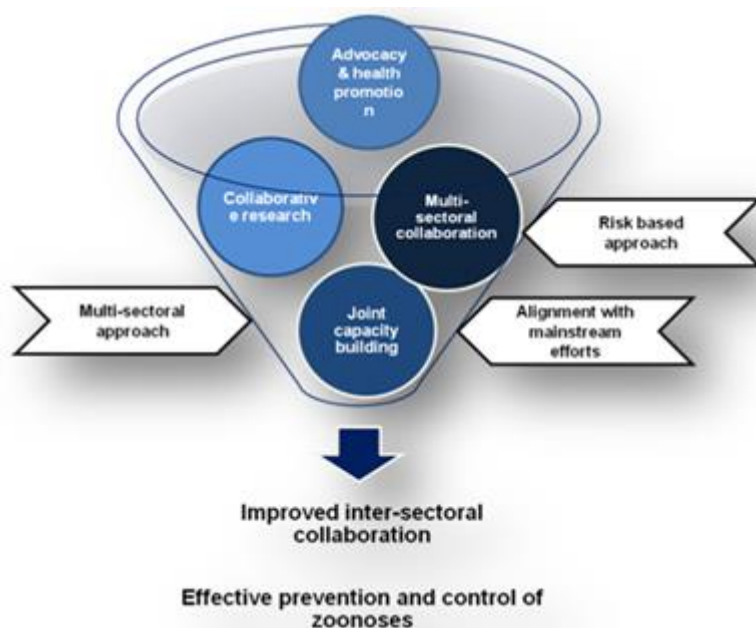
- Conducting research and capacity-building priorities focused on the ‘One Health’ concept (linking all sectors ranging from human health to animal, wildlife, social and environmental sectors)

RCZI Thrust Areas

The complex interplay of factors that result in the emergence and spread of zoonoses, necessitates collaboration between sectors and disciplines for their effective prevention and control. However, the current strategies targeted towards prevention and control of zoonoses often operate within the line departments of human or animal health, with the wildlife sector often lagging behind with minimal inter-sectoral collaboration.

RCZI approaches strengthening intersectoral collaboration for zoonoses prevention and control by shifting focus to:

- Promoting and fostering platform for multisectoral collaboration by engaging core sectors of human, veterinary and wildlife health; and bringing together researchers, academia, practitioners and policy makers from these sectors.
- Joint capacity building for strengthening collaborative response to zoonoses
- Research to promote collaboration and Inter-disciplinarity
- Joint advocacy and health promotion for holistic zoonoses prevention and control



1.4 PHFI's Mandate

Promote and further develop prevention and control of zoonoses through support for collaborative programmes with national and international organisations. Build capacities and research initiatives to strengthen India's current zoonoses workforce.

Strengthen the Roadmap for Combating Zoonoses in India (RCZI) through a systems-based collaborative approach that can help bring the best of multiple sectors (human, veterinary, and wildlife) in controlling and preventing zoonotic infections

1.5 About Zoonoses

In recent decades, emerging diseases have cast a wide net of fear with new infections breaking into human populations. Zoonotic infections or zoonoses are infections naturally transmissible between vertebrate animals and humans. They constitute nearly 60% of all known human infections and over 75% of all emerging pathogens. Zoonoses may be bacterial, viral, or parasitic or may involve unconventional agents such as prion diseases (Bovine spongiform encephalopathy).

Apart from being a public health problem, many of the major zoonotic diseases prevent

the efficient production of food of animal origin and create obstacles to international trade in animal products. Animals (thus) play an essential role in maintaining zoonotic infections in nature.

Since the 1980s, infectious diseases of zoonotic origin have become the focus of public health attention. Several large and highly visible outbreaks of emerging zoonotic infections that have affected both human and animal populations and commanded attention worldwide include Mad Cow Disease or Bovine Spongiform Encephalopathy (BSE), West Nile virus fever, HIV, Severe Acute Respiratory Syndrome (SARS), avian influenza A(H5N1) and dengue fever outbreaks.

Zoonoses are caused by a diverse group of microorganisms. Infectious syndromes caused by zoonotic pathogens are equally diverse. Hence classification of zoonoses is difficult. Diseases are classified by the nature of the pathogen, animal host, mode of transmission between animals to humans and geographic range of host or clinical syndrome (systemic disease or specific organ system of infection).

In addition to contributing to significant infectious disease burden, zoonoses have major implications on economic, labour and health productivity of a nation, accounting for a majority of new and emerging infectious diseases. Preventing and controlling zoonoses is even more critical today in the context of globalisation of international trade, changes in agricultural practices and global warming, since all these factors are inherent risks for emergence, spread and persistence of zoonoses.

Zoonoses could present themselves as small outbreaks (anthrax, nipah) and also be under the category of 'neglected zoonoses' such as brucellosis, rabies, cysticercosis and bovine tuberculosis. Neglected zoonoses are endemic in population groups/commodities and do not normally present as outbreaks. Rather, they continue to severely impact productivity of both humans and animals thus contributing to aggravation of poverty.

KEY ISSUES IN ZONOSSES PREVENTION AND CONTROL

Lack of awareness: In the absence of a concerted approach towards advocacy and credible sharing of information across platforms, there is ambiguity on how zoonoses impacts socio-economic conditions of affected and at-risk population/s. There are veterinarians who may be less aware of the importance of zoonoses; medical clinicians who encounter zoonoses in human patients but fail to recognise them or concentrate on treating individual patients rather than look at efficient disease control; and general population who is not aware of how prevalent zoonoses are and how they should protect themselves. This situation is further exacerbated in situations where there is inadequate communication between veterinarians, health care professionals and public health organisations.

