A Study on Commercial Farming in Nepal:
A Case Study of Shree Laligurans Dairy Farm and Research Center, Khairahani-11, Chitwan

A Thesis

Submitted to

Central Department of Rural Development

Tribhuvan University, Kathmandu

In Partial fulfillment of the Requirement for the

Degree of the Master of Arts(M.A.)

In

Rural Development

Submitted By

JITEN BUDHA MAGAR

Central Department of Rural Development

Tribhuvan University, Kathmandu

TU Registration No: 6-2-22-805-2012

Exam Roll No:6488

September 2023

DECLARATION LETTER

I hereby declare that the thesis entitled "**A Study on Commercial Farming in Nepal: A Case Study of Shree Laligurans Dairy Farm and Research Center, Khairahani-11, Chitwan"**submitted to the Central Department of Rural Development, Tribhuvan University, is entirely my original work prepared under the guidance and supervision of my supervisor. I have made do acknowledgements to all ideas and information borrowed from different sources in the course of preparing this thesis. The results of this thesis have not been presented or submitted anywhere else for the award of any degree or for any other purposes. I assure that no part of the content of this thesis has been published in any form before.

……..

Jiten Budha Magar

Tribhuvan University

TU Regd.: 6-2-22-805-2012

Date: 2080/05/22

(2023-09-08)

RECOMMENDATION LETTER

The thesis entitled **A Study on Commercial Farming in Nepal: A Case Study of Shree Laligurans Dairy Farm and Research Center, Khairahani-11, Chitwan**has been prepared by **Mr. Jiten Budha Magar**under my guidance and supervision. I hereby forward this thesis to the evaluation committee for final approval and acceptance.

……..
Ramesh Neupane
Thesis Supervisor

Date: 2080/05/24
(2023-09-10)

APPROVAL SHEET

This thesis entitled**A Study on Commercial Farming in Nepal: A Case Study of Shree Laligurans Dairy Farm and Research Center, Khairahani-11, Chitwan**submitted by **Mr. Jiten Budha Magar**in partial fulfillment of the requirements for the Master of Arts (M.A) in Rural Development has been approved by the evaluation committee.

Evaluation Committee:

……
Associate Prof. Bishnu Bahadur Khatri
Head of the Department

…….
Associate Prof. Dr. Suman Kharel
External Examiner

……..
Ramesh Neupane
Supervisor

Date: 2080/05/29
(2023-09-15)

ACKNOWLEDGEMENTS

This study entitled “A Study on Commercial Farming in Nepal: A Case Study of Shree Laligurans Dairy Farm and Research Center, Khairahani-11, Chitwan”has been prepared for partial fulfillment of master’s degree in rural development.

First of all, I feel privileged to have Mr. Ramesh Neupane, Lecturer, Central Department of Rural Development as my thesis guide. Without his cordial help, guidance, valuable suggestions and continued inspiration and feedback, this thesis would never have taken this shape. It is now time to express heartful gratitude to him. The cooperation received from Associate Professor Bishnu Bahadur Khatri; Head of the Department and respected teachers and staffs of the Central Department of Rural Development can never be forgotten. Thus, I would like to express my sincere gratefulness to all of them.

I am extremely thankful to Krishna Bhandari and all other staff of cooperative for their cordial support. I would also like to thank local people of the study area who guided me through the data collection and my research.

I am deeply obliged to my parents for their love and encouragement in completing this thesis. Without their inspiration, I certainly would not have been able to finish my research work. I would like to express many thanks to all of my colleagues for their help, inspiration, and co-operation in preparing this thesis.

Jiten Budha Magar
Kathmandu, Nepal
September 2023

ABSTRACT

The study focuses on Shree Laligurans Dairy Farm and Research Center in Khairahani-11, Chitwan, aiming to assess its current state and potential for commercial cow farming. Objectives include analyzing local cow farming, exploring milk marketing channels, evaluating socio-economic impacts on the community, and identifying challenges and opportunities. The research aims to provide insights into the dynamics of commercial cow farming, shedding light on its implications for the local economy and Khairahani-11, Chitwan's broader community with the help of descriptive data analysis through tabular form.

It has fostered strong ties with the local community, providing employment to 8 locals, technical support, training, and supporting local agriculture. The farm's engagement in community development projects, employment generation, and affordable manure provision has elevated its social standing, enhancing relationships and economic opportunities.

Economically, while the farm demands substantial investment with 38 crores, it maintains a balanced income and cost structure. It currently relies on calf breeding for profitability and contributes significantly to the local economy by employing over 55 individuals. Monthly incomes of people have risen by around 30% average for both community members and employees, leading to improved financial stability and investments in the local infrastructure. Environmental responsibility is evident through waste management practices, minimizing pollution risks. Despite challenges like managing unproductive cattle, the farm prioritizes hygiene and health. Embracing modern technology, especially in milking and storage, ensures product quality. Streamlined marketing channels facilitate dairy product distribution.

In conclusion, Laligurans Cow Farm serves as an economically self-sustaining entity with positive impacts on the social, economic, and environmental aspects of the local community. While agricultural challenges persist, the farm's commitment to responsible practices and continuous improvement positions it as a catalyst for socio-economic transformation in the region. Addressing challenges and leveraging opportunities will be crucial for its sustained growth and community betterment.

TABLE OF CONTENTS

LIST OF TABLES

Table No. Title Of table Page No.

LIST OF FIGURES

ABBREVIATIONS/ ACRONYMS

ADS	:	Agriculture Development Strategy
AGDP	:	Agriculture Gross Domestic Product
APP	:	Agriculture Perspective Plan
CASA	:	Commercial Agriculture for Small holders and Agribusiness
CDRD	:	Central Department of Rural Development
CDSPL	:	Countryside Dairy Services Private Limited
CFUG	:	Community Forest User Group
DDC	:	Dairy Development Corporation
DDCN	:	Dairy Development Corporation
DDP	:	Dairy Development Policy
FAO	:	Food and Agriculture Organization
FGD	:	Focused Group Discussion
GDP	:	Gross Domestic Product
GPS	:	Geographical Positioning System
KII	:	Key Informant Interview
LGDP	:	Livestock Gross Domestic Product
MoALD	:	Ministry of Agriculture and Livestock Development
NAP	:	National Agriculture Policy
NDDB	:	National Dairy Development Board
SMP	:	Skimmed Milk Powder
VAT	:	Value Added Tax
WHO	:	World Health Organization

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Agriculture holds a central position in Nepal's economy, and the practice of livestock rearing, with a strong emphasis on cow farming, has been a longstanding tradition spanning more than 4,000 years, dating back to the Gopal dynasty. In the past, cow farming primarily served subsistence purposes, but in recent years, there has been a notable rise in commercial cow farming across the country. Notably, organizations such as Organic Farm Nepal have played a pioneering role in advancing commercial cow farming. Within the broader livestock sector, the dairy sub-sector stands out as the most significant contributor, accounting for nearly 63% of the Livestock Gross Domestic Product (LGDP) and 9% of the Agricultural Gross Domestic Product (AGDP) (National Dairy Development Board, 2021).

The livestock sector, comprising cattle and other livestock, holds considerable sway over Nepal's agricultural Gross Domestic Product (GDP), making a substantial impact on the nation's overall economic landscape. It contributes significantly, representing approximately 8% of the total GDP, and its role is even more pronounced within the agricultural GDP, where it commands a noteworthy share of 25.68%. Within this sector, the dairy industry takes center stage, boasting an extensive network of roughly 500,000 dairy farmers and around 1,700 dairy cooperatives operating throughout the country. This extensive network not only fuels the growth of the dairy sector but also serves as a vital source of livelihoods and income for the rural population of Nepal. By providing gainful employment opportunities and income generation avenues, the dairy sector plays a pivotal role in fostering economic sustainability and prosperity in the rural regions of the country. (National Dairy Development Board, 2021).

Despite the significant role of livestock, particularly cattle and buffalo, in Nepal's agricultural landscape, milk production in the country remains relatively modest at 1,700,073 metric tons. Within this production, cattle contribute 31%, while the remaining share comes from buffalo. There exists substantial untapped potential for growth within the dairy sector, driven by factors such as urbanization, migration, and the rising demand for milk in major cities. However, the current state of cattle production and productivity in Nepal leaves much room for improvement, as the

average yield per lactation stands at a mere 519.56 liters, highlighting the need for enhanced practices and technologies.

The practice of cow farming holds a rich historical legacy, tracing its origins back to ancient civilizations in regions like Mesopotamia and the Indus Valley. Over millennia, it has evolved from traditional subsistence methods to contemporary, industrialized approaches, ultimately becoming a cornerstone of global agriculture and food production. While traditional cow farming primarily aimed at fulfilling basic family needs, modern cow farming now places greater emphasis on commercial profitability and employs advanced techniques in areas such as feeding, breeding, and labor management.

Looking at the current trends, cow farming is considered as one of the most important businesses taking cow as a milk producer (Shrestha, 2016). Efforts have indeed been undertaken to elevate cattle performance in Nepal by introducing crossbreeding with exotic breeds. However, it's worth noting that research and development in the dairy sector have faced certain limitations, particularly concerning the precise suitability of specific germ plasmas for enhancing cattle improvement. In the country, the landscape of commercial cow farming is undergoing a significant transformation, shifting from its traditional subsistence roots to a more capital-intensive, technology-driven model that places a primary emphasis on maximizing profitability. A critical aspect of this transition involves distinguishing and promoting the commercial livestock farming sector separately from traditional crop farming, which serves various purposes, including energy production, religious significance, and food security.

The government plays a pivotal role in promoting and bolstering commercial cow farming in Nepal, offering various forms of support such as bank loans, livestock insurance, training programs, technical assistance, and infrastructure development initiatives. The shift towards commercialization not only contributes to diminishing the need for imports but also serves as a catalyst for job creation and income generation within the country. A shining exemplar of this transformation can be seen in the case of Shree Laligurans Cow Farm, located in Chitwan, which stands out as a prominent and well-equipped commercial farm in Nepal. It serves as a testament to the evolving lifestyles and changing economic dynamics in the region. The dairy

sector has attracted a substantial investment of around Rs 30,000 million, and this sub-sector alone offers direct employment opportunities to approximately 20 thousand individuals. (National Dairy Development Board, 2021).

In conclusion, commercial cow farming in Nepal is on the rise, and it holds significant potential to boost the economy, reduce imports, and provide livelihood opportunities, but there's a need for continued research and development to improve cattle productivity and performance.

1.2 Statement of the Problem

The emergence of commercial dairy farming in Nepal represents a relatively recent development, albeit one characterized by limited success stories primarily due to the considerable production costs associated with milk production, which often eat into farmers' anticipated profits. A significant portion of the income generated from milk sales is frequently diverted towards the acquisition of livestock feed, potentially undermining the economic viability of dairy farming for many. Additionally, the availability of suitable pastureland remains a challenge in the realm of commercial cow farming, as individual farmers may face difficulties in procuring the necessary equipment and cooling facilities essential for handling this delicate product. In this context, the role of cooperatives becomes paramount for effective management and resource sharing. The dairy sector grapples with various issues, including a lack of access to institutional credit services, a depressed milk price, the high cost of fodder, inadequate veterinary services, and the exorbitant price of superior dairy animal breeds. (Silwal, 2009).

In Nepal, still large quantity of milk and milk products are imported, which has to be tackled by the increase in commercialization in cow farms (Shrestha, 2016). In Nepal, the primary focus of cattle farming has traditionally revolved around subsistence agriculture and supporting crop production rather than being geared towards commercial endeavors. This historical orientation has led to a dearth of marketing knowledge, consequently resulting in subpar agricultural productivity. Subsistence farming grapples with a range of issues, including unhealthy competition, exploitation by middlemen, diminished profitability, escalating costs associated with cattle feed and fodder, and a dearth of high-quality seed varieties for crop production. The

intricacies of milk production costs are contingent on a multitude of factors, rendering it challenging to determine milk prices in isolation. While farmers primarily concern themselves with the prices they receive for their milk, there exists a pressing need for increased transparency in the pricing process and the implementation of a scientifically informed pricing policy. Such measures are essential to foster and elevate the development of the dairy sector. This study tried to answer the following questions:

i. What is the status of cow farming in the study area?
ii. What are the marketing channels of milk and milk products?
iii. What is the role of cow farming in changing the socio-economic status?
iv. What are the problems and prospects of cow farming in the study area?

1.3 Objectives of the Study

The general objective of this study is toanalyze the commercial cowfarminginShree Laligurans Dairy Farm and Research Center in Chitwan.

The specific objectives are:

i) To analyze the status of cow farming in the study area.
ii) To assess the marketing channels of milk and milk products.
iii) To analyze the role of cow farming in changing socio-economic status.
iv) To analyze the problems and prospects of cow farming in the study area.

1.4 Significance of the Study

The research focuses on assessing the status of commercial cow farming at Shree Laligurans Dairy Farm and Research Center, located in Khairahani-11, Chitwan. It aims to examine the socio-economic transformations experienced by the local population and dig into the challenges and opportunities associated with commercial cow farming. This micro-level investigation seeks to provide foundational insights and general directions for farmers, planners, entrepreneurs, and relevant authorities regarding the practices of commercial cow farming.