Weak surveillance systems: Zoonoses are often undiagnosed, therefore untreated, ignored and/or under-reported which makes surveillance and control a huge challenge

No man's land: Infections that affect animals and humans fall in 'no man's land'. Here, a single department is unwilling or unable to take responsibility for the infection. Additionally, in human-animal episodes, for instance, neither the human nor the veterinary health systems have the capacity to deal with an outbreak that involves cross-transmission

Lack of intersectoral approach: From the public health perspective zoonoses, unlike some of the other communicable diseases are not an organised effort in national programmes. Resultantly, it is only when an outbreak occurs or disaster strikes that governments and communities wake up to the fact that risk assessments, early warnings, laboratory capacity for diagnosis, monitoring and treatment are competing priorities. All sectors concerned with human health and development must work together to recognise and combat zoonotic infections

1.6 Research Capacity Building program (RCBP)

The Public Health Foundation of India/Roadmap to Combat Zoonoses in India (RCZI) Initiative in collaboration with the International Livestock Research Institute (ILRI) announces a Research Capacity Building Programme for Masters and PhD candidates under the India Research Initiative on Peri-Urban Human-Animal Environment Interface (PERIMILK study) with funding support from the International Development Research Centre (IDRC, Canada).

The Initiative aims to generate a stronger evidence-based cross-sector policy and local capacity for integrating public health, animal/livestock health, urban planning, local food production and social development in select peri-urban sites in India. Establishing a policy-relevant research platform and creating sustainable multidisciplinary and multi-actor partnerships would be the eventual outcomes of the study.

Selected Researchers will explore the EcoHealth approach to research, applying it to local healthy food production, healthy livestock, and prevention and control of zoonotic diseases in peri urban settings. The research findings will help develop and improve the understanding of interactions between livestock rearing practices and epidemiology of diseases associated with these practices, transmission dynamics and its implications on human health and environment with a view to promote health, livelihood and sustainable development across the country's different peri-urban settings.

1.7 Observation/Learning

A two workshop was conducted to introduce to the concept of 'One-Health', importance of prevention and controlling of zoonoses. A hand on training was given for using Mendeley software, Mendeley is a combination of a desktop application and a website which helps in manage, share and discover both content and contacts in research. It helps the researcher in automatic extraction of document details, sharing and synchronization, an online backup of your library and

The Dissertation is full of extensive learning. Following are broad learning:

- Conducting Research
- Methodology for Qualitative study
- Network establishment with stakeholders
- Project Management
- Field side dealing

PART 2: DISSERTATION

REPORT

“Is Small Scale Dairy Farming Dying Out?”

An In Depth study”



Chapter 1

BACKGROUND OF THE STUDY

INTRODUCTION

Dairy is currently the top-ranking commodity in India. Millions of small scale and marginal farmers who own two to five animals produce an average of 5 liters of milk (1). Rural smallholder milk producers contribute 62 percent of total milk produced in the country (2). The National Dairy Development Board (NDDB) estimates that the demand for milk is likely to reach 180 million tonnes by 2022. This rapidly evolving scene is a response to a series of drivers including population growth and urbanization, both contribute to increased demand for livestock products.(3) But the lives and livelihoods of small farmers are becoming increasingly vulnerable. In India, there is no safety net for these small farmers.

Significance of study

There is need for increased milk supplies as demand is increasing. In the absence of sufficiently increased production, India will need to rely on the world market for imports. And because of the huge volume required, it will affect global milk prices. Thus, focusing on areas for local dairy development is critical. Small dairy farming is at risk so there is a requirement to investigate problems faced by small-scale cattle owners around urban areas and opportunities which can make their business successful. The present study can help to find realistic and possible solutions for small dairy farmers. Recent studies have confirmed that the increasing deregulation of India's dairy sector poses a threat to small farmers (Paasch et al 2011: 31–41). There is a need for public support to small producers to self-organize into non-centralized and localized milk production and consumption cooperatives.(4) A study of root cause analysis for farm

business should be done to ascertain the factors that might impede the scaling up of the business. The present study is to identify the challenges, threats and opportunities of small dairy farmers in peri urban area of Hodal.

CHAPTER 2

REVIEW OF LITERATURE

Dairy development practices are one of the key components for poor development. Changes in the dairying environment have important implications for the smallholder farmers and for poverty reduction.(3)Thus, focusing on areas for local dairy development is critical.

Small dairy households are facing numerous challenges, which include low prices of milk, shortage of quality feed and fodder, low genetic potential of dairy animals resulting in low productivity levels, non availability of institutional finance, poor animal health care facilities, poor extension services, and poor rural infrastructure. There are also challenges related to access to breeding and health services, which further contribute to low productivity. It is concluded that dairy cow management and fertility have challenges and opportunities that are influenced by the extent to which farmers have access to important services such as extension, health, breeding and finance.(5)

Additionally, the constraints include seasonal availability and costs of feeds, poor milk marketing and low milk price, availability of land, problems of waste disposal and pollution, disease and shortage of capital. (8). Unreliable supply of improved animal genetics, poor animal health, feed shortage and poor prices for milk were considered to be the most important constraints to smallholder dairy farming in descending order.(6)

Livestock diseases cause dramatic losses. It reduces the volume of animal production. Marketing and disposal of milk is particularly difficult for small-scale producers.(2)The OIE estimates that morbidity and mortality due to animal diseases cause the loss of at

least 20% of livestock production globally. These constraints erode the competitive advantage conferred by low labour cost of Indian small dairy holders.

The good quality of animals, high productivity, good animal health and breeding services provision, veterinary infrastructure development and vaccinations are required for the success of the dairy farms.

Grasslands clearly provide the feed base for grazing livestock and thus numerous high-quality foods. Much of the increasing global demand for meat and milk, particularly from developing countries, will have to be supplied from grassland ecosystems, and this will provide difficult challenges. Increased production of meat and milk generally requires increased intake of metabolizable energy, and thus increased voluntary intake and/ or digestibility of diets selected by grazing animals. (7)

The Orissa State Cooperative Milk Producers' Federation Limited (OMFED) decision has resulted in a steep decline in milk procurement as well as procurement prices. Small dairy farmers, whose livelihoods depend on selling milk, have been the hardest hit. This is not just the predicament of small dairy farmers in Odisha, but that of small and marginal farmers across the country: a grim situation that was first experienced by farmers in North India towards the end of 2014, continue through 2015 and 2016 in several parts of India, affecting states which have experienced the 'white revolution', including Maharashtra, Karnataka, Telangana, Andhra Pradesh, Tamil Nadu, Goa, and now Odisha.(8)." It is evident that India's dairy growth aspirations are centered on corporations capturing the space of the so-called unorganized market. Whether Amul or Danone, Heritage, Nestle (the latter intends to expand its operations in Telangana), or Reliance, the "unorganized" sector and the livelihoods of small farmer producers who

own one–two animals, small vendors, and small dairies are at a risk of being totally destroyed. (4)

In general, the small-scale milk production system in India could be broadly classified into four main categories:

- Dairying for home consumption; specialized milk production for home consumption where milk is an essential part of the household diet.
- Dual purpose for animals where seasonal surpluses of milk are converted into market sales of storable household products.
- Small-scale dairy farming where milk and milk products are converted into market sales.
- Commercial dairy farming where the animal holding is comparatively large and milk and milk products are converted into market sales.(2)

The Heritage of this small scale dairy farmer is important to continue the legacy of small scale dairy farming. While the older generation fathered in accordance with the expectation that their children would take over the farm and become farmers in the future, the younger generation of fathers practiced childcare more in terms of the contemporary norms of ‘intensive’ parenting. Contemporary farming fathers see it as important to equip children with skills and competences that are generally demanded in

In Modern society, changes in the agricultural labour process being identified as influencing this change. Combined with the norms of modern childhood, the 'new parenting culture' strongly impacts on fathering practices for farming fathers.

CHAPTER -3

Research question:

- Is small scale dairy farming dying out?
- What are the challenges faced by small dairy farming families?

Objectives

- To identify the reasons of small scale dairy farming dying out
- To study the challenges faced by small dairy farmers.
- To understand the influence of animal health on small scale dairy farms.

CHAPTER- 4

METHODOLOGY

4.1 Study Design: Qualitative Exploratory study

4.2 Study Setting:

The study was conducted among small-holding dairy farmers in peri-urban areas of Hodal, Haryana.

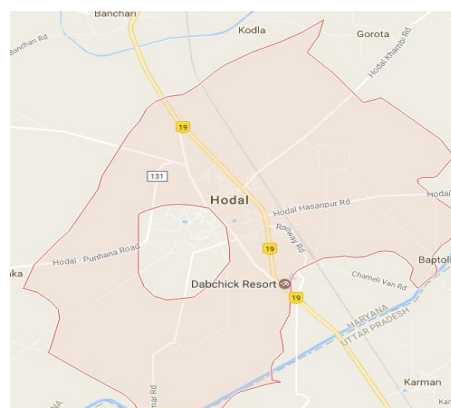
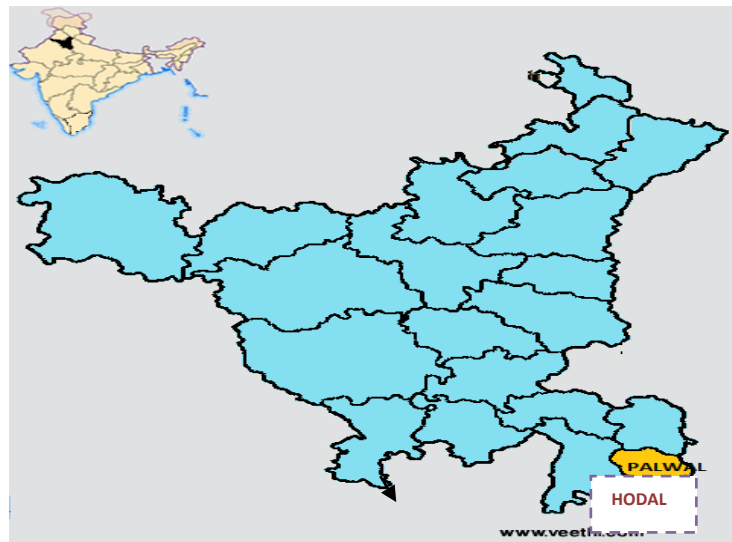


Figure 4.2.1: Map of study area

Hodal : Hodal is a city and a municipal council in Palwal district in the Haryana state of India. It is 86 km away from national capital of India. The Hodal Municipal Committee has population of 50,143 of which 26,627 are males while 23,516 are females as per report released by Census India 2011.

The background review of literature, the formative phase and a formal consultation with the local person of Hodal enabled us to identify relevant stakeholders in the site as well as refine our in depth interview guide that were used for data collection. The area of Peri urban of Hodal was visited before the pilot study. The main phase of data collection was preceded by the formative phase which allowed us to conduct scoping interviews with key informants in the site as well as pilot our instrument.

4.3 Study Population:

1. Current small scale dairy farmer
2. Ex small Scale Dairy farmer
3. Household (customers).
4. Other possible stakeholders of small dairy farms (depends on the availability in that area)

4.4 Sampling

The dual strategies of purposive sampling and snowballing were employed to identify potential respondents with the help of the local persons of Hodal for taking in depth interviews of respondents. Households were contacted to know about the dairy farmers

and milkmen in the area. This enabled us to identify the stakeholders we were aware of being relevant to this study. Other Stakeholder is also identified in that area like veterinary physician

In Hodal, we identified the small scale dairy farms based on areas where most dairy farms were clustered and fitted the project definition of a small scale dairy farm. Three areas where small scale dairy farms are clustered were identified. Data collection was stopped due to constrain of time.

4.4 Data collection tools:

In-depth Interview was used for the investigation. Different interview guides were used for interviewing current small scale dairy farmers, Ex small scale dairy farmer and other stake holder. Interview guide had question regarding previous, perceived, future challenges, opportunities.