This study is intended to serve as a reference point for farmers, policymakers, and researchers in understanding how commercial cow farming can enhance people's

livelihoods while simultaneously preserving natural and cultural resources. Furthermore, it will equip future researchers and planners with valuable knowledge to guide their actions and strategies effectively.

1.5 Limitations of the Study

The scope of this study is confined to Shree Laligurans Dairy FarmAnd Research Centre, which is located inKhairahani Municipality of Chitwan. Consequently, the research doesn't extend its investigations to include other farms or subsistence farming practices, as its primary focus is solely on commercial cow farming. It's important to note that the study's findings and conclusions may not be universally applicable to other regions of the country since they are derived from survey-based evidence specific to the study area.

1.6 Organization of the Study

The first chapter serves as the Introduction, providing a clear overview of the concept of commercial cow farming, along with the research objectives and a fundamental outline.The second chapter, titled Literature Review, consolidates various insights from different authors and previously explored concepts, while also examining the practical aspects of commercial cow farming.The third chapter, titled Research Methodology, elaborates on the approaches used to conduct the research and the methods employed to collect data.The fourth chapter, titled Data Analysis, involves the application of data to find solutions or perform necessary mathematical calculations, as required by the study.The final chapter, is the Conclusion, where the research findings are summarized, and the final verdict on these findings is presented.

1.7 Operational Terminologies

Socio-economic status: The socio-economic status of Shree Laligurans dairy farm and research Center is identified which includes health, education, occupation, employment, Training, infrastructure, women empowerment, community relation, etc. in social sector; land, income, expenditure, saving and other economic sources such as indebtedness, etc. in economic sector.

Commercial: The term "commercial" refers to activities or enterprises that are primarily undertaken for the purpose of making a profit or engaging in trade and business. Commercial activities typically involve the production, purchase, sale, or exchange of goods and services in the market, with the aim of generating revenue and achieving financial gain.

CHAPTER TWO: LITERATURE REVIEW

2.1 Conceptual Review

2.1.1Dairy Farming

Agriculture holds a pivotal role in Nepal's national economy, contributing significantly to the GDP, accounting for 27% as of 2019. Within the broader agricultural sector, the livestock segment, which encompasses dairy farming, plays a substantial role, constituting approximately 28% of the Agricultural Gross Domestic Product (AGDP). Among the various facets of the livestock industry, dairy farming stands out as the most influential, representing a staggering 63% of the livestock GDP and 9% of AGDP in the year 2019. The dairy sector in Nepal is a bustling hub, engaging over 500,000 dairy farmers and involving the operation of 1,700 dairy cooperatives, which collectively serve as a vital source of rural employment and income generation. This sector has garnered significant investments, estimated at around NPR 30 billion, and directly employs roughly 20,000 individuals. Furthermore, the dairy sub-sector serves as a conduit for transferring funds from urban consumers to rural producers, facilitating an estimated daily flow of NPR 60 million (NDDB, 2016).

Livestock contribute approximately about 25.68 percent of Agricultural Gross Domestic Product (AGDP) (Pant, et al., 2020). Despite its significant economic significance, the dairy sector in Nepal grapples with instability and frequent market fluctuations. The practice of implementing 'Milk Holidays' during surplus seasons was initiated in 1992 as an attempt to address this issue, subsequently leading to the emergence of private dairy industries. However, the establishment of a milk processing plant designed to handle a substantial daily volume of 320,000 liters for the production of SMP (Skimmed Milk Powder) and butter encountered numerous challenges, including both internal and external factors, such as the impact of international market price fluctuations. The dairy sector currently faces inadequacies in supply and demand assessment and forecasting, which pose difficulties for both producers and processors. One common concern among dairy farmers revolves around the high cost of milk production, primarily driven by expensive inputs like feed. Additionally, the absence of effective land use policies hinders the adoption of cost-effective forage-based feeding systems, further compounding the challenges

faced by the sector. Additionally, the management of unproductive dairy cattle due to existing laws has increased production costs and raised socio-cultural and environmental concerns (CASA, 2020).

The dairy sub-sector has undergone a notable shift from subsistence farming to a more semi-commercial or even commercial status in recent times. This transformation can be traced back to its inception in the 1950s, marked by significant milestones such as the establishment of the Yak cheese production center in Langtang, Rasuwa. This was followed by the creation of a milk processing facility in Tusal, Kavre, and the establishment of key institutions like the Dairy Development Commission in 1955 and the Dairy Development Corporation (DDC) in 1969, all of which played pivotal roles in driving this transformation. (CASA, 2020).

According to recommendations from the FAO/WHO, Nepal's per capita milk consumption requirement stands at 92 liters annually, yet the country's current production amounts to approximately 79 liters per person per year. This results in an average daily deficit of around 550,000 liters of liquid milk, with seasonal variations ranging from 10% to 20% during the lean season (March-July) and the flush season (August-February). While the annual rate of milk production is increasing at a steady 3.4%, the demand is surging at a faster pace of 8%, signifying a widening gap between supply and demand unless substantial changes occur in milk production. At present, only a modest 14-16% of farmers have transitioned to commercialized operations, indicating that the dairy sector is still in its early stages of development.

Managing the dairy sector faces a significant challenge due to the seasonal milk cycle, which comprises flush and lean seasons. Despite consistent milk demand throughout the year, milk supply experiences substantial fluctuations, with a production ratio of 65:35 between the flush season and lean season. The Dairy Development Corporation (DDC), a state-owned enterprise, exerts substantial influence in the market, as it manages approximately 40% of the total milk production. It holds considerable sway in determining both the purchase prices for farmers and consumer prices. However, its market dominance has waned, with private dairies now claiming over 56% of the market share, indicating a decline in the brand value associated with DDC.(CDSPL & MDTPL, 2020).

The cattle feeding and gathering practices in Nepal hold significant promise for economic returns, considering that the term "money" itself has roots in these practices (O'Connell, McAdam, & Kelly, 2016). Approximately half of the total milk production in Nepal is consumed by the producers themselves, while the remaining portion is distributed through formal and informal channels. The informal sector contributes to 33% of the total milk production and encompasses the sale of unprocessed milk through various avenues such as hotels, restaurants, local markets, and milk vendors. In contrast, the formal sector represents only 17% of the total production and revolves around the marketing of packaged milk products by milk processing industries. These products include items like liquid milk, curd, yogurt, flavored milk, paneer, ice-cream, ghee, various types of cheeses, sweets, and other dairy products (CASA, 2020).

The Nepal Dairy Development Board (NDDB), founded by the government in 1992, functions as the primary policymaking entity tasked with overseeing the comprehensive development of the dairy sector. NDDB operates as an intermediary, facilitating collaboration between the private and public sectors, shaping milk price policies, assessing the effectiveness of dairy development initiatives, and mobilizing resources to foster the growth of the dairy industry. NDDB routinely conducts in-depth studies on the production costs associated with milk, subsequently recommending minimum milk prices to the Ministry of Agriculture and Livestock Development (MoALD), with a particular emphasis on ensuring equitable compensation for both farmers and processors(NDDB, 2019).

Milk production in Nepal has exhibited a consistent annual growth rate of at least 3.4%, owing to various factors such as advancements in breeding, improved feeding practices, enhanced animal health measures, the transition from traditional to commercial dairy farming, and the overall development of the dairy value chain. Nevertheless, there has been a persistent upward trend in the costs associated with inputs for milk production, while milk prices have remained relatively stable in recent times. In light of this scenario, the Nepal Dairy Development Board (NDDB) has taken proactive steps by launching a comprehensive study aimed at evaluating the cost of milk production across various scales of dairy farms.

In Nepal, there are a total of 2,788 officially registered dairy farms, which can be classified into four distinct categories based on their livestock holdings: farms with fewer than 5 animals (415 farms), those with 5 to 10 animals (1,413 farms), farms with 11 to 30 animals (732 farms), and farms with more than 30 animals (117 farms). Furthermore, the country boasts a widespread network of milk collection centers, predominantly owned and managed by farmer cooperatives (CASA, 2020).

2.1.2 Historical Review

Cow farming, also known as cattle farming or ranching, boasts a rich and ancient history spanning millennia, and its evolution has played a pivotal role in the advancement of human civilization.

Ancient Origins: The roots of cow farming trace back to the ancient civilizations of Mesopotamia and the Indus Valley. Dating back to around 6000-7000 BCE, humans began the process of domesticating wild cattle, including creatures like aurochs, primarily for their meat, milk, and labor. Cattle quickly became indispensable in agriculture, serving as draft animals for plowing fields and pulling carts.

Global Spread: The practice of cow farming spread across the globe as various civilizations emerged. In ancient Egypt, cows held a revered status and were associated with deities like Hathor. In India, the sacred reverence for cows led to their protection and the development of a thriving dairy industry. In Mediterranean regions, cattle farming played a crucial role in supporting the Greek and Roman economies. It's worth noting that cattle farming took root in the eastern Sahara no later than 9000 years ago (ThoughtCo., 2017).

Age of Exploration: The Age of Exploration brought about significant developments as European colonists introduced cattle to the Americas. This laid the foundation for the establishment of cattle ranching in regions like the American West and the Pampas of South America. Cattle became emblematic of wealth and prosperity during the era of the American cowboy.

The 19th and 20th centuries marked a period of substantial transformation in cow farming, driven by industrialization. Cattle ranches expanded in size, and selective breeding programs were introduced to enhance meat and milk production. The advent of railroads and refrigeration revolutionized the distribution of beef on a global

scale.In more recent decades, cow farming has continued to modernize with the integration of technology. Automated milking systems, GPS tracking for cattle, and genetic engineering have all contributed to improved efficiency and productivity in the industry. Large-scale industrial feedlots have become commonplace for beef production.

Historical Development of Cow Farming Nepal

The Gopal Dynasty, an early ruling lineage in the history of Nepal, is believed to have thrived in ancient times, and during their reign, the practice of cow farming played a central role in sustaining their society. Originated in western part of Asia, Aryans left their original place around 3500 BC, owing to dearth of grassy lands for feeding their cattle (Subedhi, 2023). Much like many other ancient civilizations, the people residing in the Kathmandu Valley placed heavy reliance on agriculture and the care of animals for their means of subsistence. Cows, fulfilling roles as sources of milk, meat, and draft power, occupied essential positions in their way of life. These cattle were not only pivotal for plowing fields but also for the transportation of goods, thereby making significant contributions to agricultural productivity. Furthermore, with the growing influence of Hinduism, which venerates cows as sacred beings, it is highly likely that these animals held profound cultural and religious significance during that era, receiving deep respect and reverence in the process. Later the official base of cow farming was built after the then prime minister Jung Bahadur Rana imported cows from UK way back in 1917 BS (National Livestock Breeding Office, 2077).

2.1.3 Mythological Review

Cow farming holds deep mythological and religious significance across a diverse array of cultures, with Hinduism standing out for its profound reverence toward cows as one of the holiest and most sacred creatures. This deep veneration finds its roots in a multitude of myths and religious texts that attribute cows and cattle with exceptional importance. Within Hinduism, the cow embodies a sense of sanctity and is intricately associated with numerous deities, particularly Lord Krishna, often depicted as a cowherd. Milk from cows is considered inherently pure, and even their dung and urine are deemed to possess ritualistic and medicinal value. The respect and adoration for cows are deeply ingrained in Hindu culture, with the act of cow protection being regarded as a sacred duty (Brown, 1964).

Within the realm of Hindu mythology, the enchanting figure of Kamadhenu emerges, believed to have originated from the churning of the ocean (Samudra Manthan). Also known as Surabhi, this mythical cow of divine origin is celebrated as a wish-fulfilling entity, capable of granting one's desires. She is hailed as the mother of all cows and embodies concepts of abundance, fertility, and prosperity(Wilson H. H., 1866).

The Rigveda, an ancient and revered text in Hinduism, contains hymns that extol the virtues of cows and their pivotal role in Vedic rituals. In these ancient rituals, cows were offered as sacrificial offerings and were seen as intermediaries bridging the realms of humans and gods(Wilson H. , 1866).

In contemporary Hinduism, the cow is affectionately referred to as "Gau Mata" or Mother Cow, emphasizing her nurturing and maternal qualities. For many Hindus, safeguarding and caring for cows are not just practical actions but forms of spiritual devotion, believed to accumulate significant merit.

Beyond Hinduism, cattle and cows feature in the mythologies of other cultures as well. In Greek mythology, for instance, the mischievous god Hermes famously stole cattle from Apollo, leading to various captivating adventures. In Norse mythology, the cow Audumbla played a pivotal role in the creation of the world.

In summary, cow farming resonates with profound mythological and religious significance, particularly within Hinduism, where cows symbolize purity, abundance, and the sacred duty of protection. These cultural and religious beliefs have also left their mark on the treatment of cows in various other mythologies and cultures worldwide.

2.2 Theoretical Review

A theoretical examination of cow farming encompasses the exploration of various theoretical frameworks, principles, and models that underlie the practice of raising cattle. Such a review typically delves into several key areas:

Agricultural Economics: This branch of economics delves into the economic aspects of cow farming, including factors such as supply and demand dynamics, production costs, market structures, and pricing mechanisms. Theoretical frameworks in agricultural economics help shed light on how economic factors influence decision-

making in cow farming, such as resource allocation, investment, and risk management.

Animal Science and Nutrition: Theoretical models in animal science and nutrition provide insights into the nutritional requirements of cows, their growth, reproduction, and overall health. This knowledge is essential for optimizing feed formulations, managing herd health, and enhancing productivity.

Sustainable Agriculture: Theoretical perspectives on sustainable agriculture within the context of cow farming emphasize environmentally responsible practices, resource conservation, and the long-term sustainability of farming systems. These frameworks address issues such as soil health, water management, and biodiversity conservation.

Livestock Management: Theoretical reviews in livestock management explore principles related to animal behavior, welfare, and husbandry. This knowledge aids in the development of strategies for efficient cattle handling, housing, and disease prevention.

Breeding and Genetics: Theoretical frameworks in breeding and genetics help in understanding hereditary traits, selective breeding, and genetic improvement in cattle. This is crucial for enhancing desirable traits like milk production, meat quality, and disease resistance.

Technological Advancements: Theoretical considerations concerning technological advancements in cow farming encompass areas such as automation, precision farming, and data analytics. These frameworks explore how technology can optimize farm operations and decision-making.

Rural Development: Theoretical perspectives on rural development underscore the social and economic impacts of cow farming on rural communities. They consider factors such as income generation, employment opportunities, and community well-being.

Environmental Impact: Theoretical reviews on the environmental impact of cow farming examine issues related to greenhouse gas emissions, land use, and resource utilization. These frameworks aim to address and mitigate the negative environmental effects associated with cattle production.

A theoretical review in cow farming involves the synthesis and analysis of existing research, models, and theories from these and related fields. It provides a theoretical foundation for comprehending and enhancing various aspects of cow farming, ranging from economic viability and sustainability to animal welfare and technological innovation.

2.3 Policy Review

Nepal maintains a predominantly agrarian economy, with approximately 66 percent of its population involved in agricultural pursuits, contributing to 35 percent of the nation's Gross Domestic Product (GDP). Within the agricultural sector, the livestock subsector assumes a substantial role, accounting for 24 percent of the total agricultural GDP. This sector holds paramount importance in ensuring food and nutritional security for the population, supporting livelihoods, fostering regional development, promoting gender equality, and addressing rural poverty. Despite its significance, Nepal currently lacks a dedicated national livestock policy. Instead, policies related to livestock are dispersed across various sectors, including agriculture and others (Pradhanang, et al., 2015). The policy review related to livestock highlights critical gaps in Nepal's livestock sector development.

The various agricultural and livestock-related policies in Nepal have played pivotal roles in shaping the country's approach to these sectors. Let's review and rephrase the key points:

Agricultural Perspective Plan (APP), 1995-2015: The APP in Nepal had a vision of prioritizing the growth of the livestock sector, aiming to increase its contribution to the Agricultural Gross Domestic Product (AGDP) and promote commercialization. It emphasized private sector involvement, recognized the importance of public sector investment in areas like transportation, irrigation, and research, and aimed to address regional balance and gender equality. However, implementation faced challenges due to limited resources, coordination issues, and weak planning. It fell short of achieving targeted growth rates in milk and meat production and did not adequately address existing legislation and climate change effects(Agricultural Project Services Centre, 1995). Policy inconsistencies, especially regarding the privatization of the Dairy Development Corporation (DDCN), highlighted the need for reforms, such as tax

exemptions and VAT considerations for dairy products. These factors led to the development of a new strategy, the Agriculture Development Strategy (ADS), by the Nepal Government (Pradhanang, et al., 2015).

National Agriculture Policy (NAP), 2004: The 2004 National Agriculture Policy (NAP) aimed to shift subsistence farming towards a competitive, commercial model. Its objectives included increasing agricultural productivity, enhancing competitiveness in global markets, and conserving natural resources. NAP adopted a decentralized and inclusive approach, benefiting small-scale livestock farmers and marginalized communities. It established structures like the National Agricultural Development Board and promoted high-value products, livestock insurance, and organic farming(Nepal Law Commission, 2004).

Forestry Sector Policy, 2000 (Forest Policy, 2000): The Forestry Sector Policy of 2000 has implications for livestock, as it relates to grazing and fodder collection in forests. Strengths and opportunities include simplifying the transfer of forestry to Community Forestry User Groups (CFUGs), promoting commercial forest management in certain areas, and linking livestock quantities to fodder production for improved forest management. Challenges include disputes over forest resource use and the need for better coordination between livestock management and forest handover to CFUGs. Recommendations include aligning forage development programs with the Agriculture Development Strategy and raising farmer awareness of forage and pasture cultivation (Pradhanang, et al., 2015).

Dairy Development Policy, 2007 (2064 BS): The Dairy Development Policy (DDP) of 2007 aimed to boost income, employment, and poverty alleviation through dairy business investment. It encouraged organizations to provide collateral-free soft loans and technical assistance to farmers, especially women and underprivileged communities. DDP promoted livestock insurance, entrusting the Department of Livestock Service with technical support for quality dairy production. It emphasized the long-term participation of public, private, and cooperative sectors in dairy production and rural poverty reduction. Challenges included the need for community-based loan security, addressing social stigma against certain dairy producers, and expanding rural access to livestock support services and loans (Pradhanang, et al., 2015).

Livestock Insurance Policy and Agriculture and Livestock Insurance Regulation (2013): Livestock insurance is crucial, especially for small and low-income farmers in Nepal. Premature mortality rates for livestock are high, making insurance essential for farmers' financial security and access to credit. Risks as disease, lack of veterinary services and natural disasters as earthquakes, floods and landslides assert itself as most vulnerable variables for livestock enterprises (Dangi, 2022). Nepal introduced the Livestock Insurance Regulation and Policy to encourage financial institutions to support agricultural projects by providing proper insurance coverage. This initiative aims to facilitate access to credit for livestock and agricultural ventures (Pradhanang, et al., 2015).

Breeding Policy, 2011 (2068): The Breeding Policy of 2011 aimed to improve milk, meat, and egg productivity, thereby increasing farmers' income. It focused on utilizing, conserving, and enhancing genetic resources for higher productivity. Recommendations included developing livestock and poultry resource centers through public-private partnerships and prioritizing programs for conserving endangered indigenous breed(National Livestock Breeding Office, 2077).

Animal Health Program Implementation Procedure, 2013 and Animal Health and Livestock Services Act, 1999: These initiatives focus on promoting healthy livestock production and distribution. However, there's a need to establish policies and procedures to safeguard livestock from emerging internationally endemic diseases (Pradhanang, et al., 2015).

In analyzing these policies, it becomes evident that Nepal requires a comprehensive national livestock policy accompanied by institutional support and adequate resources to foster sustainable growth in livestock production and productivity. This policy should prioritize inclusivity, pro-poor strategies, gender mainstreaming, climate change resilience, and the protection of underprivileged and indigenous communities' interests. Through such a policy, Nepal can chart a more equitable and prosperous path for its livestock sector.

2.4 Empirical Review

An empirical examination of cow farming on a global scale reveals a multifaceted industry with profound implications for agriculture, economies, and sustainability.

Cow farming, especially for meat and dairy production, plays a pivotal role in the agriculture sectors of many countries. Empirical evidence highlights the increasing demand for beef and dairy products, driven by population growth and rising incomes. Modern technologies have become commonplace in large-scale commercial operations, significantly boosting productivity. Genetic enhancements and selective breeding have led to higher yields of milk and meat. However, this intensification has raised concerns regarding animal welfare, environmental sustainability, and ethical practices. Studies underscore the substantial carbon emissions associated with the industry and emphasize the need for sustainable approaches to mitigate environmental impacts. Furthermore, there is a growing interest in alternative protein sources, such as plant-based and lab-grown meat, as empirical research suggests their potential to reduce the environmental footprint of traditional cow farming. Empirical studies also highlight the necessity of striking a balance between economic development and food security while considering ethical and environmental factors, leading to ongoing discussions and initiatives that will shape the future of cow farming on a global scale.

In the context of Nepal, an agriculturally dependent country, cattle farming has been a long-standing practice. Initially, people engaged in primitive and subsistence-oriented farming methods. However, with modernization and the introduction of open-market systems, people have recognized the opportunities in this sector. Alongside emerging trends, new approaches to cattle rearing and care have also emerged. Those deeply involved in the livestock sector have officially registered a total of 6,486 farms. Among these, 35% are dedicated to goat farming, followed by 19% for cow farming, and 14% for buffalo farming(Kafle, 2022). Now there are substantial number of registered cow and buffalo farms in Nepal producing substantial volume of milk per day. According to statistics from the Ministry of Livestock Development, there are 7.2 million head of cattle and 5.4 million head of buffalo in Nepal and in 2016, 3,000 dairy farms and 424 buffalo farms were registered(Pant K. R., 2017).

Cow farming in South Asia

Cow farming in South Asia holds a central and multifaceted role in the region's agriculture, culture, and economy. Its historical roots span thousands of years, deeply entwined with the fabric of South Asian societies. The cow, especially revered in Hinduism, the dominant religion in countries like India, Nepal, Bangladesh, and Sri Lanka, carries profound religious significance. This sacred status has historically led

to the protection of cows and the prohibition of cow slaughter in various regions, fostering the growth of dairy farming. In South Asia, small-scale, family-owned cow farming operations are commonplace, providing essential dairy products and serving as draft animals for agricultural tasks. Nevertheless, the region is witnessing the emergence of larger commercial dairy farms due to the escalating demand for milk and dairy products. Challenges, including disease outbreaks, limited access to veterinary services, and environmental concerns such as deforestation for grazing land, persist. However, cow farming remains a vital source of livelihood for millions in South Asia, and the industry continues to evolve as it navigates the delicate equilibrium between tradition, economic progress, and sustainability.

Cow farming in India

Cow farming in India occupies a distinctive and multifaceted role within the nation's socio-cultural, economic, and agricultural framework. India is home to one of the world's most significant cattle populations, with an approximate 300 million cows as of 2021, contributing to a total milk production of 187.7 million tons in the 2018/19 period(Singh, 2020).This prominence can be primarily attributed to the profound religious importance of cows in Hinduism, where they are held in the highest reverence and affectionately referred to as "Gau Mata" or Mother Cow. This religious veneration has historically manifested in policies aimed at safeguarding cows, with numerous Indian states enacting strict laws against cow slaughter.

The importance of cow farming in India goes beyond religious beliefs. India stands as one of the globe's leading producers of milk and dairy products, and cow farming plays a vital role in fulfilling the nation's dairy needs. Empirical evidence underscores the substantial contribution of the dairy sector to India's agricultural GDP and its role in sustaining the livelihoods of countless small-scale dairy farmers (Punjabi, n.d.). In recent years, there has been a shift toward improving dairy productivity through selective breeding and modern agricultural practices.

Despite its cultural and economic significance, cow farming in India encounters several challenges. These include insufficient access to veterinary services, disease outbreaks, and environmental sustainability concerns. Furthermore, the discussion on cow protection has occasionally sparked social and political tensions. The propagation

of unfounded and unscientific myths about cow farming negatively impacts both the commercial and impoverished farmers' economies. (Singh, 2020).

In summary, cow farming in India is intricately connected to the religious, cultural, and economic facets of society. It serves as a crucial means of livelihood for numerous individuals and holds a central position in the nation's dairy sector. Nonetheless, as India undergoes ongoing modernization and urbanization, the industry confronts the twin tasks of satisfying the escalating dairy needs while simultaneously addressing issues surrounding animal welfare and environmental sustainability.

Cow Farming in China

Cow farming in China has undergone significant expansion and evolution in recent years, mirroring shifts in the nation's dietary patterns, urbanization trends, and economic progress. China's appetite for beef and dairy goods has grown substantially, driven by increased incomes and changing consumer tastes. As per data from the Food and Agriculture Organization (FAO), China's beef production nearly tripled from 1990 to 2020 (Dolberg & Finlayson, n.d.). In response to this burgeoning demand, the Chinese government has made investments in the modernization of the cattle farming sector, the promotion of high-yield cattle breeds, and the improvement of livestock management practices.

Large-scale commercial operations have become increasingly common in China, resulting in enhanced productivity but also raising important issues regarding animal welfare and environmental consequences. The transition toward industrialized cattle farming has presented challenges related to land utilization, water resources, and greenhouse gas emissions. These concerns have gained prominence in China's efforts to encourage more sustainable agricultural practices, as noted by The World Bank. Additionally, there is a growing interest in alternative protein sources, such as plant-based and lab-grown meat, which are seen as potential solutions to mitigate the environmental impact associated with traditional cow farming.