The data collected included attitudes, feelings, vocal and facial expressions and other behaviors are also involved. The data consisted of interview transcripts, field notes from observations.

All interviews were tape-recorded. The interviews were open-ended and carried out in a conversational style. In addition to the interviews other data throughout the study, such as comments from the other family members, neighbors and ongoing literature review was also collected. All of the taped interviews, memoranda, and field notes will be entered into computer file. Unstructured interviews will be taken from households and other stake holders.

4.5 TOOL DESCRIPTION

Following are the details of Tool i.e. Interview guide

Table 4.1: Tool Description

| | Category | |
|----|------------------------------------|--|
| 1. | Socio-demographic details | <ol style="list-style-type: none">1. Name2. Age3. Number of family members4. Other work |
| 2. | Status of Dairy farming | |
| | Part (I) – their experience | <ol style="list-style-type: none">5. Number of cattle :6. Experience in dairy farming7. Daily Routine with cattle:8. Number of litres of milk being produced and the use9. Number of litres of milk sold and selling price of milk:10. Number of customers and their demand:11. effect of season on the selling price of milk and demand12. Cost of the production from the dairy:13. Frequency of changing cattle |

| | | |
|---|---------------------------------|---|
| | Part (II) current status | <p>14. the small dairy farming work sucess</p> <p>15. (a) Reason for doing dairy farming (b)Importance of dairy farming.</p> <p>16. Animal Health</p> <p>i) Status of your animal health</p> <p>ii) some disease of cattle</p> <p>iii) Usage of medicine for animal</p> <p>iv) Availability of veterinarian</p> <p>v) Cost on animal health</p> <p>17. Problems due to poor animal health and effect of poor animal health on you, milk production and dairy farming</p> <p>18. From where people prefer to buy milk now a days</p> <p>19. Status of small dairy farming in your surrounding</p> <p>20. Changes in dairy farming (past and now)</p> |
| 3 | Challenge/Opportunities | <p>21. Opportunities</p> <p>22. Facilitating factors which will</p> |

| | | |
|--|------------------------------|---|
| | | <p>help for growth of dairy farming & Factors that are decreasing the quality and productivity of milk and diminishing the small dairy work</p> <p>23. problem in keeping cattle at home</p> <p>24. Past challenges faced in dairy and Current challenges faced in dairy</p> <p>25. threats to the business</p> <p>26. story of somebody who had left small scale dairy farming business</p> <p>27. After 5 year Scenario</p> |
| | B. EXPERIENCE STORIES | <p>28. Learning from the dairy farming work</p> <p>29. experience or stories related to dairy farming</p> <p>30. Suggestions for other dairy farmers</p> |

4.6 : Data collection

Data collection at each of the field sites was carried out in successive phases. Fieldwork was completed from March to April at the site. Interviews were conducted after reading various articles how to conduct interviews. Interviews with current small scale dairy farmers, Ex small scale dairy farmers were conducted at their homes whereas interviews with other stakeholders were conducted at their offices (Government Veterinary hospital etc.). Consent was taken from the respondent before starting the interview. Most of the interviews were conducted in local language that is Hindi. The current small scale dairy farmer and ex scale dairy farmer were using the local dialect of Haryanvi.

4.7 Data Management and analysis

All interviews were audio-recorded, transcribed, translated into English and cross checked against the original recordings by respective supervisor. The translated transcripts were analyzed.

In addition to the interviews recordings, detailed field notes in field diaries were maintained. This enabled capturing of details related to key issues that emerged in each location, concerns regarding fieldwork as well as any potential trends that were emerging in the responses of the participants. The field study diary provided us with adequate details to discuss during the review carried out at the end of the day work and plan for the rest of the data collection. The field diary also helped in identifying early patterns. This also helped to modify interview guide further. Given that the data collection was carried out in phases. At the end of each phase, we completed data management and analysis of the previous site and summary results were prepared which

enabled us to further probe in detail specific areas that emerged during the field work. This iterative process enabled us to modify interview guide

4.8 QUALITY ASSURANCE

Interviews were conducted by trained investigators and supervised, and monitored for completeness, correctness and comprehensive transcription and translation of responses and labeling of recording. Thirty percent of the interviews from every site were randomly rechecked for transcription and translations by respective supervisors

CHAPTER - 5

RESULT

In total 26 interviews (formal and informal) were carried out across the sites (**Table 2**). This includes 10 current small scale dairy farmers, 7 ex small scale dairy farmer, 7 household person and 2 other stake holders. Site specific stakeholders were identified in snowballing process. Households were contacted to know about small scale dairy farmers and current small dairy farmers and household person informed about ex small scale farmers and other stakeholder. Other stakeholders include 1 veterinary physician and one VLDA.

Table 5.1: Details of the stakeholders interviewed.

| Study site | Current small scale Dairy farmer | Ex small scale dairy farmers | Households | Other stakeholders |
|------------|--|---------------------------------|------------|-----------------------|
| HODAL | 10 | 7 | 7 | 2 |

The content of 26 interviews provides enough information about the objectives. A content analysis was carried out in order to identify the main themes. After analysis of the interviews five themes were identified.

The results are presented in the following five core themes

1. Shrinking Fringes
2. Access to cattle provender
3. Tepid interest of future generation
4. Increased cost of cattle
5. Cattle Health

Details of sub themes and domains are listed in **Table 3**.

Table 5.2: Core themes and sub themes from the inductive data analysis

| SI No. | Core themes | Sub themes |
|--------|-------------------------------------|---|
| 1. | Shrinking Fringes | Lack of land availability to small scale dairy farmer |
| | | Availability of necessary ecosystem |
| 2. | Access to cattle provender | Increase in Price of fodder |
| | | Less availability in Market |
| | | Decrease in Grazing land and quality of cattle food. |
| 3 | Tepid interest of future generation | Less interest & Other career goals |
| | | Due to Squalor |
| 4 | Increased Cost of cattle | Increased Cost of cattle |
| 5 | Cattle Health | Cattle Health |

The corpus of this qualitative study was shaped by the content of interviews

CORE THEME 1

Shrinking fringes

One of the identified reasons of small scale dairy farming dying out is Shrinking Fringes. Understanding the community level driver, the core theme is divided in two subthemes i.e. 1. Lack of land availability to small scale dairy farmer 2. The availability of necessary ecosystem (grazing land to cattle)

Sub Theme 1: Lack of land availability to small scale dairy farmer

Majority of current small dairy farmers, ex dairy farmers and household has told about the lack of availability of land to small dairy farms. Many Household members have informed that there is decrease in small scale dairy farming as there is less land to farmers. The reason for lack of availability of land is due to

- a) Poverty
- b) Distribution of land among descendants
- c) Shift from kuccha house to Pakka house

“There is less space available and then also there is distribution of land between two brother” (Current small scale dairy farmer)

There is problem of space. Suppose you need to keep 1 cattle for that you need to have at least 1900 sq. feet land. Now the land is very expensive. It is difficult for people to live in small land so how will they keep cattle in small house” (Current small scale dairy farmer)

“I used to have cattle at village but when I come from village to Hodal I want to keep cattle but there is less means and less land so I was not able start small scale dairy farming again” (Ex small scale dairy farmer)

“There is less space and there is less land. People sold their land for good home.

Earlier we had 60 cows and buffalos. I used to keep it with my whole family (joint) As time passed the land is divided and given to me and my brothers. Now I can't keep cattle due to lack of land”(Ex small scale dairy farmer)

“Now people have less focus on small scale dairy farms as they have less manpower and space” (VLDA)

“My sister's father in law has sold all the land because they were in debt, now she don't to arrange feed and to keep cattle and bear there expenses. She used to keep cattle earlier”(Current small scale dairy farmer)

“Some keep 2 or 4 depends on the availability depends on the availability of space” (Current small scale dairy farmer)

Sub theme 2: Availability of necessary ecosystem (grazing land to cattle)

There is less availability of land for animal grazing and animal walking. Earlier the cattles used to have natural environment and have forest for grazing. They can walk to natural soil. But now they have to remain at one place for whole day.

“The agricultural land is also decreasing. People are selling their agricultural land for industrialization. If this land will keep decreasing and there is less land for animals

there is full chance in future that this small dairy farming become even lesser.” (Current small scale dairy farmer)

“Earlier there were big grazing lands. So the buffalo can eat green fodder there”

(Current small scale dairy farmer)

“We used to bring cattle for grazing in forests which was good to them. After eating green fodder we used to bring cattle back for milk extraction” (Ex small scale dairy farmer)

CORE THEME 2

Access to cattle provender

Majority of respondents reported that less access of cattle provender is a challenge for small scale dairy farming. In order to explain various aspects, the core theme access to cattle provender is divided in three subthemes according to possible causes of less access

1. Increase in Price of fodder
2. Less availability in Market
3. Decrease in Grazing land

Sub theme 1: Increase in Price of fodder

According to most of the farmers there is cost inflation of feed. Most of the farmer compared the earlier price and current price of different types of cattle provender informing that how much price has being increased and earlier the fodder is available in cheaper price.

“1 container of khal cost 1500, and animal eat 4-5 kg of it daily and wit there is other kind of feed also and also the medicines so it makes the cost even more. And then the farmer is not able to get good yield of milk from cattle. In that case all burden comes to the farmer.”(Current small scale dairy farmer)

“Earlier the cost of Khal is 300 and now it is 10,000”(Current small scale dairy farmer)

After telling about the cost inflation of provender, farmers used to say about the less feed will effect milk Production”

“When the cattle will not eat properly how it will give milk”(Current small scale dairy farmer).

“Earlier people use to keep 3-4 cattle as there is cheap feed, it was not that expensive, and with 1 animal it is easy to take care of 1-2 calves for further growth and use. But now there is inflation of cost. And people used to keep 2-3 cattle and now cribbing calves is also expensive. Feed is very expensive” (Current small scale dairy farmer)

Sub theme 2: Less availability in Market

According to some farmers certain kind of cattle provender is not available in the market of the Hodal. They indicate about less availability of food.

“According to me the best diet of buffalo is mungfali ki khal which is not available in the market.”(Current small scale dairy farmer)

As compared to earlier there is decrease in cattle. In villages it is easy to get free success to feed but places like Hodal we have to purchase the feed from market, earlier some of it was came from forests.(Current small scale dairy farmer)

Sub theme 3: Decrease in Grazing land and quality of cattle food

Some farmers indicate about decrease in grazing land and natural green fodder is a key issue for cattle.

“There is no land available for grazing. Earlier animal used to graze at forest and that time they have access to animal food”

“The milk production will depend on the quality of feed available. If there is no food so it will not give milk” (Veterinary Physician)

“We used to bring cattle for grazing in forests which was good to them. After eating green fodder we used to bring cattle back for milk extraction” (Ex small scale dairy farmer)

“Even now we have to buy feed from outside” (Current small scale dairy farmer)

CORE THEME 3

Tepid interest of future generation

Majority of Farmer informed that future generation will not like to keep cattle at their home. As they are literate, there will be foul smell due to cattle, and why would they like to become a small dairy farmer. They want to do job, they will have less time for this thing. This core theme is divided in 2 sub themes: 1. Less interest and Other Career Prospective 2. Due to Squalor

Sub Theme 1: Less interest and Other Career Prospective

Majority of farmers and other stakeholders have mentioned about the less interest of young generation in small scale dairy farming. They also informed about other career goals of younger generation like job, education.