To summarize, cow farming in China mirrors the broader dynamics of the country's economic growth and evolving consumer preferences. While the industry has experienced significant modernization driven by increased demand for beef and dairy, it is also confronted with sustainability and ethical considerations that are shaping its

future direction. Furthermore, further research and investigation are necessary to address the challenges posed by modernization (Gao, 2006).

2.5 Analytical Framework

Dimensions of enquiry	**Variables**	**Sub-variable**
Status of Cow Farming	Social Status	Involvement of people in Farm, Relationship between farm and locality, Support from farm to local and infrastructure development, Employment generation.
	Economic Status	Investment, Profit, Land occupied, Employee number, salary, bonus and insurance
	Environmental status	waste management, policy related to environment conservation, Environmental and waste management Issues.
	Quantity and Quality of cow	Breeds of Cow, Checkup of Cow, cleaning of cows and their sheds, Availability of Specialist, Precaution.
	Marketing Channel	KII guideline have been used for identifying the marketing channel.
	Technological review	Milking device, chilling center, Breeding technology, Production of grass and fodder and fed technology.
Analysis of the marketing channel	Marketing Channel	KII guidelines have been used to analyze the market and channels used for selling milk and milk products
Changing Socio-economic Status	People's Education	level of education,
	Occupation	Occupational status of households.
	Employment	Type of employment among the members of employee and local people.
	People's	People perception toward farm, their

	perception	perception toward local people.
	Training	Training before and after farm establishment.
	Housing facility	Housing facility for employee and local village.
	Insurance	Number of Insured people in farm and local village.
	Expenditure	Area of expenditure of farm and local people.
	Savings	Total saving of farm and local people.
	Indebtedness (Loan)	Source, reason, amount and source of payback.
Problems and Prospects	Problems	Analyzing the problems during farm management and identification of prospects of cow farm in research area.
	Prospects	

2.6 Research Gap

There are important areas in commercial cow farming that need more research. Better ways to make big dairy farms more eco-friendly, like managing waste, using renewable energy, and using the land wisely has to be sought. Secondly, we don't know enough about how to manage diseases in big farms, so we need to study how to keep dairy cows healthy, including using antibiotics carefully and having strong safety measures. Thirdly, we should figure out how to feed cows more efficiently because it's costly. We need to research better nutrition and feeding methods to save money and increase productivity. Fourthly, we need to study how cows are treated on big farms, like their living conditions and how stress affects their health. Lastly, we need to understand if commercial cow farming is a good business in the long run and what factors make it profitable and how to manage risks. Fixing these research gaps will help make dairy farming more sustainable, efficient, and better for the cows.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research Design

The research has basically been designed to investigate socio-economic impacts of cow farm and as well as to explore problems and prospects. According to F.N Kerlinger, “Research design is the plan, structure and strategy of the investment conceived so as to obtain answer to research questions and to control variables.” Descriptive Research Design has been used where descriptive research design means the process if accumulating facts. According to Best and Khan, “A descriptive study describes and interprets what is, it is concerned with conditions or relationships that exists, opinions that are held, processes, that are going on, effects that are evident or trends that are developing.”

3.2 Rationalefor the Selection of the Study Area

Despite the dependence in agriculture and livestock and its potential, there are very least number of cow farms officially registered in Nepal. The majority of milk and by-products of milk is being imported from other countries. The availability of massive pasturelands and forests for grazing, availability of barren lands for farming has not been able to play a pivotal role in developing dairy farming in Nepal. The Laliguras dairy farm and research center is among the few dairy farms that has been established as a commercial farm in massive scale. With the full capacity of 800 cows rearing and area under construction for further addition, this farm has the potential to attract more farms like itself. The in-depth idea on cow farming; technological use, problems, prospects, and marketing channels can easily be studies in this farm. Furthermore, the detailed insight that the researcher dig out during the study helps other entrepreneurs to part-take in these livestock activities.

3.3 Nature and Sources of Data

Quantitative and Qualitative nature of data has been collected through primary and secondary sources. The quantitative data has helped to deal with the numerical values whereas qualitative data has helped the researcher in extracting the quality of a variable. Similarly, the field study is the primary source of data whereas Internet, Library and documentations from ministries are the secondary source of data.

3.4 Universe, Sample and Sampling Procedure

Among the total of more than 3400 registered farms in Nepal (as per officials), the farms insideKhairahanimunicipality of Chitwan is the sampling frame of the study. Since the study denotes the commercial cow farming, there are only 3 commercial cow farms in this sampling frame and Laliguras cow farm being the biggest of them, this farm was chosen with the help of purposive sampling method.

Among the 55 staffs of this farm, 20 were chosen with the help of purposive sampling technique. Similarly, the community (periphery of the farm that gets influenced directly by the farm) outside the farm comprise of 28 households among which 20 households have been selected as sample for the research purposively.For KII and FGD respondentshave been selected through purposive sampling procedure.

3.5 Data Collection Tools and Techniques

Primary and secondary both sources have been used to data collection. For the collection of primary data, Household survey was conducted along with Key Informant Interview, Focused Group Discussion and Observation checklist are the tool for collecting the data in survey.

3.5.1 Household Survey

Household surveyis the method of primary data collection and survey questionnaire was the tools for realistic and accurate data from the household operating the cow farm for identifying the socio-economic impact of both cow farm. Head of households were interviewed in order to get relevant information of their respective households.Total of 20 households were selected for Survey and total of 20 employees were selected for Survey.The questionnaires of survey for two objectives have been attached in Annex I.

3.5.2 Key Informant Interview (KII)

The primary data was collected from Key Informant Interviews techniques using the structured and unstructured KII guideline. The subject of the study were the officials and specialized persons i.e.,Cow farm committee executive (1), social mobilizer (1), Ward members (2) and livestock specialist (1). KII was done in order to get the in-

depth information on socio-economic status, products of the cow farm as well as problem and prospects of the cow farm. The KII guidelines have been attached in Annex II.

3.5.3 Focus Group Discussion (FGD)

FGD wasconducted among the members of cow farm management committee, members of cow farmhouseholds, andlocal leaders etc. making a total of 8 peoples. FGD was done in order to get the in-depth information on status of cow farm, as well as problem and prospects of the both cow farm. The FGD agendas have been extracted from guidelines of KII as in Annex II.

3.5.4 Observation

Checklist have been developed for evaluating the compliance of Cow farm Regulation 2067 BS in both cow farm. The checklist has been attached in Annex III.

3.6 Data Analysis Tools and Techniques

The data thus collected have been stratified as per objectives and qualitative analysis have been done with the help of table, bar-graph and pie-charts.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

This chapter has been organized as per the objective as to analysis of the status of cow farming, analysis of the marketing channel, analysis of role of cow farming in changing socio-economic status of people around as well as employees and lastly the problems and prospects of cow farming.

4.1. Status of Cow Farm

Five different variables were used to analyze the status of cow farm as social, economic, environmental, quality and quantity of cow and lastly technological variables.

4.1.1. Social Status

The farm has been a boon for them asthere is a good social relation between the farm and the locality. Farm provides different technical assistance to the local farmers and organizes training and workshops for the locality. The local products are being consumed by the farm in the form of grass and hay and other raw materials which plays vital role for the increment in the financial status of the local people. Farm is playing supportive role for the construction of roads, organizing agricultural fairs and mainly providing the employment opportunities due to which the relation between the locals and the farm is enhanced in a positive manner. In future farm is planning to provide the calves to the local's flexible agreement of low cost and payment in the installment. Farm is also planning to involve the locals in farm activities and workshop for the betterment of the local farmers.

In terms of employment to the locals, more than 8 peoples around the farm were actively involved with no other quota system for them. The social relation between the farm and the community is sound as there is no obstacle for the farm conduction. The farm does not affect the lives of people around but it helps them by providing manure as fertilizer for their field.

4.1.2. Economic Status

Laligurans Cow Farm and Research Center was established with the Investment of Rs 38 crores with 20000 shareholders as partners of this farm. The total area of this firm

has 20 bigha in which 28 bigha is in lease. Till date firm has no other branches but farm has a future of investing in the farm which is planned to be in the Lalitpur Godavari. Since there arenot any profit for this farm now. Operational cost of the firm is equal to the income and running cost of the firm which is 25 lakhs per month. Newborn calves are the profit for the firm indirectly. In accordance with the farm in-charge after 4 years only the firm will enter the profitable situation till date the operational cost and the monthly income is in balance. More than 55 people are engaged as employee in this firm. Among them 19 employees are female. In the sector of administration In-charge, accountant, receptionist, peon and 3 guards are working in this firm. The salary of the staff is ranging from 15000 and up to one lakh. The facility of bonus is not in practice in this firm but the insurance facility upto 2lakhs for the permanent staff is available.

4.1.3. Environmental Status

Firm have not created any visible affect and pollution which may degrade the environment. The by products are properly managed by the farm personnels. The main by-product of the farm is dung and urine which is used in the gas plan and used as a manure as well. There isnot any proper calculation of the dung produced but it is not wasted and there is not any possibility of it polluting the environment according to the farm in-charge. Farm has proper drainage system which controls the overflow of water and other unwanted water related wastes. The farm is aware of the environmental related problems which the farm may create to the locality. The area of the farm is big where the sheds are away from the locality which have less chances of noise pollution. Farm has its own grassland, and it buys the hay which is imported from the westernNepal. There is no proper policy and planning for the environmental conservation, but farm is aware of its consequences. Farm financially donated one lakh to gravel the road of its locality to minimize the air pollution.

Unproductive Cow and Bull Calves?

However, there is one noticeable environmental issue as the unproductive cows and bull calves are hard to manage. They have been using them as manure producer i.e., they have been keeping them intact within farm area and their dung have been a source of manure.

4.1.4. Quantity and Quality of Cow

There is total 507 numbers of cow present in the farm (though the capacity of the farm is 800) which consist of two breeds Holstein andJersey. Among 507 cows 65% of cows are Holstein and 35% of cows are jersey. 200 cows are the milking cows giving an average of 20 liters of milk per day with 2 times of milking. The cows are fed 4 times a day and cleaning the cows and their sheds takes place on a daily basis. Regular checkup is done where 2 fulltime technicians are available and weekly checkup also takes place with the help of specialist like JTA. Farm is totally aware about the health of the cows. The farm personnels have to wear special gears before entering the shed and have to wash hands after returning. Not only have the farm personnel's, visitors also had to wear the aprons while visiting the farm. Despite these cares, around 15 cows get ill per month. Apart from some cows getting ill once a month, the cows seem healthy with normal physique and active body. They were placed in big and well sanitized partitioned sheds where the newborns, pregnant cows and ill cows were placed separately.

4.1.5. Technological Status

The cow farm is based on the modern concept.From the technological perspective the milking parlor is present where 30 cows can be milked at a time. After milking the cow, the milk is collected and stored in a chilling center where it can be stored for two days. For the breeding process they donot have bull cow thus semen is brought from Pokhara. Breeding process takes place naturally unless any kinds of obstacle take place. In those cases, the experts are there to handle the situation. In the case of newly born calves, they are kept apart from other cows, if needed the special rooms with heater is also available for the newly born calves. Cows are fed 4 times a day and the grass are cultivated by the farm itself as they buy the hay which is brought from the western side of Nepal. They produce their own fodder which consist of hay grass choker. The cows are fed manually. There is no any kinds of scientifically friendly feeder for the cows. Cows have their own separate feeding place.

Cow farming at this establishment has a multifaceted status encompassing social, economic, environmental, and technological dimensions. On the social front, the farm actively engages with the local community by providing technical assistance through

training and workshops, supporting local agriculture by consuming locally produced hay and grass, participating in community development projects like road construction and agricultural fairs, and offering employment opportunities to eight local individuals. This has created a positive atmosphere within the farm and strengthened its bonds with the community. Additionally, the farm contributes to the upliftment of the local population by providing low-cost manure, improving agricultural practices, and enhancing livelihoods.

From an economic perspective, the farm was established with a substantial investment of 38 crore and encompasses a significant land area. However, the economic status presents a challenge, with monthly operating costs equaling the farm's income, resulting in a break-even situation. Profit primarily comes from the birth of newborn calves, indicating a potential avenue for future economic growth. The farm employs 55 individuals, with varying salary ranges, making a significant contribution to the local economy.

Regarding environmental status, the farm demonstrates responsible waste management practices, effectively managing dung and urine. Proper drainage systems and the location of sheds away from local houses help reduce sound and air pollution, maintaining a harmonious relationship with the environment. However, managing unproductive cows and bull calves remains a challenge and an area for improvement.

In terms of the quality and quantity of cows, the farm primarily focuses on Holstein and Jersey breeds, yielding around 20 liters of milk per day through four feeding times. While there is a focus on care and sanitation, approximately 15 cows fall ill each month, indicating room for improvement in healthcare management. The farm houses a total of 507 cows, with 65% being Holstein and 35% Jersey. Regular shed cleaning and specialized gear for employees contribute to overall hygiene. Additionally, the farm provides a well-facilitated room for newborn calves, emphasizing its commitment to animal welfare.