“The young generation, who are literate, they will say they will not keep it” (Current small scale dairy farmer)

“These children will not keep cattle in future. They want to have milk and milk products but they don’t want to even give them water for drinking” (Current small scale dairy farmer)

“Today’s generation is keeping fewer cattle to why will future will keep it. People want from their children to be doctor to animal husbandry” (Ex small scale dairy farmer)

“My brother in law used to keep cattles but he don’t keep now as he became old and now it is difficult for him and his children don’t like it as they do job.” (Current small scale dairy farmer)

“The young generation will not able to do sahani or able to extract milk from cattle. It is hard for anybody new to do it. Now they are literate why they will keep. Earlier people use to be illiterate they use to keep it.”(Current small scale dairy farmer)

Sub Theme -2 Due to Squalor

According to most of the farmers the future generation will not want to keep cattle due to squalor.

“Why will younger generation keep cattle? They will disagree to pick the cow dung it will have a foul smell.”(Current small scale dairy farmer)

“The younger generation will not keep cattle as it needs to deal with a lot of foul smell and squalor”

CORE THEME 4

Increase in cost of cattle

Majority farmer talked about cost increase the major cause of decrease in small scale dairy farming in peri urban area of Hodal. There is a huge increase in the price of cattle which increase the burden on small scale dairy farmers. With high cost, there is risk of poor quality of cattle and poor yield of milk product. The cattle is resold in very negligible price.

“There is increase in price of cattle from earlier. Earlier the cost of buffalo was 10,000 to 20,000 and now it is 90,000 and above.” (Current small scale dairy farmer)

“Once upon a time, I bought a new cow of Rs. 75,000, and the buffalo did not had good yield of milk and she have to sell it in Rs.15,000 due to which I had a big loss.” (Current small scale dairy farmer)

“Earlier people used to keep but now the price of cattle is increased. Now it is 60-70,000. And the rich person can purchase a buffalo of 2,00,000 but it is not possible for poor. Earlier people used to keep 4 and more cattle and now its hard to keep even one due to cost inflation an dearness. Can also use in other themes also.

It is impossible for poor to purchase a cattle as it is of 1,00,000 to 2,00,000” (Current small scale dairy farmer)

“There is increase in cost of cattle. The average cost of the cattle is 80,000 and there will interest of 2000 on it. And then if the cattle is not goodand don’t give good yield and it brings all the revenue down. (Current small scale dairy farmer)

C3 The cattle cost is high so people is not able to keep it. If the cost of a buffalo is 1,00,000 so it will be sold again at 50,000 (Current small scale dairy farmer)

CORE THEME 5

Cattle health

Cattle Health in small dairy farmer

Majority of farmer said the poor animal has effect on milk production. They used to not sell milk when animal is diseased which decrease revenue. Some of the farmer indicate about the cost involve in keeping animal healthy. Some of the farmer indicated about the fear of young generation of spread of germs by keeping cattle

“Cattle stop giving milk due to disease. They don’t give milk when the cow is diseased.” “For better health vaccination is needed periodically. She had left rearing the cattle earlier as one of her cattle become very sick so she she wants to withdraw it.” (Current small scale dairy farmer)

“Nobody wants to take the milk of diseased cattle. The quality of milk decreased due to injections.” (Ex small scale dairy farmer)

“Production decreases when cattle are diseased” (VLDA)

OTHER RELATED THEMES

1. Changes from past to now

Small scale dairy farming had changed from past to now. Following are few quotes by farmers about the changes:

“Earlier it was less animal medical facilities, now there is good amount of doctor available. And earlier it was to find even a single doctor” (Current small scale dairy farmer)

“Now more and more dairy has been opened having 10-20 cows.”(Current small scale dairy farmer)

“Earlier people use to sell cattle’s dung and now people do not purchase it as now 85 % people are LPG users” (Current small scale dairy farmer)

“Earlier people use cattle for other work also but now the technology has increased so.” (Ex small scale dairy farmer)

CHAPTER-6

DISCUSSION

Small scale dairy farming is still present in peri urban area of Hodal but there is decrease in number of small scale dairy farmer as it is indicated by many farmers during formal and informal interactions. But there is still huge demand of cow and buffalo milk in Hodal.

According to the study, shrinking fringes is one of the reasons for decreasing small scale dairy farmers. A few studies have also showed similar findings. According to Tebug et al. Availability of land is one of the major problems faced by dairy farmers.

Not only Shrinking Fringes, access to animal provender is also a big challenge for small scale dairy farmers. Srikrupa R. et. al (8) has also talked about cost of feeds and food shortage as one of the most important constraints to small scale dairy farmer.

The cost of Production of small scale dairy farming has increased as found by the study also. There is increase in cost of animal food and cattle Price.

Boval et. al (7) research paper gives information about the importance of grassland to livestock's. As by study the grassland provide a numerous high quality products it is also indicated by the study that the cattles are not able to get high quality of food as they don't have access to grazing in grasslands or forests now but earlier they had. This livestock provides milk for the use and the production.

Banda LJ et al. (5) have also talked about the shortage of feed and fodder. According to many farmers, earlier the cattle used to eat good quality feed due to availability of grassland.

.
The future progeny is also showing less interest in small scale dairy farming. According to Brandth et al Contemporary farming fathers see it as important to equip children with skills and competences that are generally demanded in late modern society, with changes in the agricultural labour process being identified as influencing this change. Combined with the norms of modern childhood, the 'new parenting culture' strongly impacts on fathering practices for farming fathers.

According to Sinha OP. et al (2) discussed that Livestock diseases cause dramatic losses. It reduces the volume of animal production. The current study has showed that when the animal health is poor, it effects the milk production, due to which farmers are not able to sell milk on those days.

Further investigation is required for the challenges, threats and opportunities and for studying the effect of reasons on small scale dairy farmer.

CHAPTER- 7

Conceptual Model

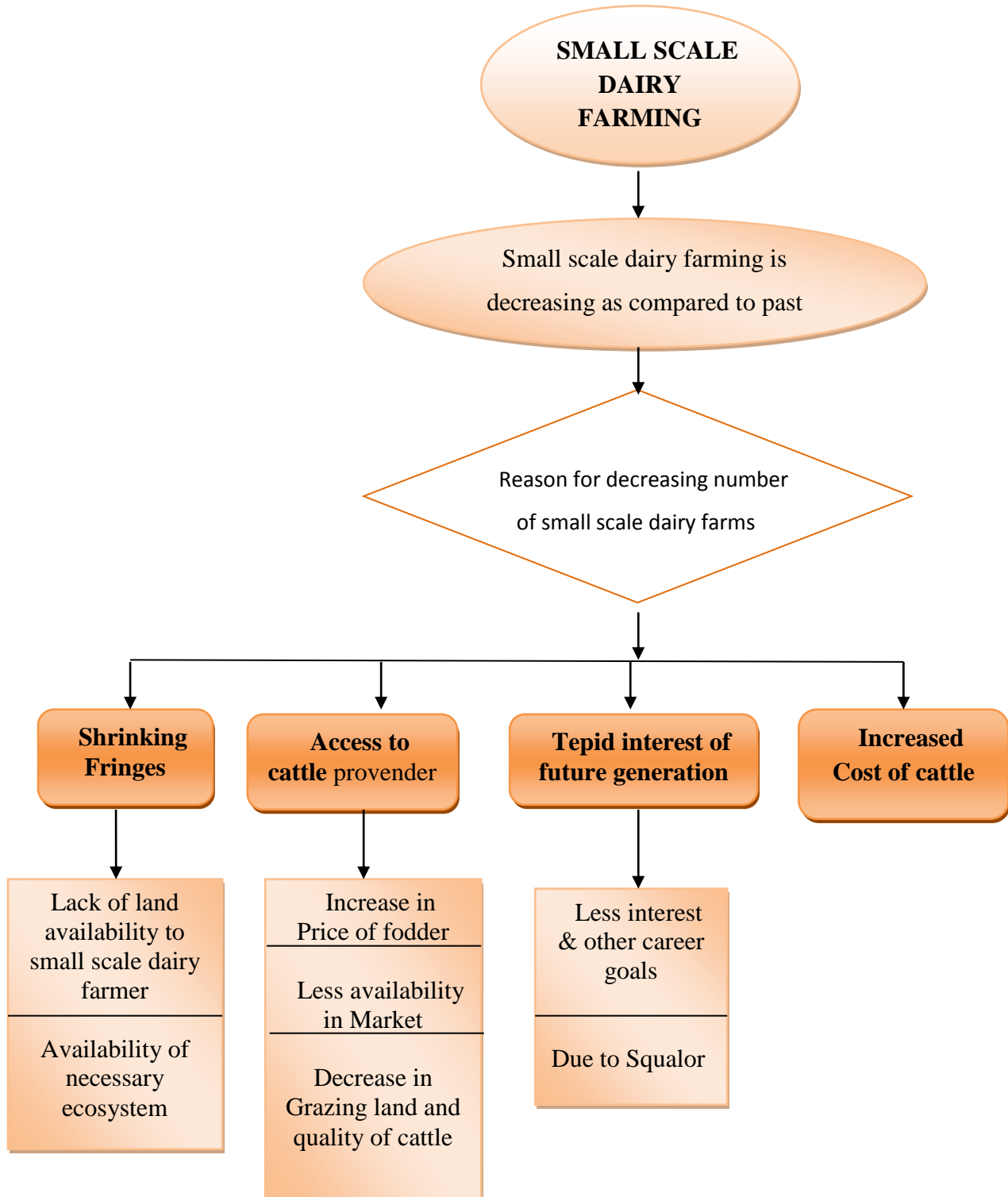


Figure 7.1 Conceptual Model

CHAPTER- 8

Conclusion

The current study is about “Is small scale dairy farming dying out- an in depth study. This study uses in depth interview as data collection tool. The current study concluded that small scale dairy farming is decreasing as compared to past. The current study identifies about several reasons contributing to decrease in small scale dairy farming. The major reason are shrinking Fringes, access to cattle provender, tepid interest of future generation and Increased cost Inflation of cattles.

CHAPTER-9

Limitation of the study

Following are the limitation of the study

1. Time constrain for collecting data
2. Lack of Resources
3. Problem in identifying a few stakeholder
4. Problem in understanding their dialect
5. Interference of other family members and friends

CHAPTER- 10

Recommendation

1. Government should help the farmer for the allotment of land
2. Subsidies for fodder should be provided
3. Awareness about the importance of small scale dairy farming should be spread among young generation.
4. Camps should be organized for small scale dairy farmers to sustain dairy business & to make them aware about different innovative strategies and cattle health.

APPENDIX

APPENDIX 1: Interview Guide

Is small dairy farming dying?

An in-depth study

Interview guide for Current small dairy farmer

CONSENT

My name is Mansi, postgraduate student of International Institute of Health Management Research, Dwarka, New Delhi. I am conducting a study on topic ‘Is small dairy farming dying?’ The study has been commissioned by ILRI and PHFI.

The study involves In-depth interviews which will take 25 to 50 minutes. This Interview is intended to get information from you regarding your perception on current status of small scale dairy farms, its challenges, opportunities & threats and impression of animal health on business. The information you provide and the photographs taken would be kept confidential. Your interview responses will only be shared with research team members and will ensure that any information we include in our report does not identify you as the respondent.

Participation in this study is voluntary and you can choose not to answer any question. You can withdraw your participation if you do not feel comfortable at any point of the time. However, we hope that you will participate in this study since your participation is important in the interest of your community.

The contact number of the Institute would be provided to you in case you have any query.

At this time, do you have any questions about the study?

May I begin the interview now?

Thank you!