Technologically, the cow farm is modern, featuring a milking parlor capable of handling 30 cows at once, a chilling center to preserve milk quality, and dedicated facilities for newborn calves. However, the absence of machinery for feeding cows suggests an opportunity for enhanced efficiency through automation in the future. In

summary, the farm showcases a combination of traditional practices and modern technology, with both strengths and areas for further development in each dimension of its status.

4.2 Analysis of the Marketing Channel

On the farm, there is a milking parlor equipped to handle the milking process for a total of 30 cows at once. These cows are divided into groups of 30 and milked accordingly. The harvested milk is then transported and stored at a chilling center on the premises, which has the capacity to preserve the milk for up to two days. Notably, the farm does not engage in any milk product manufacturing, nor does it distribute milk to the local community. Instead, the farm sells its milk directly to Adhunik Dairy, located in Balaju.

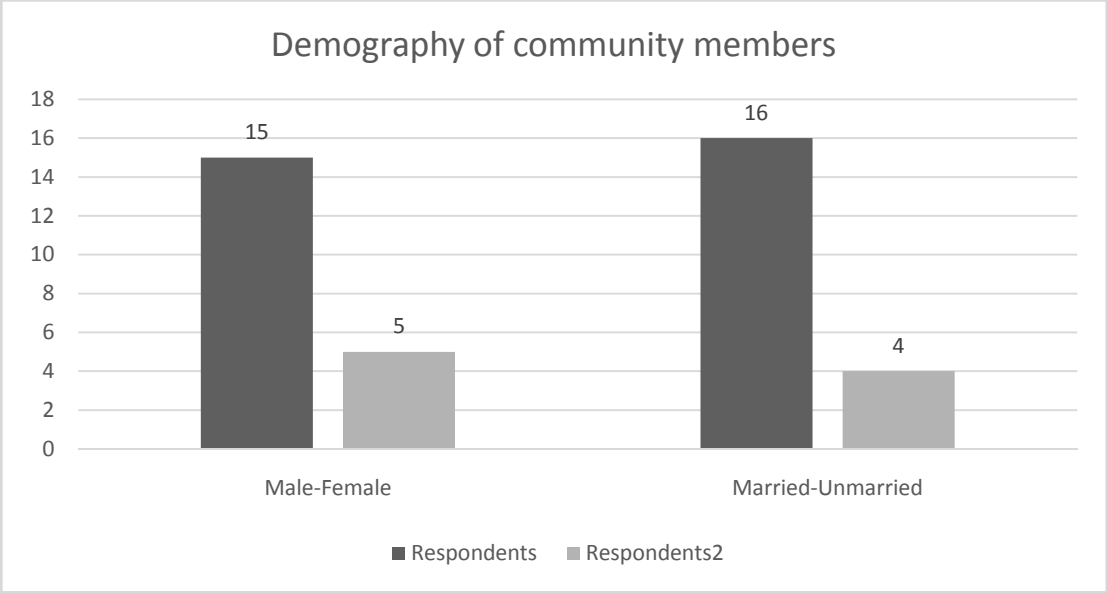
When considering the demand dynamics at the local level, it becomes evident that the dairy operation faces limited interest or substantial need for milk and milk-based products from the local populace. This is primarily due to the fact that the residents in the area are predominantly engaged in raising their own milking cows, buffaloes, or a combination of both, thus reducing their reliance on external sources for dairy products.

In terms of sustaining the dietary requirements of the cows on this particular farm, an array of strategies is employed. First and foremost, the farm cultivates green fodder within its premises, a practice aimed at ensuring a steady supply of essential food for the livestock. Additionally, they have secured leased land to further augment their fodder production capabilities. Furthermore, the farm supplements the nutritional needs of their cows by procuring feed from various sources. One notable source is the Bajrabarahi feeders located in Chitwan, which plays a pivotal role in providing essential nutrition. It's worth noting that apart from Bajrabarahi, the farm taps into three other temporary sources to obtain nutritional food for their cows. In a bid to diversify their feed sources, the farm also engages in importing dried hay from Saptari and Siraha districts. These imports are facilitated through established connections with specific dealers who proactively reach out to the farm to facilitate these transactions.

4.3. Analysis of Role of Cow Farming in Changing Socio-economic Status

4.3.1. Change in Socio-economic Status of Community

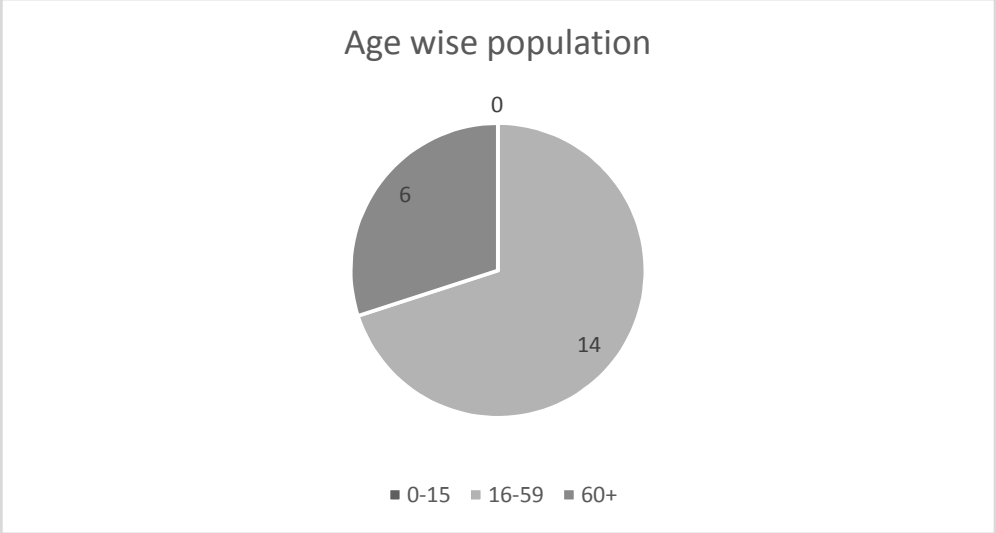
FIGURE 1: DEMOGRAPHIC FIGURES



(Source: Field Study, 2019)

The demographic figure shows the dominance of male with 75% over 25%. Similarly,80% of the respondents are married leaving 20% unmarried.

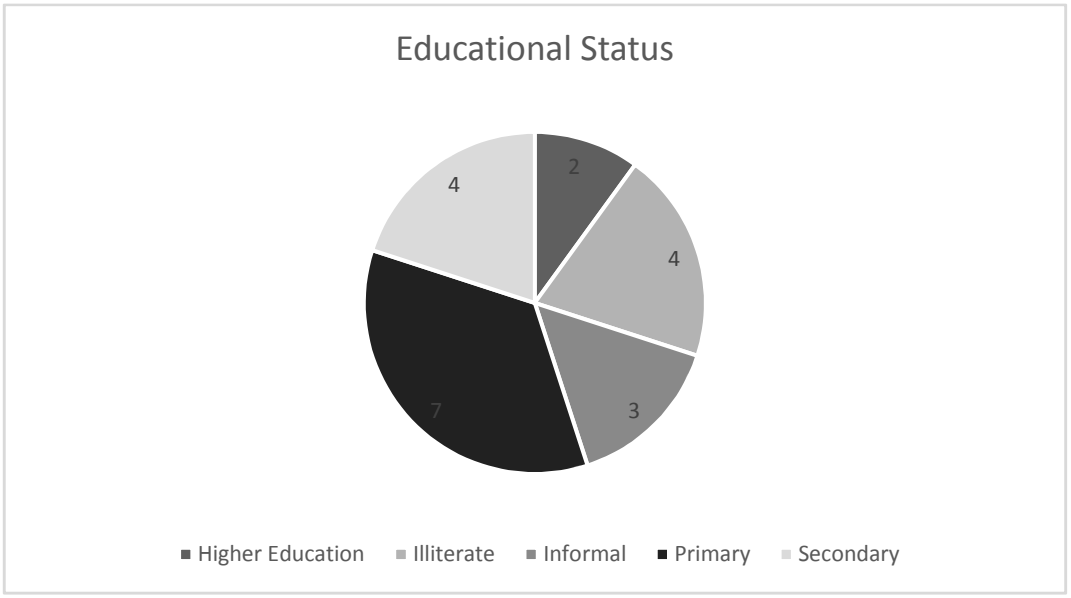
FIGURE 2: AGE WISE COMPOSITION



(Source: Field Study, 2019)

It is seen that the total of 70% population can be considered as active population group as per age as they fall inside16-59 age group.

FIGURE 3: EDUCATIONAL ATTAINMENT OF COMMUNITY MEMBERS



(Source: Field Study, 2019)

The respondents are well educated with achievements up-to higher education level but there are 20% illiterate population in the study frame.

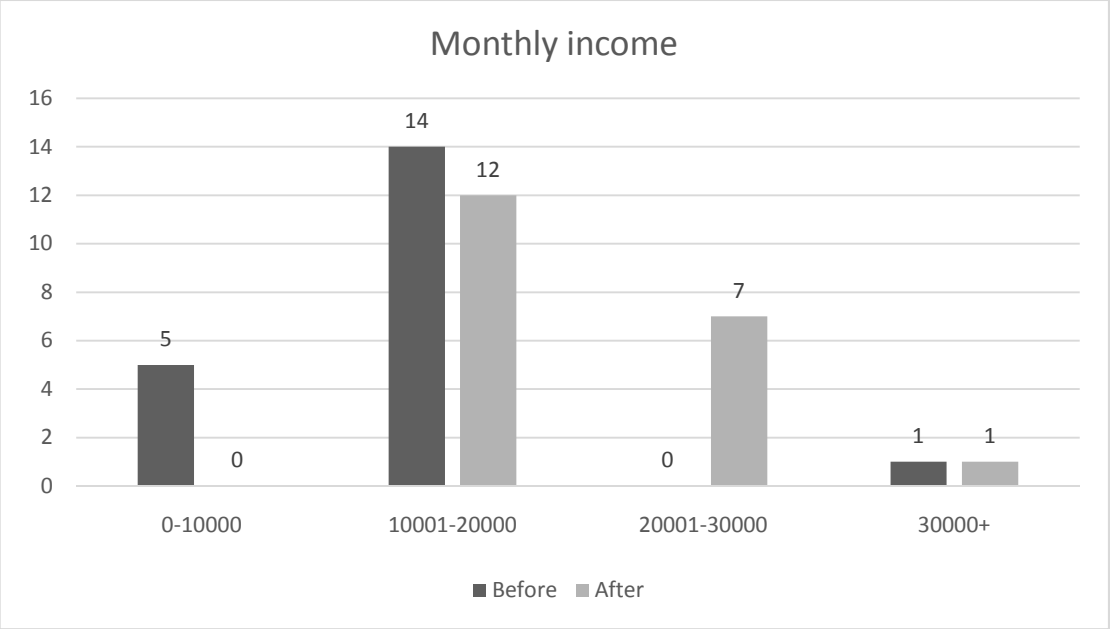
TABLE 4.1: OCCUPATIONAL STATUS OF COMMUNITY MEMBERS

Occupation Status				
Occupations	**Before**	**Percentage**	**After**	**Percentage**
Agriculture	11	55%	6	30%
Banking	0	0%	2	10%
Contractor	1	5%	1	5%
Driver	0	0%	3	15%
JTA	0	0%	1	5%
Labor	6	30%	4	20%
Shopkeeper	0	0%	2	10%
Teacher	2	10%	1	5%

(Source: Field Study, 2019)

The socio-economic condition of the people around the farm area has been altered as a result of establishment of farm. Most of the people i.e., 55% of the total households were dependent on agriculture and 30% were labor before the establishment of farm but the scenario has now diversified with 30% involvement on agriculture and rest well distributed on security, driver, labor, shopkeeper, etc.

FIGURE 4: INCOME LEVEL OF COMMUNITY MEMBERS



(Source: Field Study, 2019)

The change in employment status of the people has also altered the monthly earning level as 70% used to earn 10001-20000 before establishment of farm and only one earned more than 30000 per month. But with the establishment of farm, 7 peoples from 10001-20000 range have upgraded themselves in earning 20001-30000 income per month. With the increase in income, the expense as well as monthly saving has increased side by side.

TABLE 4.2: MONTHLY EXPENSE OF COMMUNITY MEMBERS

Monthly Expenses				
Range Amount	Before	Percentage	After	Percentage
0 – 10000	11	55%	4	20%
10001 – 20000	8	40%	15	75%
20001 – 30000	0	0%	0	0%
30000+	1	5%	1	5%

(Source: Field Study, 2019)

The above data shows that the range of monthly expense of community members have risen since the establishment of farm as the range of expense have risen more from 10000 range to 20000 range. Before the establishment of farm, 55% monthly expense of below 10000 and 40% had expense below 20000 but with the establishment of farm, only 20% had expense of below 10000 and 75% had expense below 20000.

TABLE 4.3: MONTHLY SAVING OF COMMUNITY MEMBERS

Monthly Saving				
Range Amount	Before	Percentage	After	Percentage
0 – 10000	19	95%	17	85%
10001 – 20000	0	0%	3	15%
20001 – 30000	1	5%	0	0%
30000+	0	0%	0	0%

(Source: Field Study, 2019)

Similarly, the saving of the community members has also risen as the saving was more dominant in below 10000 range before the establishment of farm which has risen considerably to below 20000 range. Before the establishment of farm, 95% had monthly saving of below 10000 but after the establishment 85% had saving within 10000. Here there were no individual with sabing below 20000 before establishment of farm, but with its establishment, 15% have started saving below 20000 per month.

TABLE 4.4: MONTHLY LOAN OF COMMUNITY

Monthly Loan				
Range Amount	Before	Percentage	After	Percentage
0 – 10000	0	0%	0	0%
10001 – 20000	0	0%	0	0%
20001 – 30000	0	0%	0	0%
30000+	0	0%	0	0%

(Source: Field Study, 2019)

In terms of loan taken, there was no-one person taking loan before as well as after the establishment of farm. These indicators indicate that the economic side of the community has improved to some extent after the establishment of the farm as it has been providing direct (employment) as well as indirect (market) aid to the community.

TABLE 4.5: FAMILY RELATIONS OF COMMUNITY

Family Relations				
Indicator	Before	Percentage	After	Percentage
Good	5	25%	16	80%
Normal	15	75%	4	20%
Bad	0	0%	0	0%

(Source: Field Study, 2019)

In terms of social changes, there is distinctive improvement seen in the study area. In family relationships there is seen drastic improvement as the relationship between them shifted to good from normal in more than 75% households.

TABLE 4.6: ANALYSIS OF INTERPRETATION OF PERCEPTION

S.N.	Topics	Before		After	
		Like them	Dislike them	Like them	Dislike them
1	People's Perception towards them	16 (80%)	4 (20%)	20 (100%)	0 (0%)
2	Their Perception towards other peoples	18 (90%)	2 (10%)	20 (100%)	0 (0%)
3	Their Perception towards Cowfarm	16 (80%)	4 (20%)	19 (95%)	1 (5%)
4	Cow farm Perception towards locals	20 (100%)	0 (0%)	20 (100%)	0 (0%)

(Source: Field Study, 2019)

In terms of perception, people's perception towards them had some negativity before the establishment of farm which then turned into 100% positive so was their perception towards others.

TABLE 4.7: ANALYSIS OF INTERPRETATION OF SELF-RELIANCE

Self-reliance				
Indicator	Before	Percentage	After	Percentage
Maximum	4	20%	6	30%
Normal	10	50%	12	60%
Minimum	6	30%	2	10%

(Source: Field Study, 2019)

The community people with the establishment of the farm have grown more self-reliance than they were before. Before the establishment 30% weren't self-reliant but this number decreased to 10% after the establishment thus increasing the self-reliance of people of the community.

TABLE 4.8:INSURANCE STATUS OF COMMUNITY

Insurance				
Indicator	Before	Percentage	After	Percentage
Yes	4	20%	9	45%
No	16	80%	11	55%

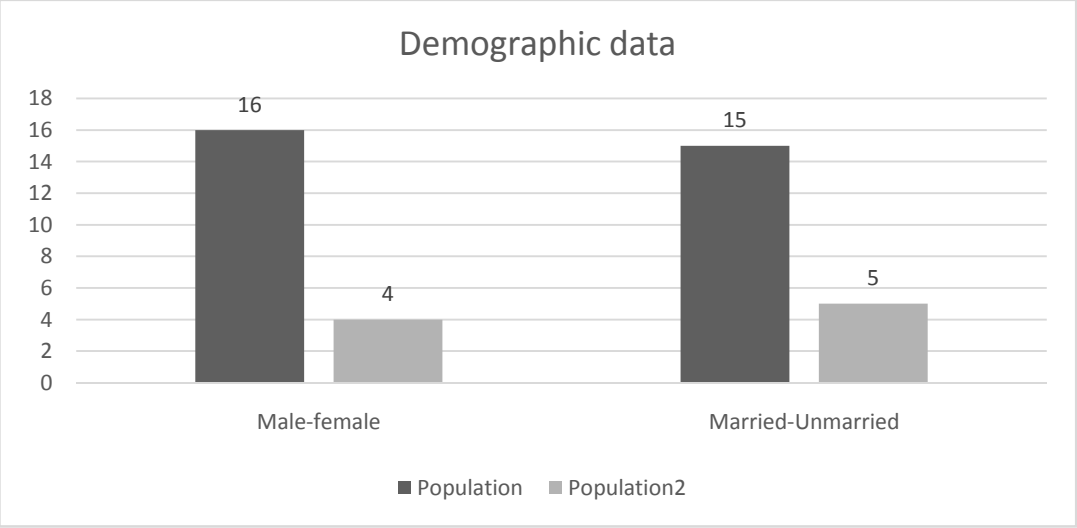
(Source: Field Study, 2019)

More households have now opted for insurance i.e., 20% before and 45% now. Similarly, the percentage of households who doesn't have insurance has decreased by 25%.

Looking at the above data, the economic as well as social status of the households of the community have improved substantially with increased income, expenditure, saving, self- reliance and improved relationships with their own family as well as community.

4.3.2 Change in Socio-economic status of employee

FIGURE 5: DEMOGRAPHY OF EMPLOYEE



(Source: Field Study, 2019)

The demographic statistics shows more dominance of male employees with 80% among whom 75% are married.

TABLE 4.9: OCCUPATION OF EMPLOYEE

Occupation		
	Before	After
Labor	11	13
Operator	2	1
Teacher	1	
Receptionist	1	
Agriculture	5	
Accountant		2
Storekeeper		1
In-charge		1
Security		1
Driver		1

(Source: Field Study, 2019)

With the enrollment in farm, the occupation of these peoples has found a new realm. The employees had limited employment sectors as labor, operator, teacher, receptionist and agriculture before the establishment of this farm but with its establishment more sub-sectors as accountant, storekeeper, In-charge, Security and Driver have become available.

TABLE 4.10: INCOME OF EMPLOYEES

Monthly income				
Range	Before	Percentage	After	Percentage
below 10000	0	0%	0	0%
10001-20000	18	90%	14	70%
20001-30000	2	10%	5	25%
above 30000	0	0%	1	5%

(Source: Field Study, 2019)

The economic status of people seems to have grown with their enrollment in the farm. Before being in farm, their economic strata mostly resided in 10001-20000 per month

which then increased to 20001-30000 strata. The change in economy is minimal as only 25% employees' strata gained upper level.

TABLE 4.11: MONTHLY EXPENDITURE OF EMPLOYEES

Monthly expenditure				
Range	Before	Percentage	After	Percentage
0-10000	2	10%	0	0%
10001-20000	18	90%	17	85%
20001-30000	0	0%	2	10%
30001+	0	0%	1	5%

(Source: Field Study, 2019)

The same case is with monthly expenditure and monthly saving. Only a few peoples have uplifted their present level of expenditure and savings per month.

TABLE 4.12: MONTHLY SAVING OF EMPLOYEES

Monthly Saving				
Range Amount	Before	Percentage	After	Percentage
0 – 10000	19	95%	17	85%
10001 – 20000	0	0%	2	10%
20001 – 30000	0	0%	1	5%
30000+	0	0%	0	0%

(Source: Field Study, 2019)

The addition of loan in one employee shows the increased financial capacity as their confidence of repayment of loan has also increased.

TABLE 4.13: MONTHLY LOAN OF EMPLOYEES

Monthly Loan				
Range Amount	Before	Percentage	After	Percentage
0 – 10000	1	5%	0	0%
10001 – 20000	0	0%	0	0%
20001 – 30000	0	0%	0	0%
30000+	0	0%	0	0%

(Source: Field Study, 2019)

The total economic indicators shows that there is slight improvement in the economic conditions of the employees.

TABLE 4.14: FAMILY RELATIONS OF EMPLOYEES

	Family Relations			
Indicator	Before	Percentage	After	Percentage
Good	10	50%	18	90%
Normal	10	50%	2	10%
Bad	0	0%	0	0%

(Source: Field Study, 2019)

With the establishment of farm, the family relations have changed from normal to good as 90% have good relations prior to 50% having normal and 50% having good relations.

TABLE 4.15: ANALYSIS OF PERCEPTION OF SELF-RELIANCE OF EMPLOYEES

Self-reliance of employee				
Indicator	Before	Percentage	After	Percentage
Maximum	8	40%	10	50%
Normal	10	50%	8	40%
Minimum	2	10%	2	10%

(Source: Field Study, 2019)

The employees have developed a sense of self-reliance with slight margin as 50% had normal self-reliance before whereas 50% have maximum reliance in the present time.

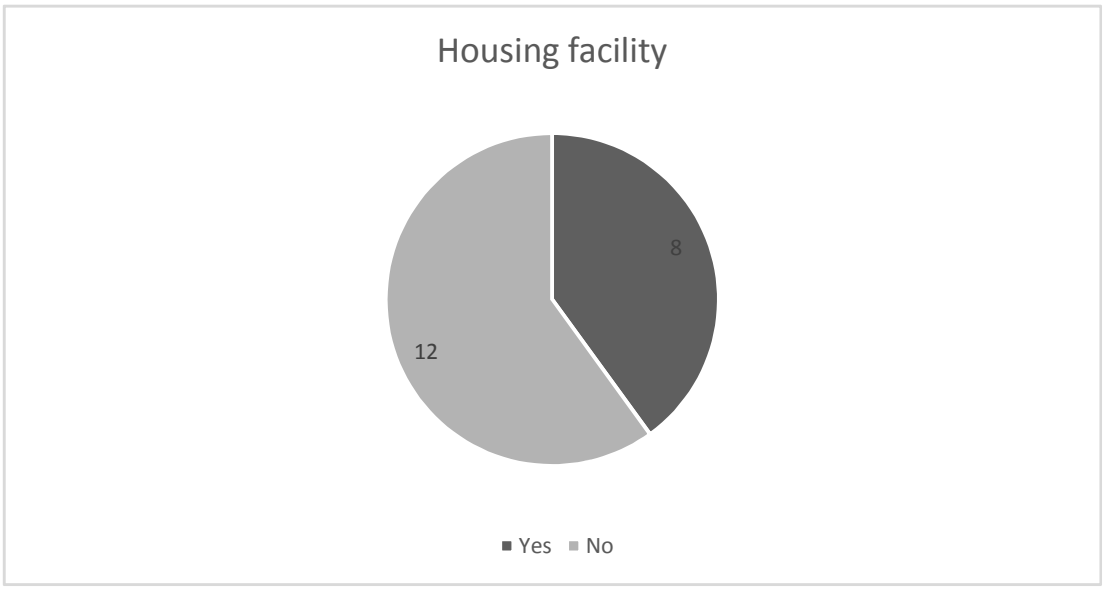
TABLE 4.16: TRAINING FACILITY FOR EMPLOYEES

	Training			
	Before	Percentage	After	Percentage
Yes	5	25%	8	40%
No	15	75%	12	60%

(Source: Field Study, 2019)

The social security of the engaged people has also improved as most of them are getting more trainings than before i.e., 25% have had received trainings then and 40% have received trainings in the present time.

FIGURE 6: HOUSING FACILITY FOR EMPLOYEES



(Source: Field Study, 2019)

The same is with housing facility, the farm has provided housing facility to 40% of the employees (the rest being locals). The farm has also added new frontier of social security for them as 80% have insurance in the present time as compared to 30% in the past.

Table 4.17: Insurance status of employees

Insurance				
	Before	Percentage	After	Percentage
Yes	6	30%	16	80%
No	14	70%	4	20%

(Source: Field Study, 2019)

The involvement in farm has also improved their social status as people's perception towards them have been better these days with 100% improvement rate so as is their perception towards them.

TABLE 4.18: INTERPRETATION OF PERCEPTION OF EMPLOYEES

S.N.	Topics	Before		After	
		Like them	Dislike them	Like them	Dislike them
1	People's Perception towards them	14 (70%)	6 (30%)	20 (100%)	0 (0%)
2	Their Perception Towards other peoples	18 (90%)	2 (10%)	20 (100%)	0 (0%)
3	Their Perception Towards Cow farm	16 (80%)	4 (20%)	18 (90%)	2 (10%)
4	Cow farm Perception towards locals	18 (90%)	2 (10%)	19 (95%)	1 (5%)

(Source: Field Study, 2019)

With the establishment of farm, the employees have experienced some positive changes in their lifestyle. Skill gradually developed; family members are getting education. According to the employee the salary scale is not good as expected but it is helping for their day-to-day activities if an individual can work for a long period of time, then the life working in this farm is very good. The locals are getting proper employment opportunities due to the farm. More than 8 locals work here, indirectly more than 100s of local are being benefited from the farm. The roadway of the locality was not good before the establishment of the farm. The farm helped to gravel the road. In near future the farm has a plan to distribute the electricity to the locals in the minimal way possible. The locals are being financially sound, more capable from the agricultural perspective and more aware about the land and its benefits. Though some of the locals have more expectation from the farm which is not being met. The locals don’t have any personal issues with the farm but they expect much more from the cow farm for their locality.

Thus, Cow farming has played a pivotal role in catalyzing significant changes in the socio-economic status of both the local community and its employees. In the community, the introduction of the farm has led to a noteworthy transformation, with a decrease in dependency on traditional agriculture and a subsequent rise in monthly income levels. This shift is exemplified by the absence of households earning less

than 10,000, a notable improvement compared to the situation before the farm's establishment. Furthermore, seven households have upgraded their income levels from the 10,001-20,000 range to the 20,001-30,000 range. This economic progress is reflected in increased savings and expenditures, signaling enhanced financial stability. Alongside economic improvements, the farm has had a positive impact on the social fabric of the community, fostering better family relations and a shift in perception, with a likelihood index reaching 100%. With increased income and improved socio-economic conditions, community members have gained greater self-reliance and the assurance of life insurance, further elevating their status.

Similarly, the socio-economic status of the employees has undergone significant positive changes. A new employment frontier opened up with the establishment of the farm, leading to a drastic shift in occupational status. The majority of employees now earn between 10,001-20,000 per month, with some even surpassing the 30,000 mark. This increase in income has contributed to elevated levels of monthly savings and expenditures. Family relations among employees have notably improved, with 90% experiencing good family dynamics. Additionally, with higher income, provisions such as training, housing, and insurance have made the majority of employees self-reliant. The involvement in cow farming has not only improved perceptions of employees but has also elevated the community's regard for them. Despite these advancements, opportunities for further improvement remain, particularly in terms of employee compensation. Moreover, the farm's contribution to infrastructure development, such as road and electricity infrastructure, has not only benefitted the community but has also contributed to a harmonious relationship between the two entities, reinforcing the positive socio-economic changes brought about by cow farming.

4.4. Problems and Prospects of Cow Farm and Locality

With the startup of a business, there are always inlying problems and prospects.

4.4.1 Problems of Cow Farm

As problems there is a labor scarcity as no one wants to work in cheap wage and higher wage can’t be afforded by the farm. The basic salary provided by the farm is not enough for most of the employees specially the low wage ones. Similarly, there is no quota system for the locals. This system creates a tussle in-between the locals and

the farm in some cases. The locals try to enforce their terms inside the farm. This directly the management of the farm thus this has been one of the critical problems of this far.

Another major problem faced by the company is the flues and viral infection that infect cows as well as the workers. The natural phenomena hamper the quality as well as quantity of milk. Moreover, the political instability inside the country causing road blockage proves to be another major problem as the milk can only sustain in the chilling center for 2 days after which the total milk has to be thrown away.

Lastly, there is one temporary problem i.e., the availability of grass and fodders in winter season. Till date the farm hasn't been able to produce enough green fodders to be preserve for the winter as Silage.

4.4.2 Prospects of Cow Farm

As every venture has problem, there are multiple prospects as well. This farm's main virtue lies within its employment generation potential. The farm has been providing employment to more than 50 peoples across nation along with some of the local peoples. The operation of the farm has led to development of infrastructure specially the road access has changed as the road was totally offroad type before the establishment, but this farm has helped in changing the road type to total graveled donating 1 lakh rupees.

4.4.3 Problems of Locality

The major problem that the locals are facing due to the farm is water logging in their houses and fields during rainy season. The level of farm has been leveled so that no water gets trapped inside the farm. The filling of enormous area has increased the volume of water to get reserved in locals' fields. Another problem is that the farm hasn't been able to prove itself as the employment generator for the local people as the farm hasn't been able to enroll expected number of locals. The low salary provided by the farm is insufficient for the people thus choosing employment other than the farms.

With the establishment of mega project such as this farm and research center, the ward as well as area has been benefitting alongside. This farm has been providing trainings as well as employment opportunities to the people. The farm's establishment

has made the people of the surrounding area more conscious of their health, sanitation, as well as other social status as they have been providing direct as well as indirect trainings and workshops. Moreover, the farm has been providing manures and fertilizers in lower rate for the people around the farm. In terms of municipality, the farm has been contributing to its CSR as they have had recently given around 5 lakhs for organization of Khairahani Mahotsav.

Thus, Cow farming faces a set of challenges that need to be addressed for sustainable growth. Labor scarcity due to low wages is a significant issue, making it difficult to attract and retain skilled workers. The farm also encounters occasional resistance from local residents who may impose their ideas, leading to uneasy situations. Furthermore, the availability of grass and fodder during the winter season presents a challenge, potentially affecting the well-being of the cattle. Political instability and strikes, known as "Banda," disrupt the milk supply chain, as milk can only be stored for two days in chilling centers. The absence of a quota system occasionally creates operational problems, and unexpected natural events, such as viral flu outbreaks among the cattle, can render them unproductive for extended periods. Additionally, heavy rainfall can lead to surplus water escaping from the farm, affecting the local community. Despite efforts to control mosquitoes through chemical spraying, the farm has experienced an increase in mosquito populations.

4.4.4 Prospects of Locality

However, there are promising prospects for cow farming. It serves as a significant employment generator, benefiting the local workforce. The farm's contribution to infrastructure development, including road graveling, has enhanced the overall infrastructure of the area. Its establishment has positively impacted the entire locality, fostering community development. Moreover, the farm's commitment to corporate social responsibility, exemplified by its recent contribution to Khairahani Mahotsav, reflects its dedication to the well-being of the local community. By providing training and raising awareness, the farm empowers locals and outsiders alike. Its involvement has also facilitated road development, further benefiting the region. Additionally, the farm offers manure and fertilizers at lower rates, supporting local agricultural practices and contributing to the region's economic growth. Despite the challenges, these prospects underscore the potential for continued growth and development in the field of cow farming.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The analysis of the status of cow farming at Laligurans Cow Farm encompasses several key dimensions, including social, economic, environmental, and technological aspects. Various data collection methods were employed, with interviews being the primary tool for gathering insights.

The cow farming operation under evaluation significantly impacts both the local community's social and economic aspects, displaying strengths and challenges in various areas. Socially, the farm actively supports the community through technical assistance, local resource utilization, and participation in development initiatives, while providing employment opportunities to eight locals and offering low-cost manure, enhancing the livelihoods of the residents. However, economically, despite a substantial initial investment of 38 crore, the farm operates at a break-even point, with monthly costs equaling income. Profits come mainly from newborn calves, highlighting potential for future economic growth, and the employment of 55 individuals across salary ranges contributes significantly to the local economy. Environmentally, effective waste management minimizes environmental impact, though addressing the management of unproductive cattle remains a challenge. The cow herd primarily consists of Holstein and Jersey breeds producing about 20 liters of milk daily with room for healthcare improvement, while the farm's commitment to animal welfare is evident. Embracing modern technology, the farm boasts a milking parlor, chilling center, and calf facilities, although automation for feeding could enhance efficiency. Overall, the farm combines traditional practices with modern technology, offering both strengths and avenues for further development.

The marketing channels for milk and milk products in this particular operation are designed for efficiency and freshness. The presence of a milking parlor allows for a faster and more streamlined milking process, ensuring that milk is collected promptly after extraction. Following milking, the milk is transferred to a chilling center where it is rapidly cooled to preserve its quality. To maintain the cold chain, the chilled milk is then transported to Kathmandu via specially equipped trucks with cooling mechanisms. Ultimately, the milk is sold directly to Adhunik Dairy, located in Balaju,

facilitating a direct and efficient supply chain that minimizes delays and ensures the freshness and quality of the milk. This well-structured marketing approach not only optimizes the milk's shelf life but also ensures its timely delivery to consumers in the market.

The introduction of the cow farming operation has played a pivotal role in transforming the socio-economic status of both the local community and the employees. In the community, there has been a notable shift with increased income levels, reduced dependence on traditional agriculture, and improved family relations. Monthly savings and expenditures have also seen increments, contributing to enhanced financial security and lifestyle improvements. Additionally, the establishment of the farm has boosted the overall perception and likelihood index of the community, instilling a sense of self-reliance and life insurance. Similarly, employees have experienced significant changes, including diversified employment opportunities, increased income, improved family relations, and greater self-sufficiency. Despite some expectations of higher salaries, the farm has contributed to infrastructure development in the area, fostering a positive relationship between the community and the operation. Overall, the cow farming initiative has ushered in positive socio-economic transformations in both the local community and among its employees.

Cow farming faces several challenges, including labor scarcity due to low wages, occasional interference from locals, limited availability of grass and fodder during the winter, political instability leading to disruptions in milk storage, and the absence of a quota system causing occasional issues. Additionally, unexpected natural events like viral outbreaks and drainage problems during heavy rains pose difficulties, and the farm has seen an increase in mosquito populations despite pest control efforts. On the bright side, cow farming holds numerous prospects, such as being a significant source of employment and contributing to the development of local infrastructure, including graveling roads. It plays a role in the overall development of the area and contributes to corporate social responsibility through financial support for local festivals. The farm also provides training, raising awareness, and offers cost-effective manure and fertilizers to the local community, further benefiting the region.

5.2 Conclusion

In conclusion, the cow farming operation under evaluation stands as a multifaceted venture that exerts a profound impact on the local community, employees, and the broader socio-economic landscape. Socially, the farm demonstrates a commendable commitment to community development, offering technical assistance, workshops, and employment opportunities, thereby contributing to improved socio-economic conditions. The provision of low-cost manure and the farm's support for local initiatives like road construction and agriculture fairs further enhance its social standing.

Economically, the farm presents a mixed picture. While it has provided employment to a substantial workforce and boosted local income levels, it operates on a break-even basis, with profitability dependent primarily on the birth of new calves. The economic prospects are promising, but the farm may need to explore strategies for greater financial sustainability.From an environmental perspective, the operation manages waste effectively and minimizes pollution, although addressing issues related to unproductive cattle and occasional drainage problems remains important for maintaining its environmental responsibility.

The marketing channels for milk and milk products illustrate a well-structured system designed for efficiency and freshness, ensuring that high-quality milk reaches consumers in a timely manner. This aligns with the farm's commitment to quality and demonstrates its contribution to the dairy supply chain.The transformative impact on the socio-economic status of the local community and employees is undeniable. Increased income levels, reduced dependence on traditional agriculture, improved family relations, and heightened self-reliance are positive outcomes. However, challenges such as labor scarcity, political instability, and disease outbreaks remind us of the complex nature of cow farming.

In summary, the cow farming operation exemplifies both the potential and challenges inherent in agribusiness. It serves as a catalyst for positive change in the community and among employees while navigating economic, environmental, and operational complexities. Future efforts to enhance sustainability and profitability will be key to the continued success of this dynamic venture.

5.3 Recommendations

Some recommendations for the cow farm:

Diversify Income Streams: Given the farm's current financial situation, it's important to explore additional income streams. This could include producing value-added dairy products like cheese or yogurt for local markets. These products can often fetch higher prices than raw milk.

Labor Management: Address the issue of labor scarcity by exploring incentives or benefits for the existing workforce. Consider providing training programs to enhance their skills, which can make them more productive and satisfied employees.

Grass and Fodder Management: Since the availability of grass and fodder is a seasonal issue, the farm should invest in efficient storage methods and consider growing its own fodder crops throughout the year. This will help ensure a consistent food supply for the cows.

Marketing Strategy: Evaluate the current marketing strategy for milk and milk products. Consider diversifying marketing channels and exploring opportunities for direct sales to local consumers. This can potentially increase profitability and reduce dependency on intermediaries.

Product Diversification: Explore opportunities to diversify products beyond milk. For example, consider producing organic fertilizers from cow dung and urine, which can be marketed to local farmers. This not only utilizes waste products but also generates additional income.

By implementing these recommendations, the cow farm can work towards improving its financial status, environmental impact, and overall contribution to the local community, ultimately ensuring its long-term sustainability and success in the dairy industry.

REFERENCES

Agricultural Project Services Centre. (1995). *Nepal Agriculture Perspective Plan.* Kathmandu: Agricultural Projects Services Center and John Mellor Associates, Inc.

Brown, W. N. (1964). *The Sanctity of the Cow in Hinduism.* The Economic Weekly.

CASA. (2020). *Dairy Sector Strategy- Nepal.* Nepal: CASA.

CDSPL & MDTPL. (2020). *Five-year dairy development plan, FY 2077/78-2081/82.* Kathmandu.

Dangi, S. (2022). Overview of Livestock Insurance in Nepal. *Academia*, 1-10.

Dolberg, F., & Finlayson, P. (n.d.). *Treated straw for beef production in China*. Retrieved from FAO.org: https://www.fao.org/3/v4440t/v4440T07.htm

Gao, Q. (2006). *Development of Dairy Industry in China.* Beijing: AgEcon Search.

Kafle, L. (2022, 11 20). *News*. Retrieved from Rising Nepal Daily: https://risingnepaldaily.com/news/18782

National Dairy Development Board. (2021). *Study on Cost of Milk Production.* Lalitpur: National Dairy Development Board.

National Livestock Breeding Office. (2077). *Annual Technical Report.* Pokhara: National Livestock Breeding Office.

NDDB. (2016). *Annual Report 2015-16.* Lalitpur: National Dairy Development Board.

NDDB. (2019). *Annual Report 2018-19.* Lalitpur: National Dairy Development Board.

Nepal Law Commission. (2004). *National Agricultural Policy.* Kathmandu: Nepal Law Commission.

O'Connell, M., McAdam, J. H., & Kelly, F. (2016). *Cattle in ancient and Modern Ireland: farming practices, environment and economy.* Newcastle upon Tyne: Cambridge Scholars.

Pant, K. R. (2017, 09 14). *Dairy Global.* Retrieved from https://www.dairyglobal.net/industry-and-markets/market-trends/cattle-farming-in-nepal-why-farmers-cry/#:~:text=According%20to%20statistics%20from%20the,424%20buffalo%20farms%20were%20registered

Pant, S., Acharya, M., Sah, A., Pandey, G., Acharya, B., Ghimire, S. P., & Ghimire, S. (2020). Present Status, Problems and Strategies for the development of cattle farming in Nepal. *ResearchGate*, 324-327.

Pradhanang, U. B., Pradhanang, S. M., Sthapit, A., Krakauer, N. Y., Jha, A., & Lakhanar, T. (2015). National Livestock Policy of Nepal: Needs and Opportunities. *Agriculture 2015*, 103-131.

Punjabi, M. (n.d.). *India: Increasing demand challenges the dairy sector*. Retrieved from FAO.org: https://www.fao.org/3/i0588e/I0588E05.htm

Shrestha, S. (2016). *Productivity analysis of cow farming in Putalibazar municipaloty of Syangja district.* Kathmandu: Centeral Department of Economics.

Silwal, S. B. (2009). *Impact of Dairy Farming on Socio-Economic Condition.* Kathmandu: Central Department of Geology.

Singh, P. (2020, November 22). *Myths and Facts about Dairy Farming Practice and Management*. Retrieved from epashupalan: https://epashupalan.com/8104/animal-husbandry/myths-and-facts-about-dairy-farming-practices-and-management/

Subedhi, R. R. (2023, April 7). *Glimpses on Nepal's History*. Retrieved from The Rising Nepal: https://risingnepaldaily.com/news/25054

ThoughtCo. (2017). *Dairy Farming - The Ancient History of Producing Milk.* ThoughtCo.

Wilson, H. (1866). *Rig Veda (translation and commentary).*

Wilson, H. H. (1866). *Vishnu Purana:*. London: Trubner & Co.

Annex I

Questionnaires of Socio-economic Status

Q.N. ……

Household head Name: …… Gender: …….

Address: ……. Contact number: …….

Religion: …… Ethnic group: …….

A. Change in social structure:

1. **Family status:**

NO.	Name	Age	Gender	Marital Status	Occupation	
					Before	After
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

Symbol:

Age: A= below 15yrs, B= (15-59) yrs., C= above 59

Sex: M= Male, F= Female, O= other

Marital status: A= Married, B= Unmarried, C=Divorced, D= Widowed

Occupation: Before= before the establishment of cow farm, After= After the establishment of cow farm

2. **Education Status:**

Symbol:

Level of Education:

a. Formal: Primary= A, Lower secondary= B, Secondary= C,
Higher Secondary= D, Bachelor += E

b. Informal= F

c. Illiterate= G

2. **Training:**

Before	After

3. Employment status:

S.N.	Particular	Before		After	
		No. of people involved	Type	No. of people involved	Type
1.	Agriculture				
2.	Service				
3.	Business				
4.	Labor				
5.	others				

Symbol:

Employment types: Full Time=F and Partial=P

4. **Perception**

S.N.	Topic	Before		After	
		Like them	Dislike them	Like them	Dislike them
1.	People's perception towards them				
2.	Their perception towards other peoples				
3.	Their perception towards cow farm				
4.	Villagers' perception towards cow farm				

4. Self-reliance

a. How much help do you seek from neighbors?

Help	Before	After
Maximum		
Normal		

Minimum		

Help:

- Maximum= Requires help from neighbor more often (most of the activities)
- Normal= Requires neighbors help sometimes in needs only
- Minimum= Requires neighbors help in dire situation only

b. Expecting aid from any other people or organization?

Before	After

5. Infrastructures:

S.N.	Topics		Before	After
1.	Means of Roadway Transportation			
2.	Types of roads	Graveled		
		Black-topped		
3.	Houses	Concrete house		
		Stone made House		
		Bamboo and sheet house		

B. Change in Income structure:

1. Average monthly income from Cow Farm?
   a) Below 5000
   b) 5000-10000
   c) 10000-15000
   d) More than 15000

2. Change in Monthly income after and before Cow Farm?

Position of income	Before	After
Below 5000		
5000-10000		
10000-15000		
15000 above		

3. What are the major area of expenditure and source of expenses?

S.N.	Before			After		
	Area of expenses	Amount	Source	Areas of expenses	Amount	Source
1.						
2.						
3.						
4.						
5.						
6.						
7.						

4. How much money do u save monthly:

Position of Saving	Before	After
Below 5000		
5000-10000		
10000-15000		
Above 15000		

5. Indebtedness:

S.N.	Topic		Before	After
1.	Source of Loan			
2.	Reason for Loan			
3.	Amount of Loan	Below 10000		
		10000-20000		
		20000-30000		
		Above 30000		
4.	Source for payback the Debt			

Symbol:

Source of loan:

A=Formal Source (e.g., Banks, cooperatives, Finance, Microfinance)

B=Informal Source (e.g., Traders, Relatives, Moneylenders, Shopkeepers, Mother groups)

Questionnaires for status of cow farm

Status of cow farm

Social Status

Community relations:

a. How many local peoples (people of same ward) are employed in your firm?

   i. 1

   ii. 4

   iii.8

   iv. More than 8

   v. None

2. Is there any quota system for the locals for their employment (if any)?

   i. Yes

   ii. No

a. If Yes, What type of quota?.....

b. How is the relation of cow farm to the locality area?

   i. Good

   ii. Average

iii. Bad

Note

Good- All are happy and don't create any problem,

Average- Sometimes dispute arises,

Bad- All are unhappy about the farm.

c. Do the locals create any kinds of barrier in operating the firm?

   i Yes

   ii. No

   Note: If Yes Go-to Q.N 3, if not skip Q.N 3.

d. In what matters do they keep on stopping the firm form operation?

   ……..

e. How do you settle the dispute?

   ……

e. Is there any provision of distribution of products to the local people (people of same ward) for free or in lower price (price lower than that of market)?

   i. Yes

ii. No

Environmental status

1. For the Locality

A. What are the environmental effects of the firm?

i. Air pollution

iii. water pollution

iv. sound pollution

v. None

b. How is the management the dung?

i. Not managed creating air pollution

ii. Properly managed and not creating any problems.

C. Do they use the dung as manure?

i. Yes

ii. No

iii. Don't know

d. How often do you get disturbed due to noise of the firm?

i. Once a day

ii. Many times, a day

iii. Intolerable times

iv. Not disturbed

e. Is there any water pollution caused due to the firm?

i. Yes

ii. No

iii. Don't know

If yes what are you facing?

…….

Quality and Quantity of Cow

1. How many times does a cow get milked?

a. 1 time

b. 2 time

c. 3 time

d. More than 3 time

2. How much milk does a single cow give in a single time?

a. Less than 2 liters

b. 2-4 1liters

c. 4-6 liters

d. More than 6 liters

3. Number of times a single cow gets diseased (in a month/ average)

   a. 1 time

   b. 2 time

   C. 3 time

   d. More than 3 times.

   e. None

4. How many times does a cow gets food (in a day)?

   a. 1 time

   b. 2 time

   C. 3 time

   d. More than 3 time

Annex II

Guideline for Key Informant Interview

Status of cow farming

Social status

Community relations: TO be asked with the senior personnel of the farm and the senior personnel of the community

1. How is the relation of farm and the locality?
2. Do conflicts arise in-between locality people and the darm personnel?
3. Do you have any special provision for the local peoples?

Economic Status: To be asked with the superior farm personnel

1. What is the total amount of investment of this farm?
2. How many partners are involved in this firm?
3. What is the total area of this firm?
4. Income of the firm
5. Total running cost of this firm
6. How many people are engaged?
7. Scale of their basic salary?
8. Any kinds of bonus preferences?

Environmental status

1. For the staffs:

a. How much dung does the firm produce?

b. Are there any kinds of pollution created by the firm?

c. How to manage the dung?

d. Management of water of farm?

e. Does the firm disturb the locality interms of noise pollution?

f. If yes how are you managing that?

g. How do you manage the fodder for the cow?

h. Any measures to conserve the environment?

i. How do you manage the unproductive cows?

j. How to manage bull cows?

Quality and quantity of cows

1. Number of cows
2. Frequency of cleaning the cows and their sheds
3. Breed of cows and their numbers

4. Availability of routine health checkup for cow
5. Procedures followed before and after coming from cow sheds

Technological overview

1. Processing system of milk
2. What is the processing system and how the milk is preserved?
3. How do we breed a cow?
4. Facilities provided to ensure good health of new born cows.
5. Feeding system
6. Use of technology in milking
7. How to manage fodders for cow farm?

Marketing Channel

1. What is used for processing the milk?
2. What steps are taken during the processing of milk?
3. Where, when and how do you distribute the milk or other products of cow?

Role of cow farm in changing socio-economic status

To the employees

1. Changes experienced after being engaged in farm
2. Change in your and your family's lifestyle
3. Perception of people towards you and vice versa
4. Any changes in lifestyle of other farm personnels noted after their involvement in farm?

To the locals

1. What benefits are you getting from this farm?
2. Have you experienced any shifts in your livelihood after the establishment of this farm?
3. How many people are getting employed in this farm from your locality?

Prospects and problems of cow farm

To the farm personnel

1. can this cow farm prove to be best suited employment generator?
2. Has this cow farm brought any change in the infrastructure of the area?
3. With the help of cow farm, has anyone or any group been benefitted?
4. What overall prospects can you see from this cow farm in near future?
5. What problems have you faced during the operation of the cow farm?
6. Any other kinds of problems caused by the locals?

7. Have you had any problems in acquisition of natural resources for the operation of cow farm?
8. What problems have you faced during rearing and caring the cows?
9. Any other problems related to the cow farming (milk and product distribution, channel management, human resource acquisition, natural resource use, disease outbreak control, etc.)

To the locals

1. Are they aware of CSR?
2. Have they been doing something to address CSR?
3. Can this cow farm prove to be best suited employment generator?
4. Has this cow farm brought any changes in the infrastructure of the area?
5. With the help of cow farm, has anyone or any group been benefitted?
6. What overall prospects can you see from this cow farm in the near future?
7. What problems has this cow farm caused to you?
8. Have this cow farm been polluting the natural resource base?
9. Any particular time on which people have been forced to circumcise their ability to work
10. Due to the pressure from the farm (both direct and indirect pressure)?

Annex III

Observation checklists

Quality and quantity of cow

1. Cow's physique
   - o Fat
   - o Normal
   - o Thin
2. Sanitation of the shed
   - o Clean
   - o Normal
   - o Dirty

3. Cow's status
   - O Wounded
   - O Normal
4. Cow's energy level (as of observed)
   - o Active and energetic
   - o Passive and lethargic
5. Cowshed management
   - O Separation as per the breed and as per the size
   - o Haphazard placement of cows
6. Area of the cowshed
   - o Big (enough for a cow to easily roam around)
   - O Small
7. Cow's rearing place
   - o A captivity
   - o Open area

Technological Overview

1. Presence of Processing Unit (Chilling Center)
   - a. Yes
   - b. No
2. Type of processing unit (for fodder)
   - a. Advanced
   - b. Primitive

3. Technology use in breeding
    a. None
    b. Advanced technology
    C. Nominal technology used
4. Technology used after the breeding
    a. Yes
    b. No
5. Use of a feeder
    a. Yes
    b. No
6. Presence of milking device
    a. Yes
    b. No
7. The scientific placement of sheds
    a. Yes
    b. No
8. Breeding center (for ensuring calves health)
    a. Yes
    b. No
9. Slopes in the base of cow sheds (for proper drainage)
    a. Yes
    b. No

Annex IV

Photo Gallery

FIGURE 7: RESEARCH IN FIELD

FIGURE 8: INTERVIEW WITH FARM PERSONNEL

FIGURE 9: COWS OF FARM

FIGURE 10: BOARD OF THE FIRM

FIGURE 11: TRUCK BRINGING HAY

FIGURE 12: GENERAL INTERVIEW

FIGURE 13: RESEARCHER IN FIELD

FIGURE 14: COW SHED OF FARM

FIGURE 15: COW PLAYGROUND

FIGURE 16: TOTAL AREA OF FARM