Code no. _____

A. Socio-demographic details

1. Name : _____
2. Age : _____
3. Number of family members : _____
4. Other work

B. Status of Dairy farming

Part (I) – their experience

5. Number of cattle :
6. Experience in dairy farming:
7. Who takes care of cattle?
8. Daily Routine with cattle:
9. Number of litres of milk being produced and what do you do with the Milk?
10. Number of litres of milk sold and selling price of milk:
11. Number of customers and their demand:

12. Is there any effect of season on the selling price of milk and demand from customers?
13. Cost of the production from the dairy:
14. Frequency of changing cattle:

Part (II) current status

15. How does the small dairy farming work going?
16. (a) Reason for doing dairy farming. (b) Do you like dairy farming and why? (c) Importance of dairy farming.
17. Animal Health
 - vi) Status of your animal health
 - vii) Do you know about some disease of cattle?
 - viii) Has any diseases been increasing or decreasing?
 - ix) Usage of medicine for animal
 - x) Availability of veterinarian
 - xi) Distance of pharmacy and hospital
 - xii) Cost on animal health
18. Problems due to poor animal health and effect of poor animal health on you, milk production and dairy farming?
19. Government support
20. From where people prefer to buy milk now a days
21. Status of small dairy farming in your surrounding
22. Changes in dairy farming (past and now)

C. Challenge/Opportunities

23. What do you like and dislike in dairy farming

24. What would you like to change about their farming? Why do you not do it.
25. How can you expand your business? (opportunities)
26. Facilitating factors which will help for growth of dairy farming
27. Factors that are decreasing the quality and productivity of milk and diminishing the small dairy work
28. Do you face any problem in keeping cattle at home?
29. Past challenges faced in dairy and Current challenges faced in dairy
30. What are the threats to the business?
31. Do you know anybody who was in the dairy business earlier? And has now left.
If yes, why they left it? Can you share some cases?
32. According to you, what would be scenario of dairy farming after 5 years?

D. EXPERIENCE STORIES

33. Learning from the dairy farming work
34. Would you like to share some experience or stories related to dairy farming?
35. Would you like to give some suggestions for other dairy farmers?

Thank you for your valuable time and kind support

Interview guide for ex small dairy farmer

CONSENT

My name is Mansi, postgraduate student of International Institute of Health Management Research, Dwarka, and New Delhi. I am conducting a study on topic 'Is small dairy farming dying?' The study has been commissioned by ILRI and PHFI.

The study involves In-depth interviews which will take 20 to 40 minutes. This Interview is intended to get information from you regarding your past experience from dairy farming and perception on current status of small scale dairy farms, its challenges, opportunities & threats and impression of animal health on business. The information you provide and the photographs taken would be kept confidential. Your interview responses will only be shared with research team members and will ensure that any information we include in our report does not identify you as the respondent.

Participation in this study is voluntary and you can choose not to answer any question. You can withdraw your participation if you do not feel comfortable at any point of the time. However, we hope that you will participate in this study since your participation is important in the interest of your community.

The contact number of the Institute would be provided to you in case you have any query.

At this time, do you have any questions about the study?

May I begin the interview now?

Thank you!

Code no. _____

A. Socio-demographic details

1. Name : _____
2. Age : _____
3. Sex: _____
4. Number of family members : _____
5. Other work

B. Status of Dairy farming

Part (I)

6. Experience in dairy farming:
7. When did you kept cattle and for how much time?
8. Who did takes care of cattle?
9. Number of cattle :
10. Number of litres of milk being produced:
11. What did you do with the Milk?
12. Frequency of changing cattle:
13. Number of customers:
14. Cost of the production from the dairy:
15. Selling price of milk of that time :

Part (II)

16. Importance of dairy farming
17. Animal Health
 - i. Status of your animal health
 - ii. Availability of veterinarian

- iii. Veterinarian charges
- iv. Distance of pharmacy and hospital
- v. Cost of taking cattle in the hospital

- 18. Had disease in your cattle caused any problems in milk production?
- 19. How was small dairy farming work going?
- 20. Why you left the business? What were the reasons?
- 21. Do you want to start it again? Why? Could Small dairy farm be expanded at that time?
- 22. From where you get the milk for your requirement now?
- 23. Do you have any idea about current situation of small dairy farming?
- 24. What difference did you find now?
- 25. From where people prefer to buy milk now a days

C. Challenge/Opportunities

- 26. What did you like and dislike in dairy farming?
- 27. What were the opportunities for your business?
- 28. Facilitating factors which will help for growth of dairy farming
- 29. Did you face any problem in keeping cattle at home?
- 30. Past challenges faced in dairy
- 31. What were the threats to the business?

32. EXPERIENCE STORIES

- 33. Learning from the dairy farming work
- 34. Would you like to share some experience or stories related to dairy farming?

35. Do you know anybody who was in the dairy business earlier? And has now left.
If yes, why they left it? Can you share some cases?

Thank you for your valuable time and kind support

Interview guide for Households

CONSENT

My name is Mansi, postgraduate student of International Institute of Health Management Research, Dwarka, and New Delhi. I am conducting a study on topic 'Is small dairy farming dying?' The study has been commissioned by ILRI and PHFI.

The study involves In-depth interviews. This Interview is intended to get information from you regarding your perception on current status of small scale dairy farms and milk. The information you provide and the photographs taken would be kept confidential. Your interview responses will only be shared with research team members and will ensure that any information we include in our report does not identify you as the respondent.

Participation in this study is voluntary and you can choose not to answer any question. You can withdraw your participation if you do not feel comfortable at any point of the time. However, we hope that you will participate in this study since your participation is important in the interest of your community.

The contact number of the Institute would be provided to you in case you have any query.

At this time, do you have any questions about the study?

May I begin the interview now?

Thank you!

Code no. _____

A. Socio-demographic profile

1. Name: _____

2. Age: _____

3. Sex: _____

- 4. Number of family member
- B. Requirement of milk
- C. Source for getting milk
- D. Perception about milk
- E. Perception for small dairy farming business

Thank you for your valuable time and kind support

APPENDIX : 2 Pictures from Field Experience



Picture 1



Picture 2



Picture 3



Picture 4



Picture 5



Picture 6



Picture 7



Picture 8

